County Pest Exclusion Procedural Training Manual

California Department of Food and Agriculture

COUNTY PROCEDURAL MANUAL
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SECTION I: INTRODUCTION

1.1 INTRODUCTION TO THE MANUAL

This manual on plant quarantine procedures is designed as a reference guide to Pest Exclusion staff and a training tool for new permanent county inspectors. The overall goal of the manual is to provide a relatively easy means of developing good awareness of Pest Exclusion activities to the inspector and others interested in Pest Exclusion functions. It can be used by County Agricultural Commissioners to update or replace existing materials used in the training of their pest exclusion inspectors.

The manual is divided into sections. Section I consists of an introduction and some administrative responsibilities as it relates to plant pest quarantines in California. Excerpts from the California Food and Agricultural Code, California Code of Regulations and corresponding federal codes are contained in Section II. Readers should note that any discrepancies between what is in this manual and the code(s) must be enforced and/or adjudicated according to the official code(s) in effect on the activity date. Selected inspection procedures and policies are discussed in Section III. Special commodity inspection procedures are presented in Section IV.

In using this manual as a training tool, inspectors may test their knowledge of Pest Exclusion activities with review questions in Section V. The manual includes a glossary and a key to acronyms at the end. Glossary terms are indicated in bold print throughout the text and are defined according to their meaning in the context of this manual. Some definitions in the glossary may not be applicable in other contexts. Users can tailor portions of this manual to fit their specific needs. Photographs, maps and forms presented in this manual are not copyrighted and can be copied and used as work sheets to assist the inspector.

All pesticides and related products mentioned in the text were registered by the appropriate federal and state agencies. Precautions on the product label and all instruction in this manual must be carefully followed. Developments in research and technologies may dictate modifications or changes in some of the procedures described in this manual. Mention of companies or commercial products in the manual does not imply recommendation or endorsement by the California Department of Food and Agriculture or Pest Exclusion Branch. The California Department of Food and Agriculture neither guarantees nor warrants the standard of any product mentioned in this manual.

1.2 HISTORY OF PLANT QUARANTINE IN CALIFORNIA

Agricultural activities in California date back to the 1760's when Spanish missionaries introduced field crops, and livestock to feed settlers and provide economic activity for converted natives. Cattle ranches became the main form of agriculture in California between 1820 and 1848, except in the Los Angeles area where grape and fruit tree production was prominent. After the gold rush, the early pioneers did not look far to find a great expanse of fertile soil and flat terrain, combined with a climate of rainy winters and hot dry summers.

Large acreages of prunes and grapes were planted in Santa Clara and Napa Valleys respectively. Citrus was grown in southern California. By the 1850's, wheat and barley production had exceeded local consumption in the broad plains of the San Joaquin Valley. Excess grains were exported to Europe, setting the pattern of international market integration that has characterized California agriculture to the present.

Rapid agricultural expansions in the state necessitated large needs for inputs. Grape cutting was shipped from Europe and citrus seedling was imported from Asia. Prune stock was propagated and orchards expanded rapidly. Irrigation systems were developed in the Sacramento and San Joaquin Valleys to enable production of irrigated crops.

It did not take long before disasters struck. Grape phylloxera (*Phylloxera vastatrix*) was introduced with shipments of grapevines from Europe. Cottony Cushion Scale was found infesting citrus imported from Japan. Prune stocks were found infested with San Jose scale. These and other insect pests and plant diseases came passively with shipments of imported plant materials. The early pioneers of agriculture in California then realized that some form of protections is needed to maintain the fast expanding and important

agricultural industry. Like the crops, pests/diseases introduced to the state thrived in the new environment due to the favorable climate and absence of natural enemies or parasites.

In response to the pest/disease threats, the California State Legislature established the position of Viticulture Officer in 1881. The officer was given the authority to adopt horticultural quarantine rules for the protection of California horticultural interests. The quarantine rules provided for the inspection, disinfection, prohibition and condemnation of plants or plant parts when found infested with pests/diseases. County Boards of Horticultural Commissioners were also created in 1881 to oversee inspection of plant materials moving between counties within the state. In 1889, the State Legislature passed the State Horticultural Quarantine Act. This Act provided for a State Horticultural Quarantine Officer. An inspector was appointed at San Francisco in 1890, to implement provisions of the act, thereby, inaugurating the first plant quarantine inspection service in California. Shipments of plant materials from China, Japan, Australia, New Zealand, Hawaii and Central America were carefully inspected. Infested materials were held and treated as required by the act. In 1911, California officials began inspecting the baggage of ship passengers from Hawaii in response to a discovery of the Mediterranean fruit fly on the island.

A rapid expansion of the plant quarantine activities in 1917, brought about an increase in personnel and reorganization of port inspections, as well as county horticultural commissioners serving as quarantine guardians for freight, express and mail shipments. In 1919, the legislature created the California Department of Food and Agriculture (CDFA) and charged it with the responsibility of protecting and promoting agriculture in the state. The department directed plant quarantine works with the County Horticultural/ Agricultural Commissioners. Increased automobile use in the 1920s led to the establishment of agricultural border inspection stations to prevent introduction of agricultural pests and diseases into the state through people traveling by road. Detailed information on the history of CDFA can be accessed online.

1.3 ADMINISTRATIVE RESPONSIBILITIES

Pest exclusion activities involve cooperative functions that involve federal, state, and county governments. The Secretary of the United States Department of Agriculture (USDA), the Secretary of the California Department of Food and Agriculture (CDFA), and the County Agricultural Commissioners have prime responsibilities for pest exclusion within their respective jurisdictions.

1.3.1 FEDERAL RESPONSIBILITIES

The Plant Quarantine Act of 1912, as amended authorizes regulation of the movement of plants and plant products into the United States, and the movement of any article within the United States to guard against the entry or distribution of injurious insects and plant diseases. The Federal Plant Pest Act of 1957 as amended was enacted to facilitate the regulation, control, and eradication of plant pests. It gives authority to the USDA Secretary to act against pests, which may injure plants, or any processed, manufactured, or other plant products.

The USDA Secretary has sole responsibility to quarantine against pest entry into the United States from foreign countries. The secretary also has prime authority for domestic quarantines regulating interstate or local movement of pests and their vectors.

The USDA, Animal and Plant Health Inspection Services (APHIS), Plant Protection and Quarantine (PPQ) branch is responsible for the enforcement of federal foreign and federal domestic quarantines. Under the supervision of the USDA's state Plant Health Director, APHIS, PPQ officials in conjunction with the Department of Homeland Security's Agricultural/ Customs officials at international ports of entry. They inspect foreign arrivals at major maritime ports, international airports, entry points along the international border, and military bases. In Hawaii, PPQ personnel perform pre-clearance inspections for passengers and cargo coming to California as well as other mainland states.

Federal authority to inspect cargo at ports of entry for compliance with federal requirements does not preclude inspection of same cargo by state inspectors for compliance with state requirements. The state/county has complete authority to perform quarantine inspections anywhere within its boundaries, and then act upon its findings. State responsibilities cannot be relieved by federal inspection, but inspection requirements of both agencies can be met by vesting dual authority in one agent.

1.3.2 STATE RESPONSIBILITIES

The Secretary of the California Department of Food and Agriculture has prime responsibility to protect the state against pest introduction. Section 403 of the Food and Agricultural Code mandates CDFA to employ a pest prevention system. Five elements of CDFA's pest prevention system are:

- Pest exclusion
- Pest detection
- Pest eradication
- Pest identification and records
- Public information and education

The goal element and mission of the pest exclusion branch are to:

- Keep pests out of the state
- Limit intrastate /interstate spread of new pests

The Pest Exclusion Branch is divided into four programs:

- Exterior Exclusion
- Interior Exclusion
- Nursery (including Seed and Cotton Services)

Exterior Pest Exclusion Program personnel work at California border stations to enforce:

- Food and Agricultural codes
- Federal and State quarantines
- County enforcement policies

Personnel also monitor and inspect cars, commercial trucks, buses and recreational vehicles entering the state to ensure that they are not bringing any pests of quarantine significance into the state. Shipments that cannot be inspected adequately at the borders are sent under 'Quarantine Hold', to the destination counties for inspection by the county agricultural commissioner's inspectors.

The **Interior Pest Exclusion Program** is responsible for enforcing federal foreign and domestic plant quarantines as well as California exterior and interior quarantines. Interior Exclusion staff works cooperatively with

- USDA,
- DHS, Customs and Border Patrol
- Other states departments of agriculture
- County agricultural commissioners' staff
- Other government agencies
- Industry

The program performs regulatory and service functions to exclude pests and/or diseases that may be detrimental to California agriculture. This is achieved through:

- Pest surveys at ports
- County quarantine
- Quarantine responses
- Inspection of:
  - Domestic aircraft
  - Domestic and second port of call foreign vessels
  - Crews quarters
  - Passenger baggage
    - Cargo shipments

Program personnel cooperate with county agricultural commissioners in the direction, supervision and coordination of quarantine laws and regulation enforcement.

In order to prevent the spread of any newly detected exotic pests, Interior Pest Exclusion responds rapidly and cooperatively with county and USDA officials to enforce various emergency quarantines. Enforcement is accomplished by inspecting arriving agricultural commodities, and pest-infested commodities are treated, destroyed or refused entry into the state. Interior Pest Exclusion also works closely with USDA and counties to

- Coordinate the phytosanitary export program
- Train county staff on phytosanitary certifications

The CDFA's Interior Pest Exclusion Program is divided into four districts:

District	**Station(s)**
1. Northern	Sacramento, San Francisco
2. Central	Fresno
3. Coastal	City of Commerce and Van Nuys
4. Southern	Anaheim, Lemon Grove, Riverside

1.3.3 COUNTY RESPONSIBILITIES

County agricultural commissioners are the enforcing authority of all laws and regulations relating to the prevention of the introduction into, or the spread within, the state of pests in their counties. The commissioners enforce federal and state interior quarantines at

- Interior delivery points
- Terminals
  - Post offices
  - Private carriers e.g. UPS, air freight and express
- Truck and bus terminals
- Railroad freight yards
- Seed houses
- Plant nurseries
- Feed mills
- Produce markets
- Military airfields

1.4 THE NATIONAL PLANT BOARD

The National Plant Board (NPB) is an organization of plant pest regulatory agencies of each states and territories department of agriculture. The Board was formed in 1925 with the following purpose:

- To represent regional plant boards at the national level and to carry out instructions issued by the regional plant boards.
- To bring out greater uniformity and efficiency in the promulgation and enforcement of plant quarantines and plant inspection policies and practices in the various states.
- To act as a national clearinghouse for information in plant quarantines and plant inspection policies and procedures.
- To promote harmony and uniformity in the field of plant pest regulation.
- To maintain contacts with the United States Department of Agriculture and other federal and state agencies concerning quarantine policies that have national, regional or individual state effects.
- To advance and protect agriculture, horticulture and forestry on the state, national and international levels.

The National Plant Board members work cooperatively with the National Association of State Departments of Agriculture to prevent the entry of new pests and diseases into and in the country; and provide phytosanitary certification for export of agricultural commodities. The board also provides consultations for states by serving on technical and advisory committees established by cooperators.

SECTION II: LEGAL AUTHORITY AND QUARANTINE REGULATIONS

2.1 INTRODUCTION

California laws consist of 29 codes, with statues and regulations covering various subjects pertaining to government agencies including food and agriculture. Information presented below is more specific to some laws that effect agriculture and related activities.

All laws or statues such as those that become sections of the Food and Agricultural Code (FAC) are enacted by the passage of bills, either as a new law or amends or repeals of existing law(s). A bill becomes a statue when it is signed by the Governor and given a final chapter number by the Secretary of State. The Governor's Office works in conjunction with the Secretary of State's Office to ensure that signed bills are enacted in the order intended by the Legislature and the Governor.

The following sections address general pest exclusion powers and duties of the Secretary and employees of the California Department of Food and Agriculture, as well as those of county agricultural commissioners and their employees.

2.2 AGENCIES POWERS AND DUTIES

2.2.1 CALIFORNIA DEPARTMENT OF FOOD AND AGRICULTURE

The powers and duties of CDFA are outlined in Sections 401-411 of the Food and Agricultural Code and should be summarized as follows:

- Promote and protect the state's agricultural industry.
- Enhance, protect, and perpetuate the ability of the private sector to produce food and fiber in a way that benefits the general welfare and economy of the state.
- Maintain the economic well being of agriculturally dependent rural communities.
- Prevent the introduction and spread of injurious insect or animal pests, plant diseases, and noxious weeds.
- Execute the provisions of this code, except as otherwise provided, and the other laws administered by it.
- With a prior approval of the Department of Fish and Game and the State Department of Health Services CDFA may reproduce or distribute biological control organisms that are not detrimental to public health and safety that are known to be useful in reducing or preventing plant or animal damage due to pests or diseases.
- Requires reports from County Agricultural commissioners for pest exclusion, treatment and control activities.
- The director and staff of CDFA's Plant Health and Pest Prevention Services (PHPPS) may enter upon any premises within the state to inspect the premises. This include inspection any plant, appliance, or thing for pests and diseases, which is on such premises.
- The CDFA by rule or regulation may provide for the issuance and renewal on a two-year basis of licenses, certificates of registration, or other indices of authority.

Organization

The California Department of Food and Agriculture is under the control of a civil executive officer known as the Secretary of Food and Agriculture. He or she shall be appointed by, and hold office at the pleasure of, the Governor.

The Secretary may appoint and in accordance with law, fix the salaries of such assistants, deputies, agents, experts, and other employees as are necessary for administration of the department.

Intergovernmental Cooperation

The CDFA may, with the approval of the Governor, cooperate with officials of the USDA or with officials of other states in the conduct of pest or disease investigations. This would be in the interest of protecting the state's agricultural industry from any pest or disease, which is not generally distributed in the state.

The director of CDFA's Plant Health and Pest Prevention Services (PHPPS) may enter into cooperative agreements with individuals, associations, boards of supervisors, and with departments, divisions, bureaus, boards, or commissions of the state or United States for the following purposes:

- Eradicate, control, or destroy any infectious disease or pest within California.
- Administer and enforce any activity, duty, or responsibility under the food and agricultural code, in addition to those activities, duties, or responsibilities designated or authorized to be carried-out by County Agricultural Commissioners.
- Arrange for the services of any individual employed by the United States, the state, or a county on a collaborative basis.

2.2.2 STATE BOARD OF FOOD AND AGRICULTURE

The State of Board of Food and Agriculture advises the governor and CDFA Secretary on agricultural issues and consumer needs. The Board may make investigations, conduct hearings and prosecute actions concerning any matter or subject, which is under the jurisdiction of the department.

The Board meets monthly and conducts public forum that discuss issues that affect agriculture. These issues include pest prevention strategies, food safety, environment effects, urbanization, flood damages from winter storms, and future trends in agriculture.

Board members are appointed by the governor, represent a broad range of agricultural commodities, geographic regions, the University of California and the California State University academic systems. The following guidelines are used in the selection of board members:

- One member represents the University of California.
- One member represents the state universities and colleges offering agriculture as part of its curriculum.
- Two members are from the state at large and represent the agricultural industry.
- Seven members represent the agricultural industry.
- Two members, with interest in and knowledge of the environment, represent the general public.
- Two members, with an interest in and knowledge of consumer affairs, represent the general public.

2.2.3 COUNTY AGRICULTURAL COMMISSIONERS

The Food and Agricultural Code stipulates that a County Agricultural Commissioner shall make an annual report to the Director of CDFA's PHPPS on:

- Condition of agriculture in his or her county
- Pest detection, eradication, control, or management activities
- Pest exclusion actions or quarantine against pests
- Apiary, nursery and seed inspections
- Fruit and vegetable quality control
- Biotechnology, organic farming methods
- Integrated pest management and biological control
- Crop statistics

The commissioner shall:

- Attend the annual meeting of the California Agricultural Commissioners Association or its successor, and other required meetings.
- Consult with USDA, CDFA, the UC systems, and other county agricultural commissioners on new and dangerous agricultural pests, observing and learning new/better methods of pest control.
- Disseminate information, relating to pests that may exist in his/her county, or are likely to exist in it. The information may include life histories, habits, methods of detection, and methods of control of such pests.
- Joint responsibility for the enforcement of laws and regulations are vested on PHPPS director and County Agricultural commissioner. The commissioner shall be responsible for local administration of the enforcement program.
- Assist CDFA in conducting surveys or investigations for the purpose of preventing the introduction an/or spread of

injurious insect or animal pests, plant diseases, and noxious weeds.

- Contract with any person or association to certify the condition of a shipment of a regulated product.
- Correspond and meet with any interested individual, agency, group, association, or educational institution with an interest in, or information regarding, agricultural practices, as resources allow.
- The commissioner may enter into a mutual aid agreement with other counties for the purpose of sharing staff, equipment, expertise, information, and other resources.

As used in this manual "agriculture" includes, but is not limited to, developments and issues regarding all agricultural practices, traditional and alternative pest control methodology, and other areas of agriculture resource management.

The discretionary immunity doctrine as applied to a public entity and an employee of a public entity pursuant to Sections 815.2 and 820.2 of the Government Code applies to decisions of a county department of agriculture and their employees enforcing a state or local pest control or pest eradication statute, regulation, or ordinance. Nothing in this section authorizes or affects the filing of an action challenging the legal authority of the county department of agriculture to undertake the pest control or eradication action.

2.2.4 MEMORANDUM OF UNDERSTANDING – PLAN FOR PEST PREVENTION

PARTIES
California Department of Food and Agriculture ant the California Agricultural Commissioners and Sealers Association

GENERAL PRINCIPLES
Pest prevention in California is mandated by Section 403 of the Food and Agricultural Code, which states, "The Department shall prevent the introduction and spread of injurious insects or animal pests, plant diseases, and noxious weeds."

The State of California administers and operates a Pest Prevention System of five major components, pest exclusion, pest detection, pest eradication, public information and education, and pest identification and records.

1. PEST EXCLUSION

Definition: "Pest Exclusion" is the legal action intended to prevent the introduction of a pest into an area where it does not already occur or into an area where legally established suppression or eradication activities are directed against it.

A. It is the policy of the State of California to fully utilize Pest Exclusion as an integral part of the Pest Prevention System.

B. It is policy of the State of California to encourage origin states to eradicate and control pest infestations that threaten California. It is the policy of the state of California to encourage the USDA and origin states to establish valid certification programs.

1. Pest exclusion regulations shall be based on "biologically sound" principles. To be "biologically sound", a pest exclusion regulation must meet the following criteria:
    a. The biological background of the pest is fairly well known, including its life history, hosts, mode of spread, and detection techniques
    b. Infestation is unknown in area to be protected, or is under eradication
    c. Interception and prevention of entry are reasonably possible
    d. There exists a reasonable assurance that the pest can be contained
    e. The potential ecological range of the pest is known
    f. The pest presents a threat to economic, social, or environmental impact to plants within the protected area
2. Pest exclusion regulations shall not be promulgated for or used as barriers to interstate commerce except as a bona fide attempt to protect against pest infestation.

C. Pest exclusion operations:

1. Maintain pest introduction deterrent for entire state by regulating the movement of target pests from an infested area to a protected area.
    a. Regulate surface vehicles entering protected are from areas of pest contamination
        i. At points which will provide statewide protection
        ii. At appropriate times to be effective

b. Monitor air and maritime traffic entering the state for plant pest
    i. Inspect all cargo shipments
    ii. Spot check travelers
c. Maintain terminal inspections
    i. US Post Office
    ii. Common carriers
    iii. Hay and grain terminals

2. Cooperate with Federal Government and other states
    a. Promote uniform pest exclusion regulation
    b. Strengthen and encourage valid origin certification

_____ _____
California Department of Food Agriculture Date

_____ _____
CA Agricultural Commissioners Association Date

2.2.5 MEMORANDUM OF UNDERSTANDING – PLANT PEST QUARANTINE POLICY

PARTIES
California Department of Food and Agriculture and the California Agricultural Commissioners and Sealers Association

PURPOSE
Plant Pest quarantines are imposed to prevent the artificial introduction of or limit the spread of agricultural plant pests. Such quarantines may restrict the production, movement or existence of plants, plant products, animals, animal products, or any other articles or material, or activity of people, which could result in the artificial introduction, or spread of the specified pests.

AUTHORITY
The Director is charged with the responsibility for preventing the introduction and spread of injurious or animal pests, plant diseases, and noxious weeds (Section 403, Food and Agricultural Code). He is authorized to adopt such regulations as are reasonably necessary to fulfill this responsibility (Sections 407, 5301, 5302, and 5322, FAC). Other governmental agencies (e.g., counties, cities, and districts) may not establish quarantines against each other, on account of the existence of any pest, without the written consent of the Director (Section 5305, FAC).

GENERAL PRINCIPLES

1. Inasmuch as the purpose of plant quarantines and the means required to achieve them cannot be undertaken by private individuals or groups, quarantines properly are the responsibility of government
2. Quarantines shall not be imposed as trade barriers
3. Quarantines will be established on a biologically sound basis:
    a. The plant pest targeted must pose an actual or anticipated threat to a substantial agricultural interest and/or the general public.
    b. Not substitute or alternative mitigating action will accomplish the same pest prevention purpose.
    c. Accomplishment of the stated purpose is a reasonable expectation.
    d. Economic and/or environmental benefits outweigh the cost of administration and the costs to those who must comply with the restrictions imposed.
4. Regulations establishing quarantines will be adopted with input from those interested in and affected by them. The agricultural commissioners and the United States Department of Agriculture are cooperating agencies, which will be involved as appropriate.
5. Quarantines will be as narrow in scope as possible while maximizing the potential for accomplishing their purpose.
    a. Quarantines imposed in connection with plant pest eradication projects reasonably may be broader in scope and/or more restrictive because of the importance of the quarantines pest, the prognosis for its eradication or control, and its effects on the environment.
    b. Quarantines imposed to prevent or slow the spread of an already established pest allow of the scope of and restrictions imposed to be relatively narrow.
6. Quarantine areas will be as limited as possible consistent with the area known to be infested with the pest. Whenever possible, boundaries shall be based upon existing jurisdictional state, county or township lines, major highways or roads, or geographic features such as rivers and mountain ranges.
7. Quarantines will be written as clearly and concisely as possible so as to enhance understanding and enforcement.

8. The absence of complete biological knowledge of a pest will not necessarily prohibit the adoption of a quarantine.
9. Adoption of a quarantine against a serious plant pest new to the state or new to a major area of the state will be accompanied by an information campaign, the scope and intensity of which is in proportion to the economic and/or environmental importance of the pest.
10. The scope of and restrictions imposed should be reduced or increased based on experience and information obtained in the administration of the quarantine.
11. Regulations establishing quarantines will be repealed when their purposes have been accomplished, the pest quarantined against has been eradicated or its spread can be controlled in absence of the quarantine, or it is determined that the purpose cannot be achieved.

EXTERIOR QUARANTINES
Exterior quarantines will be adopted to prevent the artificial introduction of serious plant pests into California. Consistent with the general principles, they will be adopted only when no substitute or alternative mitigating action will accomplish the same purpose. They also will be as limited as possible in terms of area and commodities covered. Exterior quarantines are promulgated to protect the health and welfare of the entire state. Consequently, they reflect statewide pest exclusion concerns.

INTERIOR QUARANTINES
Interior quarantines will be adopted as necessary to complement state plant pest eradication projects or to prevent or slow the spread of a serious plant pest already established in California. They will be established consistent with the general principles, but with greater emphasis placed on a cooperative relationship between the director and the agricultural commissioners. At the termination of an unsuccessful eradication effort the interior quarantine will evaluated to determine, consistent with the principles herein, if the quarantine should be maintained, amended or discontinued.

Interior quarantines adopted to aid in the state's eradication of new serious pests not established in the state generally will be funded, subject to budget appropriation or redirection, together with the other eradication costs.

Interior quarantines adopted or amended to prevent or slow the spread of pests already established in California are not expected to result in increased overall county costs. County departments of agriculture will shift priorities within their agricultural programs accordingly. Only in those instances where the county must hire additional employees is a state-mandated increase in cost deemed to exist. Where possible, the increased costs should be recovered by the affected counties via charges for the inspections required by the quarantine.

LOCAL COUNTY ORDINANCES
Section 5305, prohibits the establishment by local jurisdictions of quarantines against each other, on account of the existence of any pest, without the written consent of the director.

The required consent may be granted only in those instances where the director has determined: 1) That the pest is not of statewide interest and concern and/or an interior quarantine will not be adopted; and, 2) That the ordinances establishing a quarantine was adopted following the notification, publishing, public input and other requirements which mush be met by the director, under section 11340, et seq., of the Government Code, when he adopts quarantine regulations, except that notice of the proposed ordinance shall not be published in the California Administrative Notice Register and required documents shall be file with the director and not with the Office of Administrative Law.

Consent will not be granted when the ordinance has an effective date earlier than 30 days following the director's consent unless the ordinance is adopted because an emergency exists.

QUARANTINE COMMISSIONER'S CIRCULARS (*this document had been merged with County Training Manual to County Procedural Training Manual*)

Quarantine Commissioner's Circulars regarding local quarantine ordinances, lawful rejection practices, and policies of the various county departments of agriculture will be prepared, distributed and maintained by the department to keep agricultural commissioners and industry apprised of local ordinances, practices, and policies. Such circulars shall not impose certification or other conditions of entry of commodities or otherwise have the effect of quarantines, except when they are noticing the requirements imposed by local ordinances, which have received the director's written consent. County rejection practices and policies regarding intrastate shipments of plants or other carriers of plant pests of local concern shall be in accordance with the authority granted in sections 6501-6524 of the Food and Agricultural Code.

_____ _____
California Department of Food and Agriculture Date

_____ _____
CA Agricultural Commissioners Association Date

2.2.6 MEMORANDUM OF UNDERSTANDING – PROCEDURE FOR HANDLING PLANT QUARANTINE SHIPMENTS

PARTIES
California Department of Food and Agriculture and the California Agricultural Commissioners and Sealers Association

GENERAL PRINCIPLES
For the sake of uniformity in plant quarantine, the following is established as a procedure for determining the status and proper disposition of shipments subject to plant quarantine inspection.

A shipment *shall* be rejected if it is:

a. In violation of a law or quarantine regulation of this state or the federal government, or

b. Infested or infected or there is reasonable cause to believe* that it is infested or infected with any animal or other organism dangerous or detrimental to the agricultural industry, which in the area of destination is (a) new or not known to occur, or (b) of limited distribution, or (c) being subjected to eradication or intensive control.

A Shipment *shall not* be rejected if it is:

a. Not in violation of a law or quarantine regulation of this state or the federal government, or

b. Infested or infected with any animal or organism which in the area of destination is (a) of common occurrence, and (b) not being subjected to eradication or intensive control.

**"Reasonable cause to believe" is not applicable to weeds or weed seeds.*

_____ _____
California Department of Food and Agriculture Date

_____ _____
CA Agricultural Commissioners Association Date

2.2.7 SOME GENERAL PROVISIONS OF THE FOOD AND AGRICULTURAL CODE

The purpose of California's Food and Agricultural Code (FAC) are:

- To promote and protect the state's agricultural industry.
- Protect public health, safety, and welfare.

In all civil actions, the provisions of FAC shall be liberally construed for the accomplishment of these purposes and several divisions of the code. Some general provision of the FAC are highlighted below:

- Any person in whom the enforcement of any provision of the FAC is vested may serve all processes and notices.
- The district attorney of any county in which a violation of any provision of the FAC occurs shall, upon request of any enforcing officer or other interested person, prosecute such violation. Unless a different penalty is expressly provided, a violation of any provision of this code is a misdemeanor.
- It is unlawful for any person to alter any record or document, in the office of a commissioner, that is required to be filed pursuant to any provision of the FAC or pursuant to rules and regulations authorized by the code, without the approval of the commissioner or an authorized deputy.
- Whenever any notice, report, statement, or record is required by this code to be kept or made in writing, it shall be in the English language.

  Any document that is required or permitted by the FAC to be recorded shall be recorded in the office of the county recorder of the county in which the property or product is situated.
- Proof of possession by any person engaged in the sale of a commodity established a presumption that the commodity is for sale.
- Unless otherwise stated, the masculine gender includes the feminine and neuter; and the singular number includes the plural, and the plural the singular.
- Plants growing in native stands or planted for ornamental purposes are considered as part of the agricultural industry; and must be protected from pests and diseases.

2.3. CALIFORNIA CODE OF REGULATIONS

The California Code of Regulations (CCR) contains rules and regulations, which have been promulgated by individual state departments according to authority granted to them by the legislature. The departments follow procedures set forth in the Administrative Procedures Act of the Government Code and the regulations of the Office of Administrative Law (OAL).

These "administrative rules and regulations" do not have to be passed by the legislature or signed by the governor. An exception to this rule is the state exterior quarantines, which must be signed by and proclaimed by the governor. Administrative rules and regulations are therefore much easier and faster to enact, modify or repeal as conditions change (see Section 2-6). The rules and regulations are more specific than the Food and Agricultural Code statutes and can be regarded as the working manual for enforcing the Food and Agricultural Code. Most of the rules and regulations in the CCR pertaining to agriculture are included in Title 3, Chapter 4. This title deals with plant health. Chapter 4, subchapter 3 focus on entomology and plant quarantines.

Regulations related to plant quarantines are assembled together to form the Plant Quarantine Manual.

2.3.1 FREQUENTLY ASKED QUESTIONS

What is a regulation?
A regulation is a rule adopted by a state regulatory agency to implement, interpret, or make specific the law enforced or administered by it, or to govern its procedure.

Do regulations have the same effect as laws?
Yes. Legally adopted regulations filed with the Secretary of State have the force of law.

What is the difference between a regulations and a statute?
A regulation is adopted by a state regulatory agency, approved by the OAL, filed with the Secretary of State and signed by the Governor. A statute, law or rule is passed by the legislature and signed by the governor.

By what authority can an agency adopt regulations?
A regulatory agency receives its power to adopt laws from statutes. This authority is cited at the end of each regulation. Certified copies of regulations are available at the State Archives in the Office of the Secretary of State (916-653-7715).

Do agencies have to adhere to guidelines when adopting regulations?
Yes, agencies are to follow the procedures set forth in the Administrative Procedure Act.

What is the Administrative Procedure Act (APA)?
The APA sets forth the procedures that state agencies must follow when adopting regulations. Among other requirements, it requires state agencies to:

- Give public notice
- Receive and consider public comments
- Submit regulations and rulemaking files to the Office of Administrative Law for review. The review is to
  - Ensure compliance with APA requirements
  - Have the regulations published in the CCR's

Must all agencies comply with the APA requirements?
The majority of agencies must comply with APA requirements. However, an agency may be exempt by statute from complying with the procedures in APA.

If an agency is to comply with the APA but does not, what is the status of those regulations?
Such regulations are invalid. They are commonly referred to as "underground regulations."

2.4 PLANT QUARANTINE MANUAL

The Plant Quarantine Manual (PQM) contains CCRs, policies and guidelines that are in effect and used in day-to-day state and county pest exclusion activities. Updates and revisions to the PQM are distributed by email and/or as printed copies. At the PQM website, the manual is available in the hypertext markup language (HTML) and Portable Document Format (PDF) formats.

Each inspector should read, understand, and file changes properly in his/her personal print copy of the PQM. It is important that inspectors update their PQM regularly to ensure proper decision-making in the field. And out-of-date manual section could lead to enforcement errors with expensive consequences in terms of accidental pest introductions or mistaken commodity rejections or destructions. The PQM is organized into distinct sections, separated by colored tabs for ease of reference.

The first section is “Federal Foreign Quarantine.” These quarantines are directed against pests that occur in locations outside U.S. political boundaries. An example is CFR 319.19 (Citrus Nursery Stock), which is intended to prevent the introduction into the U.S. of serious citrus diseases, such as citrus canker, that occur in other countries.

The next section is “Federal Hawaiian and Territorial Quarantines.” Federal territorial plant pest regulations, involve Hawaii due to its unique regulatory history, pest infestations, and geographic location. For example, CFR 318.13 addresses Hawaiian fruits, herbs, and vegetables, while CFR 318.58 summarized enterable fruits and vegetables from Puerto Rico and the Virgin Islands.

The third section is “The Federal Domestic Quarantines.” This section discusses regulations for plant pests such as asian long horned beetle, citrus canker, gypsy moth, and red imported fire ants. The federal government through USDA has jurisdiction over interstate movement of regulated commodities that could harbor pests of “limited distribution,” which are subject to intensive or extensive eradication or suppression programs in the states where they occur. Title 7, Chapter 3, Part 301 of the CFR contains the full text of these quarantine notices that is summarized in the PQM.

The California Department of Agriculture CDFA can act on behalf of federal authorities when pursuing violations of federal quarantine regulations in California, as if such violations were to CDFA provisions (California Food and Agricultural Code, Section 6301.1, PQM page 109.1).

The full texts of California State exterior and interior quarantines are presented in the PQM. Each section is organized by title, pest species, area under quarantine, and articles/commodities regulated. They list all restrictions that must be met to allow shipments of regulated articles into or within the state. One or more appendices may follow these subparts, and expand or define particular provisions of the regulations. It could signify to the inspector, the need for heightened inspection vigilance in areas infested by a particular pest(s)/disease(s) mentioned under authority of FAC Section 6461.5. These appendices are not part of the actual regulations, but in the future may be proposed and incorporated into the quarantine text as amendments.

In the next part of the PQM, “California State Exterior Quarantines” are outlined. These quarantines are designed to exclude agricultural pests and/or diseases that are known to occur in other states or territories from entering the State. Its purpose is to prevent the artificial introduction and distribution of known, suspect or potential agricultural pests into the state. Examples of State Exterior quarantines include citrus pests, cotton pests, European corn borer, burrowing and reniform nematodes, Japanese beetles.

“California State Interior Quarantines” are presented in the next part of the PQM. State interior quarantines are proposed and officially adopted as necessary to prevent or slow the spread of serious plant pests known to occur in the State and against which active eradication efforts may be underway. Many federal quarantines against exotic fruit flies like Mediterranean fruit fly, Oriental fruit fly, Mexican fruit fly, etc mirror quarantine regulations enacted by the State to address pest outbreaks. If no quarantine actions were to be taken by CDFA against such pest(s) when found in California, the federal government through USDA could impose quarantine on the entire State. This would seriously disrupt agricultural trade and commerce.

The final component of the PQM lists “County Restrictions.” Some of the restrictions may be ordinances against various agricultural pests. County restrictions have the intent to prevent the introduction into a particular county of those pests known to occur in other counties. In addition, these restrictions would apply to regulated commodities entering the county from out of state as well.

2.5 OFFICE OF ADMINISTRATIVE LAW

The Office of Administrative Law is responsible for reviewing administrative regulations proposed by state agencies for compliance with standards set forth in California's Administrative Procedure Act (APA). State agencies must consider suggestions and objections from the public before it adopts or changes any regulation not exempted from the Administrative Procedure Act.

After adoption, regulations may affect economic activities in many segments of the California public. The OAL reviews each proposed regulation and approves a regulation only when the rulemaking agency has adequately considered public comments. Such regulation must be easily understood, necessary, authorized, and consistent with law. When approved and filed with the Secretary of State, a regulation has the force of law. Regulations are printed in the California Code of Regulations. In addition to its regulatory review program, OAL responds to requests for determinations regarding whether a state agency rule meets the statutory definition of a “regulation,” and if so, whether the rule should have been, but was not, adopted pursuant to the requirements of the Administrative Procedure Act.

State agencies like CDFA may adopt an Emergency Regulation anytime it can demonstrate an immediate need for a regulation to protect the public or if a statute deems the regulation to be an emergency for purposes of the APA. The public may comment directly to OAL on emergency regulations within five days after the regulation is submitted to OAL for review. The OAL has up to 10 calendar days to review an emergency regulation. The OAL reviews emergency regulations to determine if an emergency has been demonstrated, or deemed by statute and whether the regulation satisfies the authority, reference, consistency, clarity, non-duplication, and necessity standards.

2.6 COMPLIANCE AGREEMENTS

Compliance Agreements are tools used by CDFA and/or cooperating Pest Exclusion Programs to ensure that regulated/ quarantined businesses or individuals comply with regulatory restrictions during their conduct of business without the risk of further spreading the regulated pests or diseases. The agreement reduces regulatory workloads and helps to facilitate movement and orderly marketing of regulated commodities. Nurseries that signed a compliance agreement need not wait for a regulatory inspector to be present to certify each shipment of nursery stock that leaves its facility. These establishments can "self-certify", load, and ship the qualifying nursery stock at any time.

It is important to carefully complete and review a compliance agreement prior to signing it. The business owner, manager or designated employee can sign on behalf of the establishment whereas a CDFA, USDA, or County Inspector will sign for Interior Pest Exclusion. A unique set of compliance agreement numbers is assigned to each business that is signed into compliance. The agreement is accompanied by exhibits that stipulate responsibilities, obligations, procedures, record keeping, time covered, verification audits, certifications and any other specific rules and regulations that must be abided for the agreement to be valid. Businesses/establishments that signed a compliance agreement generally agree to:

- Handle, process, and/or move all regulated articles in accordance with specified quarantine requirements.
- Follow CDFA, USDA, and/or County Agricultural Commissioner's personnel instructions for the use of any and all permits and certificates issued in the compliance agreement.
- Reproduce a federal, state, or county quarantine shield/certificate having exact languages of the quarantine and compliance agreement number, in specific format(s).
- Use quarantine certificates only for shipments of regulated articles that have been inspected and found free of the pest/disease.
- Maintain and make such records as above accessible for inspection upon reasonable notice by the CDFA, USDA, and/or county staff.
- Coordinate pest/disease treatments and surveys with Exclusion personnel.
- Regulatory personnel may supervise all treatments.
- Pest Exclusion staff may survey the establishment for the pests/diseases at any time. Survey may include testing for residues of treatment pesticides in soil or commodities.

Two photocopies of the compliance agreement are made; one copy is kept in the program office as a working copy and the second copy given to the establishment for their records. Original copies of compliance agreements are generally maintained in a safe place at the program office or the issuing office for at least 3 years and thereafter stored/destroyed according to local recycling policies.

Below are some examples of compliance agreements.

- Sudden Oak Death Compliance Agreements
  - For Nurseries in Non-infested Counties (Regulated)
  - For Nurseries in infested Counties (Quarantined)
- Red Imported Fire Ant Compliance Agreements
  - Production Nurseries
- Fruit Flies Compliance Agreements
  - General Compliance Agreement

2.7 HOLD NOTICE

Recommendations for Hold Notice (PDF, MS WORD versions) normally originate with CDFA or County Agricultural Commissioner's office staff. The purpose is to prevent the movement of possibly infested or infected articles until the pest status can be determined and the risk of spread eliminated. Hold Notice is needed during the time between the discovery of an infestation and the effective date of a new quarantine. Regulatory staff of most eradication projects routinely issues the notices.

The following are some instances where a hold notice may be needed:

- Any property found infested with a serious plant pest not known to occur in California where immediate action cannot be taken to eradicate. Such an example is potato field that is infected with powdery scab of potatoes.

- Any high-risk location, such as an orchard, within five miles of a new exotic fruit fly infestation.
- Any property where there is reasonable causes to presume an A-rated pest may exist, and regulated articles would otherwise be moved.
- A feed grain mill containing grain contaminated with noxious weed seed, with no apparent method of safe handling such material.
- A nursery where adult Japanese beetles were found.
- Fields of grain thought to be infested with an A-rated pest where there is a need to sample, test, treat, or process the resulting grain from such fields.

Food and Agricultural Code Section 5701 authorizes that a hold notice may be issued for any premise located within a five-mile radius of a pest find to prohibit movement of host material. Hold notices may initially be given verbally but this is not recommended and would make it almost impossible to take further legal action against violators. Section 5702 and 5704 of the Food and Ag code requires that all hold notice releases shall be in writing.

The written hold notice does not have to be on any special form. Some county agricultural commissioners have developed their own form for this purpose. A sample Hold Notice (PDF, MS Word) form is included below. This form may be placed on county letterhead.

The nursery program has a special hold notice form to fit its needs; "Notice to Hold Commodities on Premises", Form 64-069. It is used on stock infested or infected with A, B, or Q - rated pests. They also use the hold notice authority given in section 5701 of the Food and Agricultural Code when issuing a "Report of Nursery Inspection/ Notice of Noncompliance", Form 64-064.

USDA-APHIS-PPQ has an "Emergency Action Notification" PPQ Form 523 that is often used in addition to a CDFA hold notice when the pest is of federal significance.

Contact the local CDFA – Pest Exclusion office for advice on issuing hold notices.

2.8 PERMITS AND REGULATIONS

I. State Permits. This is generally used for intrastate movement of agricultural commodities. The CDFA's Special Permits Program has the authority to approve or deny applications.

A. Quarantine Commodity
(Requires PE Form 66-045 – Application and Permit to Move and Use Plant Quarantine Commodities)
Master Permits are issued to origin state regulatory agencies for multiple shippers. Individual Permits are generally issued to private party or to origin state for one shipper.

Steps to obtaining Permits

1. Private individual makes an inquiry and it is determined the commodity does not meet a State quarantine requirement.
2. Master permit exists; refer to origin state regulatory official so they can determine if they qualify to participate.
3. No master permit exists, the individual lives within California and there appears to be demonstrated need warranting the consideration of a permit (*commodity not available anywhere else; appears to be significant economic hardship: involves public entities or officials; etc.); refer to the Permits Program staff.
4. No master permit exists, the individual lives outside California and there appears to be a demonstrated need warranting the consideration of a permit; refer the individual to the proper origin state regulatory official. You should also inform the applicant that:
   - All permit requests must first be supported by the origin state regulatory agency. It generally involves some work on their part.
   - The origin state regulatory officials should believe they have a viable alternative to mitigate the pest risk covered by the State's quarantine(s).
   - The official should contact the Permits Program staff.
   - All requests for permits, including renewals, must be in writing and can be via an e-mail, fax, letter, etc.
5. The permit request comes directly from a regulatory official, direct to Permit Program staff.

***EXAMPLES**
Good candidate: San Francisco Conservatory of Flowers wants to reopen after the earthquake with some mature specimen plant for the public to view. These mature specimen

plants exist in Florida but cannot meet our quarantine requirements.

Not good: I live in Florida and I have a customer in San Diego and I want to ship him a 40-foot palm tree. Yeah, I know they are available in California but they are too expensive and I can make an additional $10,000 by shipping the Florida palm.

Good candidate: I work for the UC Riverside and there is a citrus variety that we can only find in Texas and would like to have as a source of germplasm for research purposes.

Not good: I live in Florida and planted citrus from see that I had for 10 years and would like to bring to California when I move there next month.

B. Live Plant Pests or Noxious Weeds
(Requires PE Form 66-026 – Application and Permit to Move and Use Live Plant Pests or Insects or Noxious Weeds)

1. For *intrastate* movement or where the USDA does not require a permit for *interstate* movement.
2. Permittee must have CA address and have authority to represent business, etc. (not issued to university or college students).
3. State rated/noxious weed: Mature plants, seeds, or other parts capable of propagation are within the definition of a "noxious weed" under regulations pursuant to the Plant Protection Act (see PQM).
4. Plant pest: pathogens (bacteria, fungi, virus, or nematodes) or insects (rarely animals).

Special note on insects:

Section 3558 of the California Code of Regulations pertains to insects that may be imported or shipped within California without a permit. Insects exempted by this regulation or that have been previously approved for release as a biocontrol agent in California, do not need a permit. All other insects require a permit when intentionally moved. Spiders are not insects or considered a plant pest and no permit is required for them.

5. The insect or plant pest movement must be intentional and not incidental and from one property to at least another (e.g. A plant has a common virus and a light infestation of cotton aphid and the owner is moving the plant from one county to another because they are moving – no permit required. A researcher studying host, vector, and pathogen relationships is moving a plant that was intentionally infected with a common virus and has a light infestation of cotton aphid, the vector, from a greenhouse on campus to a research field plot – permit is required. A person intentionally cultures *Phytophthora infestans* from a plant on their property – no permit required; and wants to deliver the culture to a plant pathologist friend – permit required.

C. Approved Laboratories to Receive Quarantine Material
Facilities are inspected and put under a compliance agreement to receive quarantined commodities, generally for analytical processing.

D. Cotton
Primarily non-approved cotton varieties to be planted in the San Joaquin Valley Quality Cotton District.

For additional information go to:
http://www.cdfa.ca.gov/phpps/permitsandregs.html

II. Federal Permits (generally for interstate or international movement CDFA recommends approval, approval with modifications or denial).

A. Live Plant Pests or Noxious Weeds (Requires PPQ Form 526 – Application and Permit to Move Live Plant Pests or Noxious Weeds).

1. For *interstate* movement into or from California or foreign movement into California.
2. Permittee must have authority to represent business, etc. (not issued to university or college students).
3. Mature plants, seeds, or other parts capable of propagation are within the definition of a "noxious weed" under regulations pursuant to the Plant Protection Act.
4. Plant pest: pathogens (bacteria, fungi, virus, or nematodes) or insects (rarely animals). The USDA does not maintain a list of organisms that are exempt. The permittee upon applying will be informed by the USDA if the organisms are allowed or prohibited due to pest status.

B. Soil Permits
(Requires PPQ Form 525A – Application for Permit to Receiver Soil)
All soils imported from foreign countries, must be treated as a condition of entry. This also applies to some soil that is moved domestically.

C. Postentry Quarantine
(Requires PPQ Form 546 – Agreement for Postentry Quarantine/State Screening Notice)
This regulation involves the importation of specified restricted plant and plant material from international/foreign sources under a growing agreement.

D. Import Plants or Plant Products
(Requires PPQ Form 587 – Application for Permit to Import Plants or Plant Products)
This regulation involves the importation of unrestricted plants or plant material from foreign sources.

E. Import Plant or Plant Products for Experimental Purpose
(Requires PPQ Form 588 – Application for Permit to Import Plants or Plant Products for Experimental Purposes)
Importation of prohibited plants or plant material from foreign sources

For additional information concerning the above permits and to download the forms to:
http://www.cdfa.ca.gov/phpps/permitsandregs.html
or
http://www.aphis.usda.gov/ppq/permits/

F. Biotechnology – Plants, Plant parts, or Insects

The Department's authority for review is limited to compliance with quarantine regulations, use of challenge organisms that would require an additional permit (e.g. field inoculations to determine level of disease resistance) or that the genetic alteration will increase the potential for the plant becoming a weed. Unless questioning a specific document already issued, interested parties should be referred to the USDA's website.

The USDA's Biotechnology Regulatory Services (BRS) program regulates the field testing, movement, and importation of genetically engineered (GE) organisms that are known to be, or could become plant pests. BRS issues various types of permits for each of these activities. There is also a federal Compliance and Enforcement Program that inspects, audits, and oversees activities under the permit process BRS also evaluates petitions for deregulation to ensure that products being considered for removal from regulation do not pose a threat to U.S. agricultural or environmental health. For additional information go to: http://www.aphis.usda.gov/biotechnology/index.shtml

2.9 GUIDELINES FOR COLLECTING EVIDENCE AND NOTICING FOR QUARANTINE VIOLATIONS

The procedures outlined below should be used as guidelines, not strict requirements, and can be adjusted to suit the needs of each particular case, as the situation requires.

STEP 1: A QUARANTINE VIOLATION IS DETECTED

There must be a quarantine violation before administrative proceedings can be initiated. The violation may be in relation to a fruit fly quarantine project: non-safeguarded host material in a market; selling fresh backyard host material; the release of commercially grown host material prior to treatment/inspection and official release by an appropriate State, County, or Federal quarantine official. Examples of non project violations may include: moving and/or selling commodities placed on hold pending proof of ownership/origin verification; nursery stock placed off sale moved and/or sold; or companies under Compliance Agreement not holding incoming commodities for inspection and official release.

Example 1: Two hundred and ninety pounds of sugar apples (*Annona squamosa*), a quarantine item, were placed on hold at Los Angeles International Airport (LAX) due to lack of proper certification for the Caribbean Fruit Fly State Exterior Quarantine. Los Angeles County agricultural personnel placed quarantine hold tags on the container and air bill. An airline employee subsequently released the shipment to the receiver without the certification and without the knowledge of L.A. County officials. Releasing the commodity placed on hold was in direct violation of Food and Agricultural Code Section 6401.

Once the inspector identifies a quarantine violation, a Quarantine Violation Report must be completed and administrative procedures can begin.

STEP 2: GATHERING EVIDENCE

The process of gathering evidence can be done in several ways. It is crucial to gather evidence as soon as possible after the violation(s) occur. If possible, gather as much evidence before you leave the premises. The following list contains items, which constitute evidence. Inspectors are not limited to the listed items, but they provide a basis from which to begin:

- Thoroughly examine all Code sections upon which a quarantine violation is based to determine what elements must be proved to make the case
- Take photograph(s) of the commodity in violation
- Get the name, address, driver license number, birth date, phone number and title of the person(s) responsible at the time of violation (request his/her driver's license or ID card for this information)
- Interview the person responsible, or in charge at the time violation was detected
- Obtain invoices, bills of lading and any additional paperwork associated with the commodity in question
- Request originals, but if it is not possible, get a clear, legible photocopies of all associated paperwork
- Interview everyone involved with the violation: supervisor of the person(s) responsible for the violation, person who picked up the commodity, person who sent the commodity, etc.
- Keep one of the containers in which the commodity came, if more than one commodity is involved, then keep one of each container. Place your initials on the container and date of seizure for future identification
- Look at and keep some of the packing material in the containers, newspapers can possibly indicate where the item was originally packed
- If applicable, include copy of Pest and Damage Report
- If a copy machine is on the premises, make a clear, legible copy of the violator's driver's license
- Include in the violation package, the original or copies of the Quarantine Violation Report, Notice of Rejection and/or Notice of Violation, pictures, inspector/witness statements, and Compliance Agreement, if applicable
- Have each inspector involved write up their own account of the violation, including their name, title, date, time, persons who worked with them, name and address of establishment in violation, type of commodity involved, and person(s) responsible for the violation.

Inspectors must be sure to include all circumstances surrounding the violation. It is usually better to have too much information than not enough; do not include anything in your report you would not want the general public to see. Your report may be reachable either through a Public Records Act request or by subpoena. Once you have transferred your draft notes to a report, dispose of the draft to avoid the possibility of confusion and inconsistent statements.

The list of evidence gathering above will at first appear overwhelming. It will also take more time and effort to collect than inspectors are used to giving to quarantine violations. However, successful prosecution at the administrative or criminal level requires proper gathering of evidence. All the materials listed are not always necessary for administrative proceedings, but the more facts you are able to gather, the stronger your case.

Example 2: An airline employee released a container of Longans (*Dimocarpus longan*), which had been placed on hold at an airport by County agricultural officials (Non-commercial longans are a quarantine item under the Caribbean Fruit Fly Exterior Quarantine). A yellow quarantine tag had been attached to the air bill. The fruit was released on a duplicate air bill. Releasing the longans placed under hold was in violation of Food and Agricultural Code Sections 6401, 6461, and 6303.

Evidence included in the hearing package for this violation included:

- Paperwork from the first violation – Quarantine Violation reports, a letter from the county informing the airline of violations and requesting a meeting, and a response letter from the airline
- Initial Quarantine Violation for longans
- Notice of Rejection
- Second Quarantine Violation for releasing longans
- Photocopy of original airway bill
- Photocopy of duplicate airway bill with Quarantine Notice attached

The physical evidence gathered for the case should be kept in one location, preferably in a locked case or cabinet. The labeled evidence should not be mixed with evidence from other cases. A chain of custody***** should be established for all physical evidence.

(*a **chain of custody** is a "roadmap" that shows how evidence was collected, analyzed and preserved in order to be presented as evidence in court.)

STEP 3: INTERVIEWING SUSPECTS

Each interview will be unique; however, the basic questions you ask will be the same from one interview to the next. It is best to approach the interviewee with a calm, relaxed, nonjudgmental attitude. You want to collect the facts in a clear

and concise manner. If you approach the suspect/interviewee in a hostile and/or condescending manner, you will more than likely get the same attitude in return, as well as no answers to your questions. Remember that you are perceived as an authority figure, and the interviewee, possibly fearing for his/her job, may at the very least be intimidated by you. Respect earns respect and keeping this in mind during your interview will make it much more successful.

The basic questions you need to ask are: who, what, when, where, why and how? Ask your questions in an open-ended way, not so a simple "yes" or "no" answer is all that is required from the respondent.

1. WHO

1.1 Who purchased the commodity?

1.2 Who committed the violation?

1.3 Who was responsible at the time of the violation?

1.4 Who signed for the commodity?

1.5 Who picked up the commodity?

1.6 Who shipped the commodity?

2. WHAT

2.1 What commodity was involved (common and scientific name)?

2.2 What was the commodity purchase price?

2.3 What happened (series of events from beginning to end)?

2.4 What is the origin of the commodity?

2.5 What is the usual procedure for handling the commodity?

2.6 What safeguards are in place to prevent improper release?

3. WHEN

3.1 When did the commodity arrive on the premises?

3.2 When did the violation occur?

3.3 When was the violation discovered?

3.4 When did the suspect realize the violation had occurred?

4. WHERE

4.1 Where did the commodity come from?

4.2 Where was the commodity secured?

4.3 Where did the commodity go when released?

4.4 Where was the commodity discovered?

4.5 Where was the commodity destined?

4.6 Where did the violation occur?

5. WHY

5.1 Why the commodity was purchased?

5.2 Why did the violation occur?

5.3 Why wasn't the commodity released?

5.4 Why wasn't the proper paperwork with the commodity?

5.5 Why would a commodity be released when placed on hold?

6. HOW

6.1 How long has the interviewee worked at his/her position?

6.2 How long has the commodity been on premises?

6.3 How do you know if the commodity can be released or not?

6.4 How does an employee know if a commodity needs to be held for inspection?

Some people are not going to talk with you; there isn't anything you can do about it. You should not use the threat of legal action against a person to convince them to talk with you. Most people will ask what is going to happen to them as a result of the violation. You should explain that the decision does not rest with you but with your superiors. Let them know they will hear from the county or appropriate agency in a letter with instructions regarding the violation(s).

Complete an investigative report, filling in as much information as possible. This report gives you many of the questions you need answered.

STEP 4: ADMINISTRATIVE HEARING PAPERWORK

Each county should check with its legal counsel/advocate for the proper and legal way in which to deal with quarantine violators. The following descriptions have been adapted from a from materials of the Los Angeles County Agricultural Commissioner Office memorandum entitled "General Plan for Levying Civil Penalties on Quarantine Violators."

A county administrative hearing is not as formal as a civil or criminal hearing, but the process should be treated with the same respect. The advocate, witnesses for the county, and everyone intending to represent the county should be on time. Tardiness is unprofessional, and a tardy key witness could unnecessarily cause a delay or cancellation of the proceedings. If your witness wears a uniform on duty, s/he should wear a clean, well-kept uniform to the hearing. Non-uniformed personnel should also look professional. Worn tennis shoes, worn or ripped jeans, t-shirts, etc., are not professional attire. Instruct witnesses to speak clearly and loudly enough for everyone in the room to hear. The violator will be given the opportunity to question county witnesses. The violator should be treated with the same respect and courtesy as the county advocate. Keep in mind the violator is there to protect his/her business and/or self interests; s/he may be hostile. Witnesses should remain calm and in control under questioning.

Once a quarantine violation has been detected and sufficient evidence has been gathered, both a "Notice of Proposed Action, Grounds Therefore, and Opportunity to be Heard" and "Order and Stipulation" forms should be completed and sent by certified mail to the violator. Make sure to keep the return receipt and make copies of the letters, the certified mail certificate and envelope before mailing, and place them in the case file. The violator has twenty (20) days in which to respond by returning the "Order and Stipulation" form. Return of the "Order and Stipulation" form leads to one of three routes of action:

Route 1:
The violator returns the "Order and Stipulation" with payment of the designated fine. The violator agrees to pay the fine and does not contest the violation. Once the fine is paid the case should be considered resolved. There will be no appeal to the Secretary because the violator waived his/her appeal rights by signing the "Order and Stipulation" form.

Route 2:
The violator returns the "Order and Stipulation" and requests a hearing. If the violator requests a hearing, the county sets up a hearing date and sends a "Notice of Hearing" to the violator. The "Notice of Hearing" provides the violator with a date, time, and place of hearing, as well as some instructions as to how the hearing will be conducted. The violator has the right to review the evidence against him/her prior to the hearing at the office of the County Agricultural Commissioner. At the hearing the violator has the right to again review the evidence against him/her and to present evidence on his/her behalf. Follow the hearing procedure listed in CDFA, Interior Pest Exclusion Citation Manual.

Once the hearing is concluded, the hearing officer will have one to three weeks to make a decision. A "Notice of Decision, Order, and Right to Appeal Following the Commissioner's Hearing," is sent to the violator. The violator has ten (10) days from the receipt of the decision to file an appeal with the Secretary of Food and Agriculture (based on the date of receipt taken from the returned certified mail certificate).

- If the violator does not choose to appeal the decision, it will become effective twenty (20) days after the date of the decision notice, in which case the violator must follow the order of the judge.
- If the violator chooses to appeal the decision, s/he must file a written appeal with the Secretary of Food and Agriculture in Sacramento within ten (10) days of receipt of the Decision Notice. These instructions are printed on page 2 of the Decision Notice. A State Appeal Director is appointed by the Secretary to review the hearing materials, and the arguments provided by the violator. The State Appeals Director receives a copy of the case filed against the violator, copy of all evidence presented at the hearing, and a copy of the tape made of the hearing. This material is reviewed and the State Appeal Director has forty-five (45) days to make his/her decision. S/he can make one of three decisions:

Sustain: agree with the Hearing Officer's original decision,
Modify: make changes in the original decision, such as reduce the amount of the fine, or
Reverse: disagree with the original decision and overturn the decision.

The county is notified of the State Appeals Director's decision and receives a copy of the decision. The appellant (= violator) also receives a copy of the decision. If the appellant still does not agree with the findings, s/he can then file an additional appeal with the county judicial system.

Route 3:
The violator requests a hearing, but s/he, or an authorized representative, fails to appear. In this case, the judge submits a written decision within ten (10) days of the hearing date levying the original fine.

If the fine is not paid, the commissioner has several options to obtain payment, including the "Demand for Payment Letter." If the county's business division cannot collect the fine due, county collections will take over to collect the funds owed. County collections will usually pursue fines equal to or greater than $100.00; they will also keep half of the money collected.

It is important that on the day or week before the hearing, you do the following; call your witnesses to remind them of the upcoming hearing; make sure your exhibits have been copied; know where your physical evidence is located; know the questions you intend to ask; and prepare your closing statement.

STEP 5: ORGANIZING FOR THE HEARING

i. Once the violation occurs, the file should be opened for the case. Use the method, which works best for you, such as, identifying the file by violator name, corporate name, etc. Place all paperwork that pertains to the case in the same file; this should prevent loss of documentation. As an extra precaution you may want to establish a second working file. The working file may be taken from the premises, while the original must remain safely in the office.

ii. The physical evidence gathered for the case should be kept in one location, preferably in a locked case or cabinet. The labeled evidence should not be mixed with evidence from other cases. The evidence should have the person's initials and date on it and you should know who collected the evidence.

iii. Outline the sections of the Food and Agricultural Code violated. Review Division 4 of the Code, as there may be more violations than the initial section quoted.

iv. Complete a list of the witnesses necessary to testify at the hearing, giving their name, address and phone number.

v. For example: In the airline case listed under Step 2, Inspector X, Inspector Y and Deputy Agricultural Commissioner Z are listed as witnesses for the county. Mr. A., Service Manager, and Ms. B, Service Representative, are listed as witnesses for the airline. Inspector X wrote the violations, which began the administrative hearing process. Inspector Y and Deputy Agricultural Commissioner Z were present at the airline's first administrative hearing for similar violations in 20xx. Y and Z would testify to the airline's violation history, and the steps the airline agreed to in order to prevent future violations. Mr. A and Ms. B were the persons responsible at the time the longans were released without permission.

vi. Make a list of the questions you want to ask the witnesses. Know the answers to the questions you are going to ask. Prepare the inspectors and county witnesses for the hearing. Go over with them the questions you intend to ask. You do not have to rehearse the answers, but knowing the questions before the actual hearing will make them more at ease during the hearing. Do not tell the witness(es) what to say. You want them to tell the truth, as they know it.

vii. Decide what materials you will use as exhibits. Exhibits are the pieces of evidence you will offer to prove your case (e.g. Notice of Violation, airway bills, compliance agreements, photographs, containers, etc.) The exhibits will be submitted to the administrative law judge for the record and a copy will be given to the violator. Make copies for all parties involved: one copy for the court, one copy for yourself, and one copy for each violator.

viii. Closing: The county advocate should be prepared to sum up the case. The summation highlights the important facts in the case. It also provides the advocate with the opportunity to suggest the penalty, and future procedures for the violator to follow in order that the violation does not happen again.

For example: In the case described under Step 2, the airline was sent a letter in which the county fined the corporation $500.00 for the violation. At the hearing, the advocate suggested the $500.00 fine stand, and in addition suggested the airline modify its policy for the release of agricultural commodities.

2.10 MEMORANDUM OF UNDERSTANDING – CITATIONS AND PLANT QUARANTINE POLICIES

PARTIES
California Department of Food and Agriculture and the California Agricultural Commissioners and Sealers Association

ADMINISTRATIVE LEVY OF CIVIL PENALTIES

Pursuant to Division 4 of the Food and Agricultural Code, it is unlawful for any person to refuse to comply with any quarantine regulation established to carry out the provisions of the Code. In addition to any other applicable penalties, any person who violates any requirement of Division 4 of the Code, or any regulation adopted pursuant to the Division, may be prosecuted civilly in any appropriate court in California. In lieu of civil action, the Secretary or the County Agricultural Commissioner may levy a civil penalty not to exceed $2,500 for each violation.

The mutual objective of CDFA and the California Agricultural Commissioners and Sealers Association is the uniform, fair and equitable enforcement of all laws for which each agency

is responsible. The memorandum of understanding serves as a policy and set of guidelines for the administrative levy of civil penalties in this area.

The following guidelines categorize, by severity, violations of California Food and Agricultural Code. They are provided to promote uniformity in the assessment of penalties for quarantine and other violations. They do not preempt the need for state officials or individual counties to analyze quarantine violations on an individual basis and to levy appropriate civil penalties.

AUTHORITY

A summary of applicable authority for the administration of civil penalties can be found in the Food and Agricultural Code. For purposes of enforcement in all civil actions, the provisions of the Code shall be liberally interpreted (Food and Agricultural Code, Section 3). The due process provisions of Section 5311 must be followed.

Division 4. Authority exists under Section 5311 to levy a civil penalty up to $2,500 for any violation of any requirement of this division except as provided in Part 1, Chapter 8, Article 5, commencing with Section 5781, relating to host-free periods and districts. Those sections, which specifically provide for civil penalties are:

A. Section 5028 – Maximum civil liability of $25,000 for causing an infestation.

B. Section 5311 – In lieu of civil action, civil penalties, not exceeding $2,500, may be levied for each violation of a regulation of this division.

C. Section 5341.5 – Maximum civil liability of $1,000 for failure to obtain a required certificate of inspection.

VIOLATION CATEGORIES

The degree of "seriousness" of any offense shall be determined based on the degree of actual or potential damage, which occurred, or could have occurred, as a consequence of the violation.

Violations may be determined to be minor, moderate, or serious. This MOU defines each of these categories and gives examples for each. However, the final decision on the severity of any violation must be made on a case-by-case basis.

A. Minor Violations – Violations which are primarily procedural and result in no or minimal adverse impact on the environment, agriculture or enforcement. The appropriate penalty range is $50 to $750.

Examples of minor violations include: first time violations of a procedural nature from someone with little or no experience with quarantines, or violations of public nuisance standards.

B. Moderate Violations – Violations, which are repeated minor violations, or those which cause significant damage, undermine enforcement, or pose a reasonable possibility of harming the agricultural industry or the environment. The appropriate penalty range is $750 to $1,500.

Examples of moderate violations include: repeat minor violations or first time violations, which might have an impact on the agricultural industry or the environment.

Section 5307 Public servant's failure to report

Section 6304-6305 prohibits the importation of exotic animal without permit

Section 6925 Nursery stock movement

Section 7207 Noxious weed violations

Section 7501 Unlawful seed dissemination

C. Serious Violations – Violations, which are repeated moderate violations, those, which preclude or significantly interfere with enforcement, or those which cause major harm to the agricultural industry or the environment. The appropriate penalty range is $1,500 to $2,500. However, there may be cases where criminal and/or civil prosecution may be more appropriate. The decision as to how to proceed should be made jointly by the Secretary and the Commissioner.

Examples of serious violations include: repeated moderate violations, unauthorized certificate use, failure to hold for inspection, and deliberate circumvention of quarantine laws. These might include violations of the following sections of FAC:

Section 5208 Certificate violations

Section 5306 Refusal to comply with quarantine regulations

Section 5344-6 Failure to stop and declare commodities at a border station

Section 5349 Deliberately bypassing a border station

Section 5402 Public nuisance violations

Section 5553 Abandonment of a public nuisance

Section 5704-5 Movement under hold, compliance agreement violations

Section 5803 Nursery stock propagation violation

Section 5826 Nursery stock certificate misuse

Section 6048 Hydrilla violations

Section 6303-5 Quarantine shipment violations

Section 6321 Fruit fly host importation prohibition

Section 6401 Interstate shipment quarantine violations

Section 6721 Nursery stock license requirement

Section 6921-3 General nursery stock requirements

Section 6926-7 Nursery stock manifest requirements

Section 6970 Yielding of nursery stock permit

Section 7206-7 Harboring of noxious weeds

Section 7501 Pest seed dissemination

Section 7534 Seed certificate misuse

Link to CDFA, Interior Pest Exclusion Citation Manual.

2.11 CALIFORNIA APPROVAL FOR RELEASE OF INTRASTATE SHIPMENTS

The California Department of Food and Agriculture is establishing a program to expedite the release of certain types of agricultural products being shipped within California. This program is not to be used for interstate shipments. The program is designed to alleviate problems involving subsequent multiple inspections, due to repacking and re-labeling, after the initial destination quarantine clearance inspections have been conducted.

A shipper, under a compliance agreement, will be authorized by the local Agricultural Commissioner's Office to use a stamp or pre-printed sticker with an assigned identification number, which will be placed on the outside of each package indicating that it does not need to be held for additional inspections.

A copy of each signed compliance agreement is to be sent to Sacramento Pest Exclusion headquarters where it will be included in a master list.

COMPLIANCE AGREEMENT

The following letter format is suggested to outline the requirements for stamp usage:

COUNTY LETTERHEAD

Date:

Addressee:

To Whom It May Concern:

Attached is your compliance agreement and authorization to reproduce in facsimile form the "California Approval for Release of Intrastate Shipments" stamp. This stamp is to accompany all intrastate shipments of eligible commodities as specified on your Compliance Agreement or its attachment.

You may reproduce a facsimile copy of the attached stamp on invoices, postal meter devices and shipping labels. This reproduction is subject to my approval. The stamp must be reproduced in essentially the same format as indicated on the attached authorization and must be legible and conspicuous.

The Compliance Agreement outlines your responsibilities in order to comply with our quarantine requirements. Violation of the Compliance Agreement can result in suspension or revocation of your authorization.

If you have questions, please let us know. My staff will be glad to discuss requirements with you and review the manner in which you plan to reproduce the certificate.

Sincerely,

AGRICULTURAL COMMISSIONER

COMPLIANCE AGREEMENT

CALIFORNIA
APPROVAL FOR RELEASE
OF INTRASTATE SHIPMENTS
NO. (County # - Accession #) (e.g. Fresno 10-001)

1. Name & mailing address
2. Shipping Address
3. List Eligible Commodities and Growing Origin: (Attach Extra Pages as Needed)

The California Department of Food and Agriculture and the county agricultural commissioner hereby authorize the above establishment to make shipments of eligible commodities within and between counties of California without further holding at final destination for additional inspection.

This authorization is made subject to compliance with the following stipulations:

1. All specified commodities must meet all California quarantine requirements upon entry into the State or have their growing origin within the State.
2. The above listed company shall furnish the agricultural commissioner with a list of all commodities and their growing origins within to be shipped under this agreement and notify the agricultural commissioner of any additional commodities to be added to the list a minimum of 30 days prior to shipping date.
3. The origin or shipping location agricultural commissioner shall be responsible for determining all quarantine requirements are met before authorizing those commodities to be shipped under this compliance agreement
4. The above named establishment is authorized to reproduce and/or use the "California Approval For Release of Intrastate Shipments" stamp in the format shown on the attached sheet. The stamp may be reproduced on invoices, postal meter devices and shipping labels and must be legible and conspicuous. The agricultural commissioner must approve the format prior to first use.
5. The "California Approval For Release Of
6. Intrastate Shipments" stamp authorized by the Agricultural Commissioner should be on each shipping package or carton.
7. This stamp does not preclude inspection, sampling and/or testing at the discretion of the originating agricultural commissioner or destination agricultural commissioner, and rejection if required as a consequence of the inspection.
8. A company representative shall be designated responsible for correct and proper usage of the "California Approval For Release . . ." stamp.
9. The company shall maintain a record of all shipments to California receivers and upon request, make such records available to officials of the California Department of Food and Agriculture or the county agricultural commissioner's office. Records shall include the name and quantity of each commodity shipped, growing origin, date of shipment, and name of consignee.
10. The company shall comply with all other requirements the agricultural commissioner deems necessary to assure compliance with quarantine regulations.

Noncompliance with the requirements stated above may result in suspension or revocation of this compliance agreement and surrender of your stamps. Violation of the compliance agreement could also result in fines or civil penalties.

The agricultural commissioner may invoke a service charge for monitoring compliance with the agreement and certification.

This agreement shall remain in force until revoked by either the California Department of Food and Agriculture or the County Agricultural Commissioner. Revisions may be made upon agreement of both signatories as necessary to include, delete, or modify requirements.

_____

10. Name & title of company official (Type or Print)

_____ _____

11. Signature 12. Date

_____

13. Agricultural Commissioner’s Signature

_____

14. County 15. Date

COUNTY LETTERHEAD

CALIFORNIA
APPROVAL FOR RELEASE
OF INTRASTATE SHIPMENTS STAMP

1. Company name
2. Shipping Address and mailing address

This authorization is granted to use the "California Approval For Release Of Intrastate Shipments" stamp in accordance with provisions of the attached Compliance Agreement. Use is limited to those eligible commodities specified and is subject to suspension or revocation for failure to follow the terms of the Agreement. The Agreement shall remain in force until revoked by either the California Department of Agriculture or the Agricultural Commissioner and so long as the ownership and management of the firm remains unchanged.

This form may be reproduced as a stamp or a preprinted sticker on each package in the following format to accompany intrastate shipments of the specified commodities. The certificate number should be the county number followed by the accession number.

Signed_____
Agricultural Commissioner's Signature

Effective Date_____

CALIFORNIA

APPROVAL FOR RELEASE OF INTRASTATE SHIPMENTS

NO.:_____

This shipment has passed quarantine inspection upon entry into California or at the shipping origin within California and meets all California quarantine requirements.

THIS SHIPMENT NEED NOT BE HELD FOR INSPECTION IN CALIFORNIA

Issued by:_____
and California Department of Food and Agriculture
1220 N Street Sacramento, CA 95814

LINKS TO LETTERS/COMPLIANCE AGREEMENT

Stamp usage letter (PDF or MS Word)

Compliance Agreement (PDF or MS Word)

Shipment stamp letter (PDF or MS Word)

SECTION III: INSPECTION PROCEDURES AND POLICIES

3.1 INTRODUCTION

Commodities are the basis of trade. It is the tendency of pests/diseases to associate with commodities as hitchhikers. Agricultural commodities are inspected to ensure that shipped commodities are free from unwanted pests and eligible for trade.

The “Terminal Inspection Act” of 1915, amended in 1936, allows states to inspect plants and plant products that are being shipped into their territories. The CDFA’s Pest Exclusion Program enforces state exterior and interior quarantines. The Program also enforces federal domestic, foreign, and territorial quarantines, and county restrictions. At air and maritime ports, agricultural officials from federal, state, and/or county inspect arriving aircraft, vessels, luggage and cargo following procedures outlined in a Memorandum of Understanding (MOU) between CDFA and the County Agricultural Commissioners. Shipments that are found to be in violation of quarantines and/or the Food and Agricultural Code are rejected, treated and released or destroyed.

Rapid transportation systems had made expediency be the norm. Agricultural commodities such as cut flowers and fruits, shipped from other states or countries that may be infested with exotic pests, can arrive fresh in California within hours. Such commodities are subject to agricultural quarantines. In order for the quarantine to be effective, the commodity must be held for agricultural inspection. A cooperative working relationship exists among federal (USDA), state (CDFA), and counties (CAC), working separate, complimentary, or shared areas of responsibility. Generally, USDA focuses on foreign pests at international ports of entry, and foreign markets, while CDFA and CAC are more involved in interstate and intrastate exclusion activities/issues.

The CDFA’s pest exclusion and CAC network currently enforces 26 state exterior quarantines, 16 state interior quarantines, 23 federal domestic quarantines, as well as 8 county ordinances.

The CDFA Pest Exclusion Program is divided into Interior, Exterior, and Nursery/Seed Services Programs. The Interior Pest Exclusion Program enforces federal, foreign, and domestic plant pest quarantines as well as California state exterior and interior quarantines; and the county restrictions and ordinances. Exterior exclusion consists of 16 state border stations located at major highway points of entry throughout the state and inspect private and commercial

vehicles. The Nursery and Seeds Services Program ensures high quality of planting material and fiber.

3.2 QUARANTINE PEST RATING SYSTEM

I. GENERAL PRINCIPLES

Section 403 of the California Food and Agricultural Code mandates that, "The department shall prevent the introduction and spread of injurious insect or animal pests, plant diseases, and noxious weeds." This statutory duty requires a pest policy that recognized that organisms vary as to their potential and actual harm to California's agriculture and environment. Overall pest significance is the basis for determining what pest prevention activities are appropriate, at what level, and when and where those activities should be conducted.

1. Pest ratings are intended as aids to inform county agricultural commissioners and other interested persons as to a particular pest's environmental, agricultural and biological significance, as well as its importance to the general public, and the action recommended by the Department to deal with the pest.
2. Each pest rating represents the Departments view of the statewide importance of the pest to the agricultural, horticultural, forestry, and public health interests of California. Local conditions may dictate more stringent action against the same pest in individual counties at the discretion of the county agricultural commissioner.
3. It is the Department's policy to use the "Action Oriented Rating System." Pest ratings represent the Department's policy governing what action is to be taken consistent with existing statues. This include authority for:
   a. Promulgation of quarantine, eradication, control, standards of cleanliness, and other regulations
   b. Holding and inspection, establishing host-free, weed-free, and special pest control districts
   c. Other regulatory activities

II. ACTION ORIENTED RATING SYSTEM DEFINITIONS

"A" An organism of known economic importance subject to state (or commissioner when acting as a state agent) enforced action involving: eradication, quarantine regulation, containment, rejection, or other holding action.

"B" An organism of known economic importance subject to: eradication, containment, control or other holding action at the discretion of the individual county agricultural commissioner.
Or
An organism of known economic importance, subject to state endorsed holding action, and eradication only when found in a nursery.

"C" An organism subject to no state enforced action outside of nurseries except to retard spread. Regulations are at the discretion of the county agricultural commissioner.
Or
An organism subject to no state enforced action except to provide for pest cleanliness in nurseries.

"Q" An organism or disorder requiring temporary "A" action pending determination of a permanent rating. The organism is suspected to be of economic importance but its status is uncertain because of incomplete identification or inadequate information.

In the case of an established infestation, at the discretion of the Plant Health and Pest Prevention Services Director, the department may conduct surveys and may convene the Division's Pest Study Team to determine a permanent rating.

"D" No action (parasites, predators, and organisms of little or no economic importance).

III. PROCEDURE FOR ESTABLISHING NEW RATINGS

1. A specimen/sample is received by CDFA's Plant Pest Diagnostic Laboratory and an unrated organism is identified. The identifier, because of incomplete identification or insufficient information, may assign a "Q" rating if the organism is believed to be of economic importance, documenting the reason(s) for the rating.
2. If the organism is of no economic importance or beneficial, the identifier may assign a "D" rating. No further action is required.
3. To assign a permanent "A", "B", or "C" pest rating, the identifier presents supporting documentations to the appropriate primary state professional, and they reach an agreement on a proposed rating.
4. The Branch Chief of Plant Pest Diagnostic Laboratory is then notified in writing, by the primary state professional of the proposed rating and reasons why the rating was selected.
5. The Branch Chief of Plant Pest Diagnostic Laboratory notifies the Assistant Director of Plant Health and Pest Prevention Services and the Division's Branch Chiefs of the proposed "A", "B", or "C" rating and the reasons supporting the proposed rating. If there are no valid

objections within two weeks, the Branch Chief of Plant Pest Diagnostic Laboratory will assume concurrence and notify County Agricultural Commissioners of the proposed rating. The rating is established 30 days later if no adverse comments are received and there is no request for a formal meeting of the appropriate Division Pest Study Team.

6. Other state agencies, such as Fish and Game, Health and Forestry, will be consulted regarding their position on proposed ratings for those organisms involving their regulatory or public responsibilities.
7. If any adverse comment was received, the identifier and appropriate primary state professional will refer the comments to the Division's Pest Study Team and/or the Assistant Director for resolution, if necessary. A request for a formal meeting of the Division Pest Study Team is to be accompanied by the reasons/supporting data for the request.
8. The Division Pest Study Team, if convened, will recommend a pest rating to the Assistant Director, Plant Health and Pest Prevention Services.
9. The Branch Chief of Plant Pest Diagnostic Laboratory will issue the "Important Notices" of the assigned rating.
10. The "Q"-rating of all pests known to be established in California are reviewed every March by the primary state professions to determine if the "Q" status should be continued or if a permanent rating should be proposed. A written report on each review will be prepared and sent to the Branch Chiefs and the Assistant Director. Any proposed permanent rating will be handled as outlined in steps 4 through 8.
11. If the Director determines that an unrated pest poses a major threat to California's agriculture or environment, the Director's Statement of Findings regarding that pest supercedes this document.

IV. PROCEDURE FOR CHANGING ESTABLISHED RATINGS

1. Any interested person may recommend a change in an established rating by submitting a request to the Assistant Director, Plant Health and Pest Prevention Services. The Assistant Director will refer the request to the appropriate primary state professional.
2. To change an "A", "B", "C", or "D" pest rating, the person proposing the change presents supporting documentation to the appropriate primary state professional, and they reach agreement on the proposed rating change.
3. The Branch Chief of Plant Pest Diagnostic Laboratory is then notified in writing by the primary state professional, of the proposed rating change and reasons why new rating was selected.
4. The Branch Chief of Plant Pest Diagnostic Laboratory notifies the Assistant Director of Plant Health and Pest Prevention Services, and Division Branch Chiefs of the proposed rating change and reasons for it. If there are no valid objections within two weeks, the Branch Chief of Plant Pest Diagnostic Laboratory will assume concurrence and notify County Agricultural Commissioners of the rating change. The new rating is established 30 days later if no adverse comments are received and there is no request for a formal meeting of the appropriate Division Pest Study Team.
5. Other state agencies, such as Fish and Game, Health, and Forestry, will be consulted regarding their position on proposed rating changes for those organisms involving their regulatory or public responsibilities.
6. Adverse comments, if any, will be reviewed by the appropriate primary state professional. If necessary, the comments will be referred to the Division Pest Study Team and/or the Assistant Director for resolution. A request for a formal meeting of the Division Pest Study Team is to be accompanied by the reasons/supporting data for the request.
7. The Division Pest Study Team, if convened, will recommend a pest rating to the Assistant Director, Division of Plant Health and Pest Prevention Services.
8. The Branch Chief of Plant Pest Diagnostic Laboratory will issue the "Important Notice" of the new assigned rating.

V. CDFA PLANT PEST RATINGS

- Invertebrates
- Pathogens/Diseases
  - i. Bacteria
  - ii. Fungi
  - iii. Nematodes
  - iv. Viruses, virus-complexes
- Vertebrates
- Weeds
  - i. Noxious Weeds
  - ii. Weed Policy

RELATED LINKS
Federal Noxious Weed List, USDA
Integrated Pest Control Branch, CDFA
Invasive Species Search

3.3 PHYTOSANITARY CERTIFICATIONS

The United States is a member of the International Plant Protection Convention (IPPC). This convention was designed to provide international cooperation in preventing the spread of plant pests and diseases across international boundaries. The convention prescribes a standard form for plant protection/phytosanitary certificates. Each contracting government also agrees, to the best of its ability, to make provision for the issuance of certificates only under conditions that make such certificates dependable documents. In a nutshell, the goal of this program is to insure that the pest cleanliness of the commodity meets the minimum standards of the importing country.

It is incumbent on the certifying inspector to ascertain the plant quarantine import requirements of the destination country for each shipment. This will include examination of the import permits, if available. Before issuing a phytosanitary certificate, s/he must determine that the shipment qualifies, and that it conforms to the wordings of the certificate.

PHYTOSANITARY REQUIREMENTS

Inspection for export certification is made to determine whether plants or unprocessed plant products intended for export comply with the phytosanitary import requirements of the destination country. Inspectors conducting the inspection should be fully informed as to the requirements of the destination country by reference in EXCERPT* of that country's plant quarantine requirements or other available official information. Where import permits are required, the specific conditions of entry are usually stated on the permit.
For more detailed information please refer to the "Export Certification Manual" in your office.

Chronological or electronic records should be maintained for each certificate at the county office.

Referring to Sections 5201 through 5208 of the California Food and Agriculture Code, no fees shall be charged for a certification required by law. However, each county usually establishes a schedule, and charges for any service, work, travel, overtime or related service.

*EXCERPT, is the acronym for Export Certification Project, is a computerized database containing the Phytosanitary certification requirements of many countries. EXCERPT is available online to subscribers or via dial-up modem. For more information about EXCERPT call (764) 494-4967.

CERTIFICATION OF SEEDS

FIELD INSPECTION PROGRAM
Persons or firms desiring phytosanitary certification of seed to countries or states requiring field inspections during the growing crop should apply for the inspection through the California Department of Food and Agriculture, Pest Exclusion office. Upon acceptance, Pest Exclusion will issue a serial number to each application, and send copies of the application to the applicant and to the appropriate County Agricultural Commissioner's office.

Pest Exclusion staff will review the phytosanitary requirements of the receiving company. Applications for phytosanitary field inspections of seed may be denied if the receiving country has officially published any requirements for the commodity.

Applicant Responsibility
Applicant must comply with the following conditions when submitting applications:

1. Communication must be maintained with the County Agricultural Commissioner prior to submitting the application. Applicant shall work closely with the commissioner and with the grower regarding harvesting, seed separation, and pesticides. The grower or the seed company representative shall contact the commissioner and schedule dates for inspection. A field cannot be inspected if it is being irrigated, or if entry is prohibited because of pesticide treatments.
2. Application must be submitted to the Pest Exclusion office prior to or at time of planting. Failure to submit application on time may result in rejection of application. Plants may be too mature to inspect for diseases of concern or commissioner's office maybe unable to adjust workload to inspect on short notice.
3. Applicants should submit original and two copies of application for "Phytosanitary Field Inspection of Seed" Form 66-085 to:

   Department of Food and Agriculture
   PEST EXCLUSION BRANCH
   1220 N Street, Suite A-372
   SACRAMENTO, CA 95814

   It is recommended that the seed company send a copy of the application to their local representative.
4. When required by the county agricultural commissioner, the applicant must supply a satisfactory map locating the seed field, either on or with the application.

5. All problems relating to field inspection, including late applications, failure to notify county commissioners of time to inspect, inability of inspector to enter field due to irrigation or pesticides, etc., must be resolved by communications between the applicant and the county commissioners.
6. Pest Exclusion lists plant pathogens of phytosanitary concern based on the best information available from official agencies. The seed company should check this list to determine that includes all diseases of concern to their customer. If there are diseases of concern not on the list, the seed company must submit a copy of the import permit or regulations from the importing country verifying that inspection for or freedom from the disease is an official request from the regulatory agency of the importing country.
7. Applicants requesting field inspection for new disease to meet foreign seed company's requirement should confirm with the foreign regulatory agency prior to submitting inspection request to the state.
8. Upon receiving the copy of application, the applicant shall identify each field or plot to be inspected with a suitable stake or placard bearing the serial number assigned by Pest Exclusion. This identification shall be maintained during the growing season.

Results of Field Inspection
The record of field inspection will indicate all phytosanitary significant pathogens found that are listed by Pest Exclusion.

INSPECTIONS FOR SEED MOVEMENT

Responsibility of the Applicant
The assigned serial number must be maintained on all containers during harvest, processing, and after placement into bags or containers.

Prior to moving any lot of seed for processing and/or from one location to another, including interstate, the applicant shall immediately notify the agricultural commissioner of the county from which the seed is to be moved.

Responsibility of the County/State
To maintain identity of seed when it is to be moved from one county to another, the agricultural commissioner at origin shall send copies of the record of field inspection to the consignor, consignee, and the agricultural commissioner at destination.

Seed bearing assigned serial numbers and meeting the requirements of the destination county are eligible for export certification by Plant Quarantine Officers.

CERTIFICATION OF SEEDS TO OTHER STATES OR COUNTRIES:

If requested, Form 66-088 "Inspection Report" may be issued as an addition to either the Federal or State Phytosanitary Certificate.

Bean Seed to Idaho:
Issue Form 66-095 "Bean Field Inspection Report". One copy must accompany the shipment and one copy is to be given to the seed company.

Identification Numbers Assigned to California Counties
The county identification number will be used when assigning a serial number to the Phytosanitary Field Inspection application. The first two digits of the serial number will identify the county of origin. The next four digits will be the production year. The remaining digits will identify the order in which the number were assigned for that county that year.
Example: 012004001

County	Number	County	Number
Alameda	01	Orange	30
Alpine	02	Placer	31
Amador	03	Plumas	32
Butte	04	Riverside	33
Calaveras	05	Sacramento	34
Colusa	06	San Benito	35
Contra Costa	07	San Bernardino	36
Del Norte	08	San Diego	37
El Dorado	09	San Francisco	38
Fresno	10	San Joaquin	39
Glenn	11	San Luis Obispo	40
Humboldt	12	San Mateo	41
Imperial	13	Santa Barbara	42
Inyo	14	Santa Clara	43
Kern	15	Santa Cruz	44
Kings	16	Shasta	45
Lake	17	Sierra	46
Lassen	18	Siskiyou	47
Los Angeles	19	Solano	48
Madera	20	Sonoma	49
Marin	21	Stanislaus	50
Mariposa	22	Sutter	51
Mendocino	23	Tehama	52
Merced	24	Trinity	53
Modoc	25	Tulare	54
Mono	26	Tuolumne	55
Monterey	27	Ventura	56
Napa	28	Yolo	57
Nevada	29	Yuba	58

GUIDELINES FOR PHYTOSANITARY FIELD INSPECTIONS OF SEED

Guidelines for Phytosanitary Field Inspections of Seed are based on:

1. Scientific knowledge available
2. Professional experience
3. Official requirements of the receiving countries that have been made available to us

Food and Agricultural Code Section 5205 mandates certification meeting the requirements stated in the laws and/or official import permits of the importing country. The validity of the requirements of the importing country is based on the best judgment of the officials of the importing countries. The jurisdiction for changing these requirements lies with the importing country even though some of these requirements, in effect, place an embargo on California grown seed.

The finding of one or more diseases, listed below under each crop, does not prevent the writing of a valid phytosanitary certificate provided the seed is going to a country that does not restrict the specific disease(s). For example: only one country expresses concern over *Diaporthe phaseolorum* on mother plants in pepper seed fields.

To accommodate seed companies who list "all countries" for "the state or country of destination" thus enabling market expansion after seed has been harvested, the requirements placed on vegetable seed were compiled using: USDA Manual 353-A 'Summaries of Plant Quarantine Requirements of Foreign Countries', quarantine regulations of other states, and the official import permits that were made available to this office.

Important Note
Should a seed company receive an official import permit listing either a disease or a crop other than those listed below, it is ***the responsibility of the seed company*** to forward these documents to the following address:

California Department of Food and Agriculture
PEST EXCLUSION BRANCH
1220 N Street, Room A-372
Sacramento, CA 95814

Only the official notices of importing states or countries give this office legal authorization to expend the time and labor necessary to provide training and training aids needed by county inspectors. Applications for inspection of crops not officially requiring inspection will be returned.

Records of applications and field inspections are maintained for three years after seed has been harvested.

The ***inspection timing*** and the ***number of inspections*** suggested for each crop listed below is considered adequate. It will not be necessary to inspect more often than the recommended number of times unless an unseasonable rain occurs after routine inspections have been completed. In the event of rain the field should be reinspected ten (l0) days after the rain to confirm cleanliness.

The timing and frequency of inspections as listed is for furrow irrigated fields only.

FIELD INSPECTION POLICY AND PROCEDURES

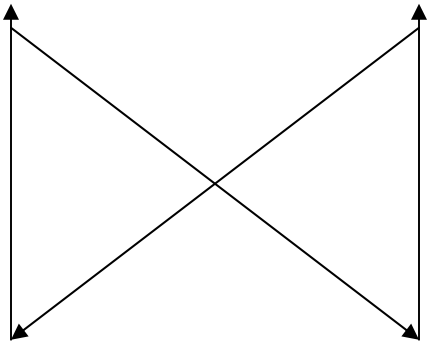
Seasonal Employees
The use of seasonal employees for field inspections is acceptable to the USDA with the following provisions:

1. Seasonal employees are college graduates or are making satisfactory progress in major areas such as agronomy, botany, plant pathology or closely related areas.
2. The seasonal employees are required to have annual training prior to performing field inspections. Training should involve both classroom and field instruction by a qualified plant pathologist. If a qualified plant pathologist is not available with the county staff, please contact CDFA Pest Exclusion or Pest Detection District Pathologist. Seasonal staff should not be used until they demonstrate they can competently identify symptoms and diseases caused by significant quarantine pathogens in the field.
3. Field identifications need to be confirmed by a qualified plant pathology laboratory. Normally, the California Department of Food and Agriculture's Plant Pathology Laboratory in the Plant Pest Diagnostic Center in Sacramento will do the confirmation. Properly staffed and equipped county or Federal laboratories may also be used.
4. Seasonal employees must work under the supervision of a full-time, permanent county biologist.
5. Regular training in the detection of target pathogens is essential to maintain the quality of inspection regardless of the field pattern used. Annual employee refresher classes are encouraged. A pre-season class for seasonal employees is mandatory under USDA standards.

Field Inspection Walking Patterns

1. **Cereal Crops**

The pattern for walking cereal crops is similar to the letter X. Start in one corner of the field and inspect plants along one edge of the field. At the end of the field, diagonally cross through the center to the opposite corner. Then walk the edge of the field (opposite from where you started) to the corner. Finally, diagonally cross the field again to finish at the corner where you began.



Begin here

Walking through the two edges of the field increases the probability of finding ergot along those edges that are adjacent to uncontrolled wild grasses and volunteer cereals during the third field inspection.

2. Other Crops

A statistical method is used to walk fields. The accuracy of this method is based on the number of plants observed compared to the number of plants in the field. This method provides a minimum of 95% confidence in detecting an infection of 0.1%. In most crops, the confidence level will be greater than 95%.

Statistical Method of Field Walking for non Cereal Crops

To determine how to conduct field inspections on crops other than cereals, inspectors must first know the number of acres in the field. This information is found on the application for phytosanitary field inspection of seed. Then, the inspector needs to determine the minimum number of passes required for each field using the chart below.

1. Select the minimum number of field passes from the table below based on the number of acres in the field. For example, a 30-acre field calls for a minimum of 17 passes according to our table.
2. Estimate the length of the field borderline. Figures should be close, but they do not need to be exact. (For this example, use 1,100 feet.)
3. Equally space the passes along a field borderline (1,100 feet/17 passes = 65 feet per pass.)
4. Walk the passes including the field borders at the end of the pass. If the last scheduled pass does not reach to the field border, continue to walk additional passes. When walking at the edge of the field, the inspector should walk approximately 10 feet inside the field to maximize the number of plants examined.

Minimum number of field passes for each filed.

Acres in Field	Minimum # of Field Passes
0-1.0	6
1.1-5.0	9
5.1-10.0	11
10.1-20.0	13
20.1-50.0	17
50.1-100.0	20
100.1-200.0	24
200.1-500.0	30
500.1-1000.0	36
1000.0+	42

CROPS, DISEASES, AND INSPECTIONS

ALFALFA

Two Inspections
1st – late winter or early spring.
2nd – late spring or early summer.
Walk every eighth row.

Inspect for:

Alfalfa dwarf (Pierce's disease)
Alfalfa mosaic virus
Aphelenchoides spp. bud and leaf nematodes
Ascochyta imperfecta - black stem
Botryotinia ciborioides - iris crown root
Cercospora medicaginis - black leaf spot
Corynebacterium insidiosum - bacterial wilt
Cuscuta spp. - dodder
Ditylenchus dipsaci - stem nematode
Tomato ringspot virus
Typhula trifolii - clover snow mold
Urophlyctis alfalfae - wart
Verticillium albo-atrum - verticillium wilt
Xanthomonas campestris p.v. alfalfae - bacterial leaf spot

BARLEY
Two Inspections.
1st - tillering to preboot stage.
2nd - Head emergence into full bloom
Suggested walking pattern same as wheat

Inspect For:
Anguina tritici - wheat gall nematode
Barley stripe mosaic virus
Cephalosporium leaf stripe
Claviceps purpurea - covered smut
Corynebacterium tritici - spike blight
Fusarium spp. - scab or head blight
Gaeumannomyces graminis var. tritici - take-all
Helminthosporium gramineum (*Drechslera graminea*) -barley stripe
Helminthosporium sativum (*Cochliobolus sativus*) -spot blotch
Helminthosporium teres (Drechslera teres) – net blotch
Heterodera avenae - oat cyst nematode
Hymenula cerealis (*Cephalosporium gramineum*)
or black chaff
Pseudomonas atrofaciens - basal glume rot
Pseudomonas syringae - bacterial leaf blight
Punctodera punclata - grass cyst nematode
Rhynchosporium secalis - scald
Septoria spp. - leaf and glume blotch
Ustilago nigra (*U. avenae*) -semi-loose smut
Ustilago tritici (*Ustilago nuda*) -true loose smut
Xanthomonas translucens - bacterial leaf strip

BEAN, Common, Adzuki, Mung
Three Inspections
1st - seedling - walk every eighth row (critical for halo blight).
2nd - mature vine with green pods - walk every eighth row.
3rd - windrow - walk every other windrow (for Idaho and Washington only).

Inspect for:
Bean Common Mosaic Virus
Bean southern mosaic virus
Colletotrichum lindemuthianum - anthracnose
Corynebacterium flaccumfaciens pv. flaccumfaciens - wilt
H. goettingiana - pea cyst nematode
Heterodera glycines - soybean cyst nematode
Pea enation mosaic virus
Pea seed-borne mosaic virus
Pseudomonas syringae pv. phaseolicola - halo blight
Pseudomonas syringae pv. syringae - brown-spot blight
Tobacco ringspot virus
Tomato ringspot virus
Virus diseases transmitted by seed
X. phaseoli pv. fuscans - fuscous blight
Xanthomonas campestris pv. phaseoli – common bacterial blight

BEAN, LIMA
Two Inspections
1st -Seedling-walk every eighth row (critical for halo blight).
2nd -Mature vine with green pods-walk every
eighth row.

Inspect for:
bacterial blight.
Bean western mosaic virus (= strain of bean
C. lindemuthianum - bean anthracnose
Colletotrichum dematium f. truncatum-lima bean anthracnose
common mosaic virus).
Corynebacterium flaccumfaciens pv flaccumfaciens - wilt
Elsinoe phaseoli - lima bean scab
P. s. pv. syringae - brown spot blight
Pseudomonas syringae pv. phaseolicola - halo blight
X. phaseoli pv. fuscans - fuscous blight
Xanthomonas campestris pv. phaseoli - common

BROADBEAN (Fava Bean)
Two Inspections
1st - when plants are in early pod stage - walk
every eighth row.
2nd - when pods are beginning to mature - walk
every eighth row.

Inspect for:
*vetch; broadbean
Ascochyta fabae - Ascochyta blight of pea,
Broadbean Mottle Virus - broadbean mottle
Collectotrichum villosum-anthracnose on vetch
Corynebacterium flaccumfaciens pv. flaccumfaciens-wilt of bean
Ditylenchus dipsaci - stem and bulb nematode
Orobanche spp. – broomrape
Peronospora viciae - downy mildew
Pseudomonas syringae pv. pisi-bacterial blight
Xanthomonas phaseoli-common blight of bean

Note on *D. dipsaci*, oat strain (present in California) attacks vetch in Europe. Watch for tulip root disease on oat.
* Reported on designated host (vetch or broadbean) in California.

BEETS - (Beet, Sugarbeet, Mangel, Swiss Chard)
One Inspection - in spring when plants begin to bolt-walk every sixth row.

Inspect for:
* Beet Yellows Virus - beet yellows
* *Peronospora effusa (= P. schachtii*) - downy
* *Pseudomonas syringae pv. aptata* - bacterial
* Rhizomania disease
blight
Cercospora beticola
Colletotrichum dematium f. sp. spinaceae
Corynebacterium flaccumfaciens pv. Betae-silvering disease of beet
Ditylenchus dipsaci - stem and bulb nematode
mildew
Phoma betae (= Pleospora bjorlingii)-black rot
Pseudomonas aptata
Tomato Black Ring Virus - tomato black ring, black rot
Verticillium dahliae
* Viruses in general
A genetic disorder - Family 4l yellows of sugarbeet
* In California on *Beta vulgaris*

CARROT
One inspection in bud, just beginning to flower, tops still green.

Inspect for:
Alternaria dauci - leaf blight
Alternaria porri
Alternaria radicina - (=Stemphylium radicinum) black rot, root rot
Xanthomonas campestris pv. carotae - bacterial blight

CELERY

Inspect for:
Septoria apiicola - celery late blight

CHICORY - Endive; Salsify

Inspect for:
Marsonia panattoniana - anthracnose
Ustilago cichorii - smut

CORN
Two Inspections
1st -two weeks prior to through three weeks after tassel emergence.
2nd -after pollination, when silks are dry and kernels have become fully developed and just begin to harden.
Walk around each planting and make one pass through the field at each inspection.

Inspect for:
All viruses and virus-like diseases
Cephalosporium maydis - late wilt
Claviceps gigantea - ergot, diente de caballo
Cochliobolus heterostrophus southern leaf blight
Corynebacterium nebraskense Nebraska bacterial wilt and leaf fleck
Diplodia macrospora - dry rot
Diplodia zeae (= D. maydis) - Diplodia stalk rot
Drechslera maydis (= Helminthosporium maydis,
Erwinia chrysanthemi
Erwinia stewartii (= Xanthomonas stewartii) - Stewart's disease
G. zeae - stalkrot
Giberella fujikuroi - stalkrot, pink ear
H. turcicum - northern leaf blight
Helminthosporium carbonum (= *Cochliobolus corbonum*)-Helminthosporium leaf spot
Kabatiella zeae - eyespot
Leptosphaeria sp. - leafspot
Maize Dwarf Mosaic Virus (= Sugarcane Mosaic Virus, Johnsongrass strain)-Maize dwarf mosaic
Peronosclerospora philippinensis
Peronosclerospora sorghi
Phyllosticta maydis - yellow leaf blight
Physoderma maydis - brown spot
Pseudoperonospora sorghi
Sclerophthora macrospora
Sclerophthora rayssiae var. zeae
Sclerospora maydis
Sclerospora maydis - Java downy mildew
Sclerospora philippensis-Philippine downy mildew
Sclerospora rayssiae var. zeae - brown stripe downy mildew
Sclerospora sacchari - sugarcane downy mildew
Sclerospora sorghi - sorghum downy mildew
Sclerospora spontaneum - spontaneum downy mildew
Sphacelotheca reiliana - head smut
Ustilago maydis - corn smut

COTTON
Only in Colusa and Yolo Counties
One inspection prior to end of the last complete cycle of vegetation

Inspect for:
Glomerella gosypii - cotton anthracnose
Xanthomonas campestris pv. malvacearum - bacterial blight

CRUCIFERS Cabbage, Cauliflower, Collards, Broccoli, Brussels Sprouts, Kale, Kholrabi, Mustard, Turnip)
One inspection when plants begin to bolt - walk every sixth row.

Inspect for:
* *Alternaria brassicae* - alternaria gray leaf spot
* *Alternaria brassicola alter*naria black leaf spot
* *Phoma lingam (= Leptosphaeria maculans*) black leg
**Pseudomonas syringae pv. Maculicola*-pepper spot
**Xanthomonas campestris pv. campestris* black rot
* In California on *Brassica oleracea*

CURCURBITS (Melon,Cucumber,Squash, Watermelon)
Two Inspections.
1st - during bloom and early fruit for virus
2nd - preharvest (mature fruit). Walk every sixth row for bush squash and watermelon, distance for other cucurbits; depends on density of crop.

Inspect for:
All/any significant bacteria
Acidovorax avenae subsp. citrulli - bacterial fruit blotch of watermelon.
Any/all significant viruses
Cladosporium cucumerinum
Collectotrichum lagenarium (= C.obiculare) anthracnose
Cucumber Green Mottle Virus (= Cucumber Aucuba Mosaic Virus)
Cucumber Mosaic Virus - cucumber mosaic
Dreschlera sorokiniana
Fusarium oxysporum f. sp. melonis
Fusarium oxysporum f. sp. niveum - fusarium wilt of watermelon
Muskmelon Necrotic Spot Virus
Mycosphaerella melonis (= *M. citrullina, Ditdymella bryoniae, D. melonis*) - gummy stem blight
Phoma citrullina
Physalospora rhodina - stem end rot of watermelon
Prunus Necrotic Ringspot Virus
Pseudomonas syringae pv. lachrymans - angular leaf spot
Squash Mosaic Virus (squash mosaic, muskmelon mosaic)
Watermelon Mosaic Virus (watermelon mosaic)
Xanthomonas cucurbitae - bacterial leaf spot

EGGPLANT
One Inspection at maturity of fruit - walk every sixth row.

Inspect for:
Eggplant (Brinjal) mosaic virus
Phomopsis vexans (= Diaporthe vexans) - Phomopsis blight
Potato Spindle Tuber Virus

LETTUCE
One or more (if necessary) inspections to see if a sufficient number of plants at the proper stage are infested. When plants begin to visibly bolt (i.e. stem elongation or pushing) prior to branching, walk every eighth row. If mosaic is found, estimate the percentage of mother plants infested and record this figure on the field inspection report.

Inspect for:
Lettuce mosaic virus
Pseudomonas chicorii
Septoria lactucae
Tomato spotted wilt virus
Xanthomonas campestris pv. vitians
Some countries allow for maximum of 0%, l%, or 2% infected mother plants by lettuce mosaic virus (in the seed field.

OATS
Two inspections.
1st - tillering to preboot stage.
2nd - head emergence to full bloom.

Inspect for:
Barleystripem
Drechslera victoriae (= Helminthosporium victoriae) - victoria blight

ONION (Onion, Shallot, Garlic, Leek, Chive)
One Inspection
For seed production, walk every eighth row.

Timing - About 50% in flower until green seed form, while plants are still green and vigorous.

For Bulbs - Walk every eighth row; however, if field contains many varieties planted in less than eight rows, walk every variety. Time inspections after bulbs form but while tops are still green and vigorous.

For Consumption - Inspect the bulbs. Must certify product originates in county free of smut (*Urocystis cepulae).*

SPECIAL NOTE: When submitting samples to the diagnostic laboratory, please indicate the type of inspection (i.e., seed crop, commodities for Australia, seed-bulbs for Idaho) under "REMARKS" on the Pest and Damage Record, Form 65-020.

Inspect for:
Alternaria porri - purple blotch

Botrytis alli, Botrytis spp. - grey mold neck rot
Colletotrichum circinans - smudge
Ditylenchus destructor - potato rot nematode
Ditylenchus dipsaci - onion bloat, eelworm rot
Fusarium spp.
Meloidogyne spp. - root knot nematodes
Onion yellow dwarf virus - yellow dwarf
Peronospora destructor - downy mildew
Puccinia asparagi - rust
Pyrenochaeta terrestris - pink root
Sclerotinia spp. - Sclerotinia rot
Sclerotium cepivorum - white rot
*Urocystis cepulae (=Tubrcinia cepula*e) - onion smut

PEA
Two Inspections
1st - midpod set - walk every eighth row.
2nd - when plants are in senescent stage but before plants are dry

Inspect for:
Ascochyta spp. - Ascochyta blight
Corynebacterium flaccumfaciens pv. flaccumfaciens - bean wilt
*Fusarium oxysp*orum f. sp. pisi - wilt
Orobanche spp. – broomrape
Pea Seed-Borne Mosaic Virus - pea fizzletop, pea leafrolling , mosaic, pea seed-borne mosaic
Pseudomonas syringae pv. pisi - bacterial blight

PEPPER
Conduct one inspection at fruit maturity. Walk every sixth row.

Inspect for:
Colletotrichum acutatum
Colletotrichum dematium
Corynebacterium michiganense pv. michiganense - bacterial canker, Ditylenchus dipsaci - Stem & Bulb nematode
Diaporthe phaseolorum - fruit rot
Pepper mild mottle tobamovirus *Phytophthora capsici* - Phytophthora blight Cucumber mosaic virus, Potato spindle tuber virus
Pseudomonas solonacearum - bacterial wilt
Psuedomonas pustulens (= P. syringae pv. tomato) bacterial speck
Tobacco etch virus
Tomato spotted wilt virus
Xanthomonas campestris pv. vesicatoria - bacterial spot

POTATO
One Inspection.
For consumption - Inspect just prior to harvest.

Inspect for:
Phytophthora infestans A2 strain- potato late blight A2 strain

RADISH
One Inspection. Inspect when plant flowers are first begining to open.

Inspect for:
Alternaria brassicae
Alternaria brassicola
Colletotrichum higginsianum - turnip anthracnose
Phoma lingam (=Leptosphaeria maculans) - root rot
X. campestris pv. vesicatoria - bacterial spot
Xanthomonas campestris pv. campestria
Xanthomonas campestris pv. raphani - black rot,bacterial spot

RICE
Two inspections.

Inspect for:
Alternaria padwickii - rice stackburn
Barley stripe mosaic virus
Rice hoja blanca virus
Xanthomonas campestris pv. oryzae - rice bacterial blight

SAFFLOWER
One Inspection. Inspect when plants are beginning to bloom.

Inspect for: *Cirsium arvense* (Canada thistle), *Orobanche spp.* (Broomrape)
Fusarium oxysporum f. sp. carthami
***Pseudomonas syringae* pv. *syringae* - (bacterial leaf blight)** *Puccinia carthami* - safflower rust
Septoria carthami - septoria leafspot

SORGHUM
Two Inspections.
1st - In the "boot" stage (after first three whorls but before it heads out) 2nd -"Head" or maturity stage.

Inspect for:
Colletotrichum graminicola - anthracnose
Giberella fujikuroi - stalkrot
Helminthosporium maydis (*=Cochliobolus heterostrophus, Drechslera maydis)*
Helminthosporium spp.

P. syringae - leafspot
Periconia circinata - Periconia root rot
Pseudomonas andropongoni - leaf stripe
Sclerospora philippinensis - downy mildew
Sclerospora sorghi - downy mildew
Sclerospora spontanea - downy mildew
Sclerospora spp. - downy mildew
Sphacelotheca spp. - smuts
Virus-like diseases
Xanthomonas campestris pv. holcicola - leaf streak

SOYBEAN
One Inspection. Inspect at midpod set.

Inspect for:
bacterial blight
bacterial pustule
Corynebacterium flaccumfaciens pv. flaccumfaciens - soybean bacterial wilt
Heterodera goettingiana - pea cyst nematode Soybean budblight virus
Pseudomonas syringae pv. glycinea - soybean
Soybean mosaic virus
Xanthomonas campestris pv. glycines - soybean

SPINACH
Two inspections.
1st -Before flowering and before foliage canopy completely closes over rows.
2nd -After flowering and approximately 3 weeks before seed harvest.

Inspect for:
Colletotrichum dematium f. sp. spinaceae (leafspot)
Fusarium oxysporum
Verticillium dahliae

STOCK
One Inspection. Inspect when plants are in early stage of flowering.

Inspect for:
Cercospora insulana - statice leafspot
Xanthomonas incanae - black rot

SUNFLOWER
Two Inspections.
1st - During prebud formation (for virus)
2nd - Full bloom through seed maturity stage

Inspect for;
Alternaria helianthi
Alternaria zinnia
Lasioptera murtfeldtiana - sunflower seed midge
Orobanche cernua (*O. cumana*) - broomrape
Phoma oleracea var. helianthituberosa
Phomopsis spp.
Plasmopara halstedii - downy mildew
Pseudomonas cichorii - bacterial spot
Pseudomonas helianthi (possibly *P. syringae*) -
Puccinia helanthi - rust
sclerotinia head rot
Sclerotinia sclerotiorum - sclerotinia wilt or
Seed-borne mosaic virus – sunflower Mosaic
Septoria helianthi - septoria leafspot
sunflower bacterial leafspot
Verticillium spp. - verticillium wilts
Virus diseases (any/all)

TOMATO
Two Inspections.
1st - bloom and young fruit - walk every sixth furrow
2nd - 20% to 30% fruit maturity, three to four weeks before harvest - walk every sixth furrow – be alert for spots on fruit.

Inspect for:
Arabias Mosaic Virus
Colletotrichum phomoides - anthracnose
Corynebacterium michiganense pv. michiganense -bacterial canker
Cucumber mosaic virus
Didymella lycopersici - Dicymella stem and fruit rot
Fusarium oxysporum f. sp. dlycopersici – Fusarium wilt
Pepino Mosaic Potex Virus
Phoma distructiva - Phoma rot
Potato Spindle Tuber Virus - tomato bunchy top
Pseudomonas corugata
Pseudomonas punctulans
Pseudomonas syringae pv. tomato - bacterial speck Tobacco mild green mosaic tobamovirus (Tmgmv)
Tobacco Mosaic Virus - tobacco mosaic
Tomato big-bud MLO
Tomato Black Ring Virus - tomato black ring
Tomato bushy stuntTomato Mosaic Tobamovirus (ToMV)
Tomato Ringspot Virus - tomato ringspot
Tomato Spotted Wilt Virus
Verticillium alboatrum v. dahliae - Verticillium wilt
Virus Diseases (all/any)
Xanthomonas vesicatoria - bacterial spot

VETCH
One Inspection
Inspect for diseases under broad bean when vetch is in full bloom and the oat nurse crop is headed out. Check oats for tulip root disease

Inspect for:
Barley stripe mosaic virus
Claviceps purpurea - ergot
Tilletia secalis (T. caries) - rough spored bunt

WHEAT
Three Inspections.
1st - Tillering to preboot stage.
2nd - During bloom.
3rd - When seed head is mature.

Inspect for:
Alternaria sp.
Alternaria triticina - leaf blight
Anguina tritici - wheat gall nematode
Barley stripe mosaic virus
black chaff
Claviceps purpurea - ergot
Corynebacterium sp. - bacterial mosaic
Corynebacterium tritici - spike blight
Erysiphe graminis f. sp. tritici - powdery
Fusarium nivale - snow mold
Fusarium spp.
Gaeumannomyces graminis var. tritici - take all
Helminthosporium sativum - spot blotch
Helminthosporium spp.
Heterodera avenae - oat cyst nematode
Hymenula cerealis (=Cephlosporium gramineum) Cephlosporium stripe
mildew
Neovossia indica - karnal bunt
Pseudomonas atrofaciens - basal glume rot
Pseudomonas syringae - bacterial leaf blight
Sclerophthora macrospora - crazy top
Sclerotinia sclerotiorum - sclerotinia wilt
Sclerotium rolfsii - southern blight
Selenophoma donacis - halo spot
Septoria spp.
Septoria stagonospora - glume blotch, wheat leaf
T. caries - common (rough spored) bunt
T. controversa - dwarf bunt
T. foetida - common (smooth spored) bunt
T. indica (Neovossia indica) - karnal bunt *Urocystis agropyri* - flag smut
Tilletia spp. - bunts
Urocystis tritici flag smut
Ustilago spp.
Ustilago tritici (U. nuda) - loose smut
Xanthomonas transluscens - bacterial stripe or
The suggested pattern for walking wheat fields is the Roman numeral X that starts and ends at the same corner of the field.

3.4 CONVERSION OF BULK COMMODITIES TO UNITS

To obtain uniformity in reporting plant quarantine inspections for the monthly, annual and other reports and validations, Agricultural Commissioners should use the conversion chart below to convert bulk commodities into units.

COMMODITY	UNIT	POUNDS
Alfalfa meal	Sack	l00
Alfalfa seed	Sack	l65
Apples (northwest)	Box	44
Bananas	Box	40
Barley	Car or Truck	
Beans (Castor)	Cwt	l00
Beans (all dry)	Sack	l00
Beans (green)	Bu	30
Broomcorn	Bale	333
Buckwheat	Cwt	l00
Cantaloupe	Crate	80
Celery	Crate	60
Corn (Kaffir)	Car or Truck	
Corn (shelled)	Car or Truck	
Cotton	Bale	500
Cottonseed	Cwt	l00
Flaxseed	Cwt	l00
Grapes (table)	Lug	28
Grapes (wine)	Car or Truck	
Hempseed	Cwt	l00
Milo	Car or Truck	

COMMODITY	UNIT	POUNDS
Oats	Car or Truck	
Onions (dry)	Sack	l00
Peanuts (shelled)	Sack	l20
Pears (northwest)	Box	46
Peas (green)	Bu	30
Peas (dry shelled)	Cwt	l00
Popcorn (shelled)	Cwt	l00
Potatoes	Sack	l00
Potatoes (seed pieces)	Cwt	l00

COMMODITY	UNIT	POUNDS
Potatoes (sweet)	Crate	50
Rapeseed	Cwt	l00
Redtop seed	Cwt	l00
Rice (polished & rough)	Cwt	l00
Rye	Sack	l30
Sorghum seed	Sack	l25
Sudangrass seed	Cwt	l00
Sweet Potatoes	Crate	50
Timothy seed	Cwt	l00
Tomatoes	Lug	32
Tomatoes (Mexican)	Box	2l
Vetch	Cwt	l00
Wheat	Car or Truck	

3.5 APPROVING QUARANTINE MATERIAL HANDLING LABORATORIES

Section 3154 of Title 3 of the California Administrative Code authorizes CDFA's PHPPS Director to issue permits allowing movement into or within the State of articles and commodities otherwise prohibited by the Department's plant quarantine regulations.

There is a continuing need by residue testing laboratories in California to be permitted to receive samples of plant material which is often restricted or prohibited entry into California by the Department's plant quarantine regulations. Such material for the most part is used in research studies or scientific tests, which are beneficial to the agricultural industry in California as well as other states. Due to the numerous samples to be received by each laboratory it would not be practical to issue a permit for each sample.

The laboratories must meet certain requirements and agree in writing to abide by certain limitations, conditions and provisions in handling sample material that would otherwise be restricted or prohibited under California plant quarantine regulations.

A laboratory desiring a permit should apply through the County Agricultural Commissioner to CDFA's PHPPS/ Permits and Regulations Program. County Agricultural Commissioner and/or Pest Exclusion will inspect laboratory facilities and equipment. These permits automatically terminate after two years from the date issued, and are revocable at any time.

Applications for permit renewals should be made in writing and received by the CDFA's Permits Program at least 30 days prior to the expiration date of the existing permit.
Minimum requirements for issuing a permit to a laboratory are:

1. Availability of a satisfactory place within the laboratory for holding and inspecting incoming material.
2. Availability of equipment or facilities in laboratory for immediate treatment, or destruction if necessary, of pest contaminated material. Such facilities include but not limited to incinerator, steam sterilizer (autoclave), oven, large cooker, fumigation chamber, acid or caustic vat. A Waring blender, or similar type of equipment, may be approved as a treatment for material for insects.
3. Availability of a freezer capable of holding stored material at 20 degrees Fahrenheit or lower.
4. Proper maintenance of records, listing type of material, date received, and amount of each lot tested or disposed, until all sample has been accounted.

Each laboratory must sign a written compliance agreement with the County/Pest Exclusion to carry out the following requirements and safeguards

1. The laboratory employee requesting or arranging for shipments of material will consult County Agricultural Commissioner and/or Pest Exclusion to determine if material is subject to quarantine.
2. Collectors or persons gathering material for shipment are to select material carefully to exclude insects, diseases, weeds or weed seed and other pests.
3. All samples are to be free of soil, debris and roots, except root crops well washed before shipping. Laboratories interested in receiving soil or roots etc normally prohibited or restricted by quarantine may arrange for special permit(s) for individual samples. Such permits must be granted prior to shipment.
4. All samples of plant material must be contained in plastic bags securely tied or sealed and shipped in sturdy outer containers.
5. Samples must be shipped by commercial carrier or USPS and are not to be transported as baggage or personal belongings unless advance permission was obtained.
6. The County Agricultural Commissioner is to be notified after arrival of sample, and before unwrapping, and arrangements made for inspection of the sample.
7. Quarantine or infested material that presents pest hazard must be labeled and recorded. The record will be maintained until the entire sample has been utilized in the process of testing or is otherwise treated or destroyed by an approved method. The records must be

made available to state/CDFA and/or County inspectors on request.

8. Permitted quarantine material received must be retained in storage, held in a freezer in plastic bags or other tight containers. Such material must be tagged with a yellow quarantine tag (Form 66-058) or other suitable tags as approved by the Agricultural Commissioner. CDFA or County agricultural inspector may destroy any improperly held or recorded material.
9. Plant material received by an approved laboratory shall be used for analysis or testing only. The material must never be used for propagation or removed from the laboratory for any purpose without treatment and prior permission from the Agricultural Commissioner or Pest Exclusion.
10. Quarantine and/or recorded pest material shall be treated or disposed of in an approved manner to the satisfaction of the agricultural inspector, unless the process of testing is determined by the inspector to be an adequate method to destroy or prevent escape of any pest which is or may be present.
11. Materials are to be limited to the minimum amount needed for testing.
12. Some special provisions for selecting and preparing certain quarantine material at origin for shipment are:
    a. Corn plants (stalks, leaves, or ears). Chop stalks and leaves into small pieces approximately six inches long. Break ear or cob into at least three pieces. Examine for evidence of insects tunneling in stalks, ear or cob.
    b. Sweet potatoes. Cut in approximately one-half-inch slices and inspect for evidence of sweet-potato weevil.
    c. Cotton seed and cotton bolls: Time requests for material so that it may be processed or tested immediately on arrival. Only the amount that can be immediately tested is to be shipped. This material cannot be held in storage.
13. If the plant material to be received is also restricted movement by federal regulations, the permittee shall obtain any necessary USDA permit or certificate prior to shipment of the material.

Approved Laboratories Agreement (Form 66-105)

3.6 SOIL POLICY AND APPROVED SOIL LABORATORIES

For the purpose of quarantine handing, soil may be classified into five categories:

1. Soil From Areas Under Quarantine. Soil collected in and shipped from areas under quarantine in which soil is subject to the quarantine regulations in effect at origin.
   Restrictions: Shipments accompanied by the appropriate certificates will be inspected and released if inspection findings are negative.
2. Soil Infested With Plant Pests. Soil known or believed to be infested with a plant pest, such as a nematode, fungus, broomrape, insect, etc., intended for scientific purposes, is subject to the regulations of the Federal Plant Pest Act if moved interstate and is subject to the restrictions of Section 6305, Food and Agricultural Code, if moved within the State. A permit is required in either case. This soil is also subject to the regulations of any quarantine in effect at origin.
   Restrictions: Shipments accompanied by the required permit, and necessary certificates, will be sent to destination under a 66-008 if properly packaged.
3. Soil From Foreign Counties and U. S. Territories and Possessions is subject to the regulations of the Federal Plant Pest Act. A USDA permit is required (PPQ Form 525).
   Restrictions: Shipments accompanied by the required USDA permit will be inspected and released.
4. Soil From Nonregulated Areas. Soil collected in and shipped from nonregulated areas in the continental United States is not restricted unless known or believed to be infested with plant pests as indicated in category 2 above. Soil should be inspected if suspected of carrying plant pests.
   Restrictions: Shipments will be inspected and released unconditionally, if no pests are found. If pests are found, it becomes subject to the restrictions of category 2 above.
5. Rock, Industrial Sand, Mined Clay, Gravel, etc., which may be way-billed, manifested, or invoiced as a "soil sample" is not restricted unless the article is covered by a specific quarantine or the sample is contaminated with or contains an admixture of soil.
   Restrictions: Shipments will be released. If it contains soil as a contaminant or an admixture, it shall be accorded the same status as soil from the same origin and handled accordingly.

Shipments not meeting the above requirements should be refused entry. If requested, shipments may be held at the station under proper safeguards while permit and any other necessary arrangements are made.

SOIL LABORATORIES; COMPLIANCE AGREEMENTS

1. When a California soil laboratory is interested in applying for a USDa Compliance Agreement to receive soil samples from anywhere in the United States or foreign countries (except certain portions of Canada), representatives of the County Agricultural Commissioner, Pest Exclusion (if available), and

USDA, APHIS, PPQ should make the initial inspection of the laboratory. With all representatives present, all questions concerning regulations, quarantines, and handling (interstate, intrastate and federal foreign procedures) can be answered.

2. USDA, APHIS, PPQ will complete the Compliance Agreement (PPQ Form 119) by having the responsible laboratory official sign the agreement and the county agricultural inspector will sign for both the County and the State (Pest Exclusion does not sign the agreement).
3. After the Compliance Agreement is completed, the original will be given to the laboratory with copies to the County Agricultural Commissioner and the USDA District Plant Protection Inspector.
4. In the interest of minimizing duplication of effort after the initial inspection and approval, we recommend that the county inspector monitor the laboratory in a routine manner at 6-month intervals. These inspections should be reported to the USDA District Plant Protection Inspector.

STIPULATIONS FOR HANDLING SOIL SAMPLES

Soil samples of any size may be received for processing provided the following requirements are met:

I. Shipping Containers
Soil samples must be shipped in sturdy, leak-proof containers, and marked "Contents - Soil Samples." These containers must be disposed of by burning or other approved methods. In event they are to be re-used they must be decontaminated by one of the approved heat treatment schedules.

II. Residue

III. Residue includes all unused soil from the shipment as well as screenings from filtrations and soil used in ph tests. All residue must be disposed of using one of the following methods:

A. Dry Heat

Temperature	Exposed Period
230 - 249 ^{o}F	16 hrs.
250 - 309 ^{o}F	2 hrs.
310 - 379 ^{o}F	30 min.
380 - 429 ^{o}F	4 min.
430 - 450 ^{o}F	2 min.

Do not start counting time until entire mass has reached the required temperature.

B. Steam Heat 15 lbs. pressure for 30 minutes. Individual packages of 5 pounds or less or, if in trays, the soil residues should not exceed 2 inches in depth.

Do not start counting time until pressure reaches 15 lbs.

C. Fumigation with methyl bromide at 10 lbs. of methyl bromide per 1,000 cubic feet for 24 hours, atmospheric pressure, Soil shall be dried to friable condition prior to fumigation.

D. Any other procedure approved by the Director(s).

III. Water Used to Process Sample
Whenever water is utilized in processing a soil sample, including initial rinse water of contaminated equipment, the used water shall be treated by one of the following methods before discarding:

A. Boiling for one minute; or
B. Placing in holding container and treating with one part DD (dichloropropane-dichloropropene), and one part Triton X-100, or a dishwashing detergent, to 98 parts of water in a holding container. Hold the treated water at 70 ^{o}F. for 30 minutes before discarding; or
C. Filtering through a 100-mesh screen or suitable paper filter. The residues left in the filter should be burned. This method is approved only for domestic soil samples; effluent from foreign soil samples should not be filtered but must be handled as in A or B above.

IV. Reshipment
Soil samples will not be reshipped to other laboratories unless such laboratory has a valid USDA permit and compliance agreement for imported soil, or a valid compliance agreement for domestic soil.

V. USDA Soil Permit
Requests for permits for soil from Hawaii, U.S. Territories and Possessions, and foreign countries will be directed to the Permit Unit, USDA, APHIS, PPQ, 6505 Belcrest Road, Room 638, Federal Building Hyattsville, Maryland 20782.

VI. Sampling Equipment
When the laboratory has control over the collection of soil samples, they will inform the collectors that equipment used for collecting soil samples in areas subject to Federal and/or State cooperative domestic plant quarantines will be thoroughly cleaned of all soil residues at the collection site.

VII. Adhere to all State of California quarantines dealing with soil. If there are any questions on this, contact the County Agricultural Commissioner.

SOIL LAB INSPECTION CHECK LIST

Yes No

1. Do you have a Federal Soil Compliance Agreement?

2. If yes, when was it issued?
   Date _____What is the number?
   _____

3. Are you now or will you be receiving soil samples from foreign counties, territorial U.S., Hawaii, or Alaska? _____ _____

4. If yes, do you have a permit to receive such soil samples?

5. If yes, when does it expire:
   Date _____ What is the number? _____

6. Do you have any other permits issued by the CDFA or USDA? _____ _____

7. Are any soil samples reshipped? _____ _____

8. If yes, is soil reshipped to an approved laboratory only? _____

9. Are you aware that foreign soil may not be reshipped? _____

10. Are shipping containers of soil samples marked "SOIL SAMPLES"? _____ _____

11. Are the containers leak-proof? _____ _____

12. Are the used shipping containers decontaminated before reuse or disposal? _____ _____

13. If yes, Burning _____ (for disposal)
    Dry Heat: Temp. _____ Time: _____
    Steam Heat: Temp. _____ Time: _____
    Ch3Br fumigation: Lbs./1000 cu. Ft. _____ Time: _____

14. By what other method are used shipping containers decontaminated? _____

15. Is soil residue disposed of by:
    Dry Heat: Temp. _____ Time: _____
    Steam Heat: Temp. _____ Time: _____
    Ch3Br fumigation: Lbs./1000 cu. Ft. _____ Time: _____

16. What other method is used to dispose of soil? _____
    _

17. Is the oven scaled so that no pest could escape? _____

18. Whenever water is used to process a sample, including rinsing contaminated equipment, is it disposed of by:
    Boiling: _____ Time: _____
    Chemically treating: Chemical _____
    H2O Temp: _____ Time: _____
    Filtering: 100 mesh screen _____ Paper _____
    (Effluent from foreign soil samples should be boiled or chemically treated)

19. If stored soil is untreated, is it enclosed in sturdy, leak-proof containers? _____

20. Is a log book maintained stating (a) Date soil received, (b) Origin, (c) Disposition date? _____ _____ _____

3.7 POSTENTRY QUARANTINE PROCEDURES

Postentry quarantine was initiated by the USDA to allow the importation of plant material(s) that may have diseases which are not readily apparent. The program provides that "restricted" materials be held by a permittee for a two-year period, six months for *Chrysanthemum spp*., one year for *Dianthus spp.* Such plant material is subject to inspections by the USDA or CDFA plant pathologist.

PERMIT PROCESS

Complete PPQ Forms 546 (Agreement for Postentry Quarantine--State Screening Notice) and 587 (Application for Permit to Import Plants or Plant Products)

Forward to:

Special Assistant, Permits and Regulations
Plant Health and Pest Prevention Services
California Department of Food and Agriculture
1220 N Street, Room A-316
Sacramento, CA 95814

CDFA will forward a copy of Form 546 to the county requesting inspection of the growing site and to review the

requirements of the postentry quarantine program with the applicant (conditions are on the Form 546).

If the site is approved, CDFA will forward the completed Forms 546 and 587 to the USDA, who will issue the permit. It can take up to a month to receive a permit. If permit is issued, the permittee may go forward with the importation of restricted plant material.

Once the restricted plant material is shipped, it will be forwarded to the nearest USDA Inspection Station upon arrival, where it will be inspected.

After inspection, the USDA personnel fills out PPQ Form 236, (Notice of Shipment and Report of Inspection of Imported Plants -Grown Under Postentry Quarantine) which gives the following information:

- Permittee
- Growing ground site address
- When the plant material arrived
- When the plant material was released
- Quantity or amount
- Type(s) of plant material

This form includes an Inspection Station Reference Number. This number allows the proper tracking of the plant material throughout the two-year quarantine period.

Thereafter, the plant material is shipped to the permittee and will begin its quarantine.

MOVEMENT OF RESTRICTED MATERIAL DURING THE QUARANTINE PERIOD

An individual wishing to receive plant material during the quarantine period is required to get a postentry quarantine permit. They need to fill out Forms 546 and 587 as required above.

Once a permit is issued, the individual wishing to ship the plant material is required to obtain written permission from the USDA or CDFA, Permits and Regulations Program to move the plant material. The request must contain the following information.

- Permittee name and address (shipper)
- Number of plant material to be moved
- Inspection Station Reference Number under which the plants were imported
- Receiver's name and address
- When the plants will be moved

Note: For more detailed information on this program, refer to the "Postentry Quarantine Manual for State Inspectors – Procedural Manual for State Inspectors Conducting Postentry Quarantine Duties."

3.8 SPECIMEN COLLECTION AND SUBMISSION GUIDELINES

3.8.1 DISEASE PATHOGEN, NEMATODE, AND INSECT SAMPES

A. DISEASE PATHOGENS

A sample should be collected any time that an intercept plant material(s) is suspected of infection or may be infested with quarantine or pest-rated plant pathogens. The sample should be submitted to:

California Department of Food and Agriculture
Plant Pest Diagnostics Laboratory
Plant Pathology Section
3294 Meadowview Road
Sacramento, CA 95832-1448
Phone: 916-262-1100

The guidelines for submitting such samples are:

1. Collect as many portions of the symptomatic diseased plants as possible: roots, branches, stems, leaves, and fruit; entire plants may be submitted if small. Mark suspected symptom areas with tape, string, or waterproof pen, directly on the specimen. Include specimens that exhibit margins of healthy and diseased tissues. These margin areas facilitate testing and disease determination.

   Virology specimens should include "green" (i.e., fresh) plant tissue associated with the symptomatic tissues (areas). Dry, necrotic or rotting "brown" areas are impossible to test for viruses. Mycology and bacteriology specimens should include the margin areas (healthy and diseased tissues), but submit entire fruits and leaves when possible. These areas are where the fungus or bacteria is still alive and active, facilitating isolation and identification.

2. Packaging of samples is dependent on the material you wish to send:
   - Leaves – Place in plastic bag with dry paper towels.
   - Stems – Cut to size and place in small plastic bag with crumpled paper towels. Moisten towels if dry conditions occur.

- Roots – Wash free of soil and send like stems.
- Whole plants – May also be sent like stems. Specimens submitted in plastic bags should have holes punched in the bags; this will allow specimen to "breathe" and not kill the organism – unless highly contagious diseases are suspected, then specimens should be double-bagged (see citrus canker guidelines below). Do not enclose the PDR document inside the bag.

3. When filling out the Pest Damage (Form 65-020) be sure to fill in all pertinent information in the spaces provided. Under the space marked "remarks," note what you suspect, what you want them to identify, and anything else that may help with the diagnosis. Include FAX and phone numbers where necessary on the PDR for immediate reply, etc.
4. Samples should be refrigerated and submitted as soon as possible. Samples collected in the field should be stored in an ice cooler with blue ice. Keep specimens at 50-55°F.
5. Specimens should be mailed early in the week (e.g., Monday through Wednesday) to avoid layovers during the weekend, which may cause sample spoilage. Do not send specimens by commercial bus lines (e.g., Greyhound) as notification may be slow and CDFA personnel may not be available to pick up the sample immediately. Commercial parcel services (e.g., UPS and FedEx) are good shipping alternatives.
6. Citrus Canker: Because the disease is easily transmitted through handling or movement of infected material, it is necessary to observe the following procedures when inspecting, sampling, or disposing of any contaminated host materials:
   - **Inspection and Sampling Canker:**
     - Use disposable gloves when handling fruit or any other host material for inspection. After samples are collected, place gloves in the bag with the sample.
     - If gloves are not worn, be sure hands are dry. Bacteria can be transmitted easily through moisture.
     - Collect at least three to four fruits or other plant parts (leaves, stems, etc.) exhibiting the best symptoms of the disease. Do not submit rotten, or partially rotten, fruit.
     - Submit whole fruit or leaves for identification. Do not cut lesions out of fruit or leaves.
     - Each fruit should be separated from the other fruits to avoid cross contamination. Wrap each sample in dry newsprint or a paper towel, and place each wrapped sample in a sealed plastic bag. If submitting stems or leaves, all samples may be placed in the same bag.
     - Place all sealed individual bags inside another plastic bag and seal. If gloves have not been worn, wash hands thoroughly with soap and water after handling samples and before handling outer bag.
     - Place remaining fruit, plants, or plant parts in plastic bag and seal. Again, wash hands thoroughly with soap and warm water, then double-bag and seal. Place plants on hold pending identification of samples. Make sure all held shipments are properly safeguarded.
     - Rinse any tools that were used in the inspection process and wipe all surfaces coming into contact with the samples with 70% isopropyl rubbing alcohol.
   - **Submitting Canker Samples to Lab:**
     - When filling out the PDR, be sure to include a phone number, fax number, and the name of the person to contact.
     - Place double-bagged samples in a cushioned box for mailing.
     - Use overnight mail if possible.
     - If unable to mail right away, refrigerate samples until you are able to ship them.
   - **Disposal of Canker Samples:**
     - Any items of clothing that came into contact with contaminated or possibly contaminated fruit should be washed as soon as possible.
     - If citrus canker is confirmed on any of the samples, properly dispose of the entire shipment by either autoclaving (best option) or steam sterilizing at a certified facility. Contact the Pest Exclusion District Biologist to help facilitate proper disposal.
     - Please note that it is not necessary to submit samples from any host material that is prohibited under Federal Foreign Quarantine 319.19 or 319.28. This includes all genera, species, and varieties of the family Rutaceae, including Szechwan pepper, citrus nursery stock, and untreated citrus peel. Material covered under a Federal Foreign Quarantine should be rejected and disposed of following the same guidelines as above, regardless of the presence or absence of any pest or disease symptoms.
7. **Sudden Oak Death (SOD), *Phytophthora ramorum*** samples:

Oaks and Tanoaks:
Symptoms on tanoaks (*Lithocarpus densiflorus*) may include drooping or wilting of new growth prior to the

appearance of bleeding cankers. On oaks (*Quercus spp.*), such wilting does not occur. Instead, reddish-brown bleeding from cankers is the first visible symptom. Removal of the outer bark reveals a zone of necrotic tissue delimited from healthy tissue by a dark zone line. Foliage changes occur in the advanced stages of decline. Leaves may cling to branches for up to one year after tree death.

Due to the difficulty in confirming the SOD pathogen from wood from suspect trees, you are strongly encouraged to also survey around any suspect trees and submit other symptomatic material from nearby hosts. It is often useful to look for blackened leaf tips, a symptom on California Bay trees.

To confirm that a symptomatic tree has the SOD *Phytophthora*, the pathogen has to be cultured on a special agar medium from a sample of the inner bark of the tree. Sampled bark pieces are placed in petri dishes containing pimaricin-ampicillin-rifampicin-PCNB agar (PARP), a selective media for *Phytophthora* species. To obtain the PARP medium, contact the Plant Pest Diagnostic Branch (PPDB) or your local UC Cooperative Extension office.

Equipment needs:

Axe or hatchet
Sterilizing agent such as 70% ethanol, Lysol or 10% commercial bleach
Pens for labeling samples
Scalpel or sharp knife
Forceps
PARP selective media in petri dishes
Tape to seal petri dishes
Paper bags and/or box for sending samples to the lab

Ensure all tools are sterilized prior to sampling and between taking samples.

- Shave away the outer bark above or to the side of a seeping area and examine the lesion area until a canker margin (zone line) is evident.
- Use the knife and forceps to excise small pieces (approx. 1/8" x 1/8" or smaller) of the phloem including both healthy and necrotic bark tissue on both sides of the zone line.
- Place each phloem piece on the medium and push down until it is covered by the medium.
- When you have 6 to 8 pieces of phloem inserted in the medium, seal the plate with the tape and label it, including the date, location and species of the tree sampled. Repeat the same process on another plate (sample each tree using two plates).
- Mail plates for incubation and identification of the fungus to:

  California Department of Food and Agriculture
  Plant Pest Diagnostic Laboratory
  3294 Meadowview Road
  Sacramento, CA 95832-1448

Rhododendron (*Rhododendron sp.*):
Symptoms of *P. ramorum* on Rhododendron, include twig dieback and leaf spotting, usually not mortality. Look for brown spots on leaves that have diffuse, fuzzy margins, rather than sharp margins indicative of sunburn injury, and generally do not involve the midrib of the leaf. Also, look for blackened shoots with or without foliage still attached.

California or Evergreen Huckleberry, (Vaccinium ovatum):
The symptoms include twig dieback and, in advanced stages, will kill canes down to the ground, killing all the above ground portions of the plant. Look for small, blackened twig cankers that are girdling the twigs. Tissue beyond the twig cankers may be dried and/or wilted. Cut the twigs below the cankered regions (well into the healthy tissue).

California Bay Laurel (*Umbellularia californica*):
The symptoms of *P. ramorum* on California bay laurel have been confined to leaf spotting, often surrounded by a chlorotic halo. Leaf spots are often at the leaf tip and may or may not have a blackened line at the border. Anthracnose may also cause this symptom.

Madrone (*Arbutus menziesii*):
Symptoms include leaf spotting and cankers on small branches. At advanced stages, the entire leaf and shoot turns black.

California Buckeye (Aesculus californica**):**
The symptoms of *P. ramorum* on California buckeye include leaf spots and cankers on petioles and small twigs. The leaf spots appear to be more distinct around the margins of the leaf.

B. NEMATODE SAMPLES

Damage to plants caused by plant parasitic nematodes cannot be diagnosed on the basis of plant symptoms. Plants affected by nematodes may show no symptoms of damage, or manifestation with general symptoms of an impaired root system commonly produced by several biotic and/or abiotic conditions. In order to detect the presence of plant parasitic nematodes associated with plants, samples are collected appropriate to the biology and feeding behavior of nematodes. Most nematodes of quarantine significance e.g., burrowing nematode, reniform nematode, sting nematode, European dagger nematode and soybean cyst nematode, feed on plant root tissue. Others, such as the strawberry summer dwarf nematode, feed on above ground plant parts.

The following guidelines concern the collection, preservation and shipment of quarantine samples for nematode assay:

1. Collect up to one quart of roots and soil from plant when possible or a composite sample of at least one quart of roots and soil from several plants. If shipment is less than one quart then collect one cup full of roots and soil. If the shipment is less than one cup then collect as much of a representative sample as possible.
2. Collect roots and soil from several plants (sub-samples) in large shipments. Mix sub-samples into a composite sample. Soil/root sub-samples from the same plant variety may be combined to form a composite sample.
3. When sample comprises a few roots without soil, and no processing facility exists in the county laboratory, put roots in a nematode sample vial with one or two drops of water and send by the quickest mail to CDFA's Nematology Laboratory. More than one vial per sample may be used as long as proper and complete origin/sample identity information is given. When the root sample is large, put roots with one or two drops of water in a plastic bag. Avoid large air spaces by sealing/tying the bag close to the enclosed sample.
4. Do not moisten sample by enclosing a moist paper towel in sample bag.
5. Put sample in durable plastic bag only. Use two bags if necessary. Dry seed samples may also be put in durable plastic bags. Raw vegetable and aboveground plant parts should be put in plastic bags.
6. Label sample bag. Do not enclose label tag in bag. For shipment to laboratory, place all written material in box, not within sample bag.
7. Keep samples cool (50-55 degrees F) after collection. During collection, put samples in an insulated cooler. If necessary, use blue ice packets but wrap ice packs in paper to prevent freezer burn of sample through direct contact. Do not freeze the sample. Do not place samples in direct sunlight or in car trunk.

C. INSECT SPECIMENS

The following is a basic overview of collecting, preserving and shipping techniques, which will assist field personnel in submitting insect specimens to the CDFA Plant Pest Diagnostics Branch in Sacramento:

1. All samples should be mailed in boxes. CDFA often provide such boxes. Do not submit samples in envelopes, even the padded ones. The samples invariably arrive crushed.
2. Alcohol (70-75% isopropyl) in small vials, sometimes supplied by CDFA. These vials should be used for most general collecting work. Larger collection containers will have to be supplied by the collector. Any jar or vial with a tight fitting lid is adequate, and these can be filled with common rubbing alcohol. For specimens, like larval forms that require boiling water, a microwave oven is useful. Do not microwave the specimen, just the water!
3. Killing bottles can be used for some groups of insects, especially adult Lepidoptera. Cyanide is no longer recommended, but ethyl acetate or fingernail polish remover, few drops on absorbent paper can be used for this purpose. Alternatively, placing the specimen in a jar and freezing is an option, especially for medium to large Lepidoptera. Samples should be thawed prior to shipment.
4. Some specimens, especially the relatively non-mobile insects such as scale insects, whiteflies and adult Lepidoptera, are best sent dry, either in perfectly dry vials or in paper or plastic bags. If the sample is in bags, some amount of paradichlorobenzene (PDB), mothballs or flakes, should be included in the container to kill anything that might be alive. The PDB must be wrapped and sealed in paper toweling or facial tissue to keep it from mixing throughout the sample.
5. Collect an adequate number of specimens. Variability is a common problem in some species groups, and a large series facilitates the taxonomist's ability to give correct determinations. Also, a series may assure that the proper life stage necessary for identification is present, especially in the case of insects that have an incomplete metamorphosis.
6. Whenever possible, the sample should include host plant material. Write the scientific or common names of the host(s) on the accompanying PDR. Small arthropods such as scales, whiteflies, aphids, mites, thrips and the like are easily damaged if collected individually. Parts of the plants with the specimens attached are often best collected by placing the infested plant parts directly into alcohol. However, be careful not to take whole leaves and roll them too tightly in order to get them into a small vial. The leaves turn brittle and will shatter when removed from the vial. The specimens may also be crushed.

RECOMMENDATIONS APPLYING TO INDIVIDUAL ARTHROPOD OR OTHER GROUPS

1. **ACARI (mites)** are best collected fresh, into alcohol, along with infested parts of the leaf or other plant parts. Identifications, particularly of the tetranychid mites, require the male mite. Collecting a good sample on infested plant parts improves the chances that a male will be present in the sample. Samples can be collected in bags if the sample is mailed as soon as possible after collection. Waiting too long will result in dried out or moldy samples and at times lost specimens.

2. **COLEOPTERA (beetles and weevils)** may be killed in either alcohol or a killing bottle. Immature stages should be dropped in boiling water for 1-2 minutes and then transferred to 70-75% alcohol. If it is not possible to kill them in boiling water, specimens may be placed in the vial of alcohol. If beetles in any stage have been killed in alcohol, they may be preserved and shipped in the same material. If killed by other methods, adults may be transferred to alcohol or layered between soft material such as tissue paper or paper napkins - do not use cotton as its fibers can become tangled around the insect's appendages and removal could break them off. Broken and missing tarsal or antennal segments hamper identification.

3. **DIPTERA (true flies) and HYMENOPTERA (ants, wasps, and bees):** Adults of all Diptera and Hymenoptera are most easily handled for identification if sent to the laboratory preserved fresh in 70-75% alcohol. Most of the specimens may be killed and preserved directly in alcohol. Specimens that are dead when found should be carefully placed in hot water for 10 minutes before being transferred to alcohol. This softens the tissues and prevents breakage. Larvae of Diptera and Hymenoptera should be submitted for identification in 70-75% alcohol. They are best preserved if fixed before preservation. Fixing may be accomplished by dropping the living larvae in boiling water for 1-2 minutes. Larvae of Diptera and Hymenoptera are usually much more difficult to identify than the adults, so if at all possible, adults should be associated with larvae. If not possible to collect adults, a sample of the damage caused by the larvae should be submitted.

4. **GASTROPODA (snails and slugs)** should be killed by submersion in water, usually 12-24 hours and then preserved in alcohol, allowing for approximately 10 times the specimen body size with the alcohol.

5. **HETEROPTERA-"HEMIPTERA" (true bugs)** should be collected directly into alcohol.

6. **HETEROPTERA -"HOMOPTERA"** (**Scales, mealybugs, whiteflies, aphids, psyllids, and leafhoppers**) are collected in a number of ways depending on the group. Scale insects and immature whiteflies can be submitted on pieces of plant in alcohol, but it is preferable if they are sent on the host plant in plastic bags. Adult whiteflies should be collected in alcohol. Also, in the case of whiteflies for positive identification, it is usually necessary to have the last stage nymph or pupa in the sample. Mealybugs can be with part of the host if convenient. Most mealybugs are mobile throughout life; if collected into a bag, they will often get into the corners of the collection bag and become crushed. Collecting into alcohol will prevent this. While mealybug wax patterns can be used for tentative field identification and local county entomologist may use these as diagnostic characters, the wax patterns are not used in CDFA's Plant Pest Diagnostic Lab for identification. Therefore it is not important if the wax comes off the specimen in alcohol. Also, mealybugs usually must be slide mounted using a process that takes several hours, so the turnaround time in this group is generally longer than for the rest of the scale insects, which often do not require this same preparation. Aphids and psyllids should be collected in alcohol and should never be preserved dry. For aphids, select the largest individuals of both winged and wingless forms, if present. Alcohol is preferable for the leafhopper, cicada, and treehopper groups, but dry or pinned material is adequate.

7. **LEPIDOPTERA (moths, skippers and butterflies)** adults should be submitted in alcohol only as a last resort. Wing color patterns may be critical for identification and these are often destroyed in alcohol. After killing in a kill jar or by freezing, adult Lepidoptera should be placed in a container lined with soft paper towels or facial tissue such that the specimens will not shift around during shipment. Where numerous specimens are to be sent, several layers of insects and paper may be placed in a shipping box. Larvae of the Lepidoptera should be killed in boiling water and transferred after 1-2 minutes into 70-75% alcohol. If boiling water is not available, place the specimens in alcohol as described under Coleoptera.

8. **ODONATA (dragonflies and damselflies), NEUROPTERA (lacewings, antlions, and dobsonflies), DERMAPTERA (earwigs)** and other miscellaneous orders not covered above can be sent dry or in alcohol. If sent dry, they should be carefully layered in tissue paper and packed so as not to break apart during shipping.

9. **ORTHOPTERA (grasshoppers, crickets, locusts, cockroaches, walkingsticks, and mantids)** are best collected into alcohol, either using a large vial or inserting into a small vial posterior end first. Grasshoppers and katydids inserted into a vial headfirst often cannot be extracted without breaking off the rear appendages.

10. **THYSANOPTERA (thrips)** must be shipped in alcohol. They are best collected by beating the host over a light and/or dark paper or cloth sheet and capturing with a wetted camel hairbrush from the beat sheet into alcohol. If the host is not a valuable one, the camel hair brush can be used to collect thrips directly from the host into the vial. If the host is a valuable specimen, the beat sheet should be used because the alcohol adhering to the brush may cause damage to the host. Try to collect adults specimens with wings, as identification of larvae is often impossible.

GYPSY MOTH SAMPLES

Submit a lab sample when evidence of any life stage is found. Use the following procedures when submitting egg masses for confirmation:

- When removing egg masses, use a solution made up of ¼ cup of laundry detergent (Tide, etc.) to one quart of water. This solution will not assure 100% mortality, but it will reduce the hazard of viable eggs falling from the egg mass during removal and prevent scattering of eggs.
- Place the egg mass in a container filled with alcohol. Do not use the detergent solution. Write on the PDR under "REMARKS" if the eggs were examined and were found filled with fluid. All specimens submitted in the manner described above will be identified as viable or non-viable by the lab.
- Fill out a PDR on all gypsy moth specimens whether or not they appear to be alive. Before submitting specimens, assure that all life stages are dead. In the "REMARKS" section of the PDR include the following information:
  - If egg mass, whether they were examined and filled with fluid
  - County or border station name
  - Number of the Gypsy Moth Rejection Warning Notice (Form 66-008A)
  - If out-door household articles (OHA) document was present or absent

  Affix the gummed number label from the PDR slip to the copy of the 66-008A that is mailed to Sacramento.

3.8.2 WEED SAMPLES

Plant specimens in plastic bags or bottles always run the risk of arriving at the laboratory decomposed or "cooked" beyond recognition. The preferred way to send a plant specimen to the Botany (Weed) Laboratory is to place the specimen between sheets of folded newspaper. Don't use tape or staples; they aren't needed and only get in the way.

Put the specimen in a manila envelope, or a flat box. A very good shipping container can be made from two pieces of corrugated cardboard. Place the specimen and the PDR slips between the two pieces of cardboard and then seal with shipping tape around the edges. The mailing label is placed on the outside and it's ready for mailing. Several counties have used this method for years with excellent results.

Even very delicate aquatic plants such as hydrilla or elodea should be sent this way. If the newspaper becomes soggy, you should change the paper, perhaps several times, to remove the excess moisture before sending the specimen. This will help to dry it out and keep it from rotting while in transit.

Reminder: A weed specimen can never become too dry. Dry plant material can always be examined and identified by a plant taxonomist, but nothing can be done with a soggy, moldy and decomposing specimen.

3.8.3 SEED SAMPLES

3.8.3.1 NOXIOUS WEED SEEDS

Seeds for quarantine purposes should be collected and submitted in the same manner as regulatory seed samples. The California Seed Law lists the appropriate amount of seed necessary for an exam.

Seed that is treated (includes those treated with pesticides, fertilized, pelletized, coated, or dyed) **shall be placed in plastic bags**. If samples are not in plastic, the sample may not be processed.

If the sample is a seed mixture, a copy of the seed label with the percentages of the components shall be submitted.

A sample submitted as a quarantine/regulatory sample must have both an Inspector's Description of Sample (Official Sample Form) and a PDR with the following:

- One PDR per sample.

- Note the origin of the seed (as well as where it was shipped from and the destination).
- Remember to fill the shipment size of the lot shipped/received. Also, include the size of the container (e.g., 20/50 #, or 1,000 #/50 # - not 20 sacks)
- Host/Crop section - enter the type of crop (e.g., tall fescue, not "grass seed")
- In the REMARK section of PDR, enter Lot Number, Type of treatment, etc., Signal words-Noxious Weed Exam, Rush and Fax or Phone number of County contact (not the seed company).
- Mark the PDR number clearly on the outside of the sample container. Do not place paper work inside the sample container.

3.8.3.2. MILL APPROVAL

Samples are best submitted in brown paper bags (double-bagged if necessary). Mark the PDR number clearly on the outside of the sample container. Write one PDR with the following "Remarks:"

- If sample is processed (cracked, ground, rolled, pelletized, heat treated, etc.), use the words - Mill Approval, check for viable weed seeds.
- If sample is unprocessed, use the words - Mill Approval, check for noxious weeds.

Do not place paper work inside the sample container.

3.8.3.3 INDIVIDUAL SEED FOR IDENTIFICATION

Seed samples may be submitted in any appropriate seed container. Do not place the samples in alcohol. Provide sample origin information on the PDR. Mark the PDR number clearly on the outside of the sample container.

3.8.4 SOIL RESIDUE SAMPLES

1. Take 10 one-quart samples from each shipper. If 10 one-quart samples cannot be taken, take as many one-quart samples from each shipper as possible (up to 10 quarts).
2. Samples should be taken from larger pots (> 1gallon).
3. Gather soil from one pot for each sample in order to test uniformity of treatment procedures over different pots. Pull root balls from the container and shave off soil from the bottom and sides of root ball area. Replace the plants and add potting media to refill the container to its original level.
4. Place soil samples in foil bags for analysis. If you run out of foil bags, use glass containers. Do not use plastic as this can interfere with results. As well, be aware that light and heat degrade some elements/chemicals. Keep samples cool, covered, and submit them ASAP or keep them in a refrigerator or freezer.
5. Use one laboratory form (Form 11-002) for each sample. Label samples with the name of collection site e.g. production nursery and an identifying number (e.g., XYZ Nursery, #1 of 10). A permanent ink marker (e.g., Sharpie pen) will write on the foil bags, however, you may use any kind of adequate tape or paper label. For maintaining identity, be sure that the number of the sample corresponds to the sample number written on the lab form that accompanies it.
6. Record all information that may be useful in properly identifying the sample.
7. Use one form for each soil sample. Samples may be driven to the lab or sent via expedited delivery.

3.8.5 DOCUMENTATION AND GENERAL LABORATORY GUIDES

FILLING PEST AND DAMAGE RECORD
FORM 65-020

The Pest and Damage Record (PDR) can be submitted either filling the blank form or online

- Write/enter in county number, activity code and situation. Leave remainder blank if quarantine shipment
- If a Botany sample, include range, township and section.
- Check correct box at top for routing to the appropriate specialist.
  - Insects: if two kinds of specimens in one vial, state that in remarks section. If more than two, use another vial and fill out another PDR.
  - Disease Pathogen Or Nematode Specimens-refrigerate to keep fresh.
  - Weed specimens-send best possible specimen. If seeds are present, send to seed lab.
- Complete name, address, date, collector's name and section as accurately as possible.
- Always indicate the host for an insect specimen. This is especially important when found on an unexpected host. Include the botanical name and variety of host plant if known, for nematode samples.
- If sending to plant pathology, check off appropriate symptoms. If an insect, check condition and stage when found. Appropriate symptoms are useful for insect samples also. Write in pertinent information in remarks

section (never write in "determination" section if holding a shipment pending I.D., write "RUSH-QUARANTINE" to expedite).
- Write in county name.
- Attach I.D. # to specimen.

Tear off set of pages, keeping pages attached together at the top. Keep last yellow copy for your records.

Plant Pest And Damage Record (PDR) Internet Access:
Inquiries regarding the status of a PDR for plant diseases may be accessed online. The Pest and Damage Record information is acquired by entering the PDR number in the search section.

The information for Entomology is on the Internet and can be accessed from a database of the CDFA Plant Pest Diagnostics Center via the PEIM (Pest Exclusion Information Management) link on PE's extranet homepage.

The following shows a copy of the record of a *Phaseolus vulgaris* plant sample collected from one of the phytosanitary inspection seed fields and it was diagnosed for two different PQ disease symptoms. The record gives the inquirer the information that the sample was received and diagnosed by so and so and on such and such a date. However, the diagnosis is kept off the public record due to legal and confidentiality concerns.

Plant Pest Diagnostics Branch
Pest and Damage Record
Sample Query Results

The following records were found for the ID numbers you entered:

ID Number: 1980144
Date Collected: 9/19/2005
Host: *Phaseolus vulgaris*
Date Received: 9/23/2005
Assigned to/Contact: Jane Doe
Days delayed: 0
Signed by: Jane Doe
Signed Date: 9/23/2005

ID Number: 1980144
Date Collected: 9/19/2005
Host: *Phaseolus vulgaris*
Date Received: 9/23//205
Assigned to/Contact: TIDWELL/DF
Days delayed: 0
Signed by: J. Doe
Signed Date: 9/24//2005

Some General Notes on Filling Out PDR Slips
- Use pen (this is a legal document)
- The city should be the location of the collected specimen. Do not abbreviate city names
- If the specimen was collected during a quarantine inspection, we need the quarantine origin
- Always state the host from which the specimen was collected. This may not always be plant material; it may be a building or a home
- A PDR filled out as completely as possible increases the accuracy of record keeping. Slips appropriately marked "RUSH" are handled expeditiously. Phone calls are made to the county offices on those involving quarantines or human health problems. All others are mailed as soon as they are returned from the entomologist.
- Write your first and last name on PDR. This helps the lab to credit the collector in publications dealing with new or otherwise important collections.
- Use correct activity codes:
  - Quarantine inspections use codes beginning with "0"
  - Nursery inspections use codes beginning with "7"
  - Detection surveys use code "12"
  - General situations use code "10."
    (These usually involve "walk-ins" by members of the public)

Things To Be Aware Of When Submitting Insect Specimens To The Lab:
- Nothing should be sent to the lab alive unless first approved by the entomologist involved.
- There should be enough alcohol in the vial to cover the specimen and then some (See Gastropoda above). If not properly preserved the specimen can degrade/rot by the time it is received and unidentifiable. It can also become very smelly!
- When submitting insects collected in sticky traps, cut out a small piece of the trap (e.g., with a razor blade) containing the suspect insect. Submit that piece in a small vial. The piece of the insert should be cut to a size that will minimize movement inside the vial during mailing. DO NOT submit entire large trap inserts, these are cumbersome, messy, and confusing as to what needs to be identified. Submit ONLY the small piece with the specimen to be identified. However, there are some exceptions in rare survey projects where an entire trap must be inspected.
- Please make sure each vial or trap has a corresponding PDR # attached to it.

- Please submit specimens in clear vials or bottles and make sure the corresponding PDR number is attached lengthwise to that vial or bottle. This facilitates viewing of the specimen.

Links to recent Pest Exclusion Advisories (PEA)
PEA 24-2005
PEA 35-2004
PEA 31-2003
PEA 24-2003

3.9 EXAMPLES OF CERTIFICATES

3.9.1a FEDERAL DOMESTIC QUARANTINE CERTIFICATES AND PERMITS

Various certificates and permits are used in federal domestic plant quarantine for the control or eradication of a pest in a state. Below are select certificates and permits that should be accepted by all State/County Regulatory Officers as notification of meeting the quarantine requirements in effect at point of origin.

1. Individual shield-type package certificates are in several forms, including a 2" x 3" paper certificate, a rubber stamp, a postage meter certificate, or may be printed on receipts, cartons or shipping labels when authorized. Printing dyes may be furnished by the Department on loan to approved shippers and returned when a printing order is completed.
2. Master certificate is used for car or truck lot shipments and will accompany the bill of lading or other shipping documents. This certificate will describe the contents and quantity of the shipment.
3. Limited permit authorizes movement of non-certified regulated articles without diversion to specified destinations for
   - Limited handling, processing or treating
   - Safe utilization or consumption

The above certificates are uniform for most federal domestic quarantines and cover large percentage of regulated movement. However, there may be special purpose certificates for specific programs such as barberry nursery, the gypsy moth, stone and quarry, scientific purpose certificates. The use of the later forms are usually not frequent.

3.9.1b MATERIAL ORIGINATING IN FEDERAL DOMESTIC QUARANTINE AREAS

The USDA/APHIS/PPQ advises it is safe to assume commercial shipments of plant material moving from a federal domestic quarantined area to a non-quarantined area for packaging and mailing have met the federal quarantine certification requirements.
Uncertified commercial shipments of plant material mailed from a non-regulated area, even though material originated in a regulated area, may be admitted if inspection findings are negative.

Material covered under a California quarantine would be required to meet conditions of the California quarantine, if the material originated in Florida and was reshipped from New York, it would need a Florida certificate.

Plant material shipped directly from a federally regulated area would require federal certification;
Examples of commercial shipments of material not requiring federal certification:

- Okra originating in Imperial County being reshipped from Los Angeles County
- Plants originating in Georgia being reshipped from Illinois

3.9.1c CERTIFICATION - VERIFICATION BY ONE STATE FOR ANOTHER STATE

Mail-order houses, and some nurseries, purchase plant material from many states and then transship to California. For quarantine purposes it is important to know the origin of the material. The following examples may be used as guides in processing plant material in regards to origin:

1. Minnesota officially certified *Anthurium* originated in Florida. Burrowing nematode certificate accompanied shipment from Florida, acceptable.
2. Minnesota shipper stated maple tree originated in Pulaski County, Arkansas. Maple is acceptable, as no California exterior quarantine involved.
3. Minnesota shipper stated maple tree originated in Arkansas, not acceptable. California exterior quarantine indicates portion of state is under quarantine.
4. Minnesota official certified maple tree originated in Arkansas and an ozonium root rot certificate accompanied shipment from Arkansas, acceptable.
5. Permission has been given to some states to certify materials coming into CA. Such certificate must bear "Meets the requirements of California quarantine

Sections …". This statement will be on the certificate from the origin state.

3.9.1d COMMUNICATIONS WITH OTHER STATES

Correspondence with nurseries, individuals and officials of other states, relating to the rejection or certification of plant materials, signed as "Agricultural Commissioner" may cause confusion.

To write to persons in other states relative to rejection or certification of plant materials or other plant quarantine matters, letters should be signed as "State Plant Quarantine Officer", which is the designation in the Agricultural Code. Only those person holding plant quarantine certificates may legally sign rejection notices, State phytosanitary certificates or certificates of quarantine compliance.

Matters pertaining to policy or rulings on controversial points relative to plant quarantine matters should always be referred to CDFA Pest Exclusion for reply.

Correspondence relative to rejections or policies already in effect need not be referred to this office for reply, but copies should be forwarded for information purposes.

3.9.2 CERTIFICATE OF QUARANTINE COMPLIANCE (ORIGIN OR TREATMENT)

Certificate of Quarantine Compliance (CQC) is issued to agricultural commodities and/ or products requiring treatments as a condition of entry into the destination state. This certificate should be used to certify material to any state or territory that may have an existing quarantine against a pest from California, e.g. brown garden snail quarantine by FL. Some destination states/territories at times specifically request that they want a state phytosanitary certificate instead of CQC. State phytosanitary certificate should be issued to shipments to states that do NOT have an existing quarantine against a pest in California and made no specific request that requires issuance of CQC, in their regulations.

The California Department of Food and Agriculture and County Agricultural commissioners may enter into an agreement with a person or persons who meet prescribed qualifications, authorizing said person to treat said articles and issue a “Statement of treatment” as required in the agreement. Such treatments must:

1. Be done in a state approved treatment facility
2. Comply with all federal, state and county regulations and meet destination state/county requirements.
3. Follow recommended schedules prescribed for the commodity, as to material, exposure time, temperature, and humidity (if applicable). Necessary safety equipment must be available.

3.9.3 NOTICE OF REJECTION

Notice of Rejection can be completed at CDFA website (http://phpps.cdfa.ca.gov/user/frmLogon2.asp). A login account is required for access to the site. Hardcopies can be completed using the instructions.

Program Use
The NOR program is menu driven allowing for navigation by simply clicking buttons with a mouse. Keyboard commands (using with the underlined letter) as well as the Access97 menu and toolbar buttons are also available. It is recommended to create a shortcut button on your desktop giving you quick access to the program. Double clicking this icon will start the program and open to the main menu screen.

Navigation on menus and forms uses a combination of clicking with a mouse, and keys, and the button. The button is used to move between buttons and fields. The button is used to select the highlighted item. The button in combination with a character is used perform the function of the button the character represents. These characters will be underlined.

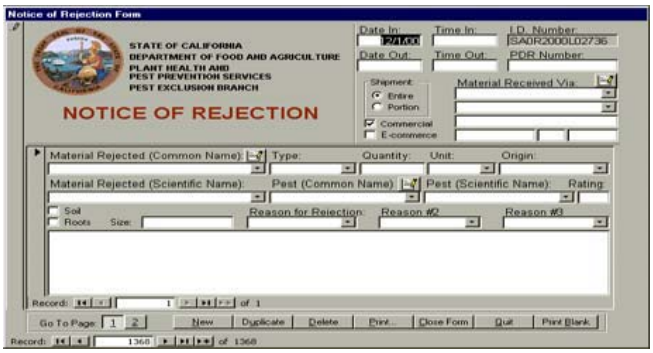
MAIN MENU SCREEN
This is the first screen visible when the program is started. It allows navigation to all forms needed to operate the program. The main menu screen includes six buttons:

- **Add/Edit Notice of Rejection** – used to add a new rejection
- **Table Utility** – gives access to most of the utility tables (shipper, receiver, commodity, etc) as well as station configuration for the original setup.
- **Prepare e-mail** – used to prepare a file to send to Sacramento containing all rejections since the last time this button was used. This button should only be used when ready to send files to Sacramento.
- **Reports** - brings you to the menu of Reports available.
- **Quit Application** – This is the button with the arrow pointing out the door. Clicking it exits the program.

- **About Application** - This is the button with the question mark. Clicking it displays a window showing the version and help contact people.
- A single click with the mouse will cause any of these buttons to open their associated form. You may also use the underlined characters to open the forms (i.e. type "a" while holding down the key to open the "add new notice of rejection" form).

NOTICE OF REJECTION FORM -- PAGE 1

This form is used to enter a new NOR or edit an existing



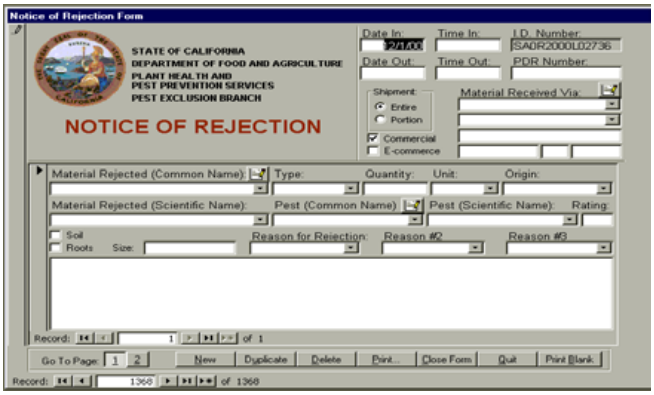
NOR. Press the Tab key to move forward from field to field and to move backwards on the form. This form is made up of two separate forms. The main rejection form contains the top half of page one and all of page two. The material being rejected is part of a subform allowing for as many materials per rejection as needed and includes the quantity, origin, pest, and reasons rejected.

The form initially goes to the last Notice written. To start a new blank Notice, click on the New button, near the bottom of the screen.

CONTROL BUTTONS ON THE REJECTION FORM

These buttons appear near the bottom of both pages of the form.

  - Go To Page: **1** – move to page one. The Page Up key will also get you there.
  - Go To Page: **2** – move to page two. The Page Down key will also move you to the second page of the form
- **New** - start a new blank form.
- **Duplicate** – move to a new input screen to add a new NOR. This is especially useful when entering a new NOR from the same shipper as the previous NOR.
- **Delete** – removes the current notice from the database. Note: If you delete a new or filled out Notice, the ID Number for that notice will not be used again.
- **Print** – sends to the default windows printer any rejections that have the "print this NOR" box checked.
  - **Close form** – closes the add NOR form and returns to the main menu screen.
  - **Quit** – closes the NOR program
  - **Print Blank Form** - creates a blank form that can be used in the field, or when a computer is not available.



RECORD NAVIGATION

Record navigation buttons appear at the bottom of the NOR form, as well as the Material Rejected subform.

- **First** button brings you to the first Notice or Material recorded.
- **Previous** button brings you to the Notice or Material immediately before the current one.
- Next button moves you to the Notice or Material following the current one. If you click Next when you are at the last Material record, a new Material record will be created. If you click Next when you are at the last Notice record, a new Notice record will be created, with a new ID Number. Note: If you delete a new or filled out Notice, the ID Number for that notice will not be used again.

- **Last** button moves you to the last Notice or Material record.
- **New** button creates a new Notice or Material record. If you create a new Notice, a new ID Number will be created. Note: If you delete a new or filled out Notice, the ID Number for that notice will not be used again.

The **Date In** field defaults to the current date. This should be changed if entering an NOR for a previous date. This field should show the date as mm/dd/yyyy. If only a two digit date is displayed, do the following. Click the "Start" button on the task bar. Click settings and control panel. Double click "Regional settings" click "Apply" then click "OK". You should now see four digit years in any of these date fields.

The time that the rejection was started can be entered into the **Time In** field. The date and time that the rejection was finished can be entered in the **Date Out** and **Time Out** field. These two fields can be filled out later, after the notice has been issued.

The program assigns an **I.D. Number**. The default number should be used unless the NOR is issued a final number in the field. See appendix #1 for a full description of how to create unique numbers in the field. It is important that this number be unique statewide.

Enter a **PDR number** if a pest was found. If multiple PDR's were used, enter one here and the remainder in the comment field.

Select **Entire** or **Portion** for the **Shipment** being rejected. If only a portion is rejected and the remainder is sent to destination, check the Portion box. The up and down arrow keys will also toggle between these two boxes.

If the shipper is a business, check the **commercial** box.

Check the **E-commerce** field if it is known that the shipment was ordered on the Internet.

Material Received Via: This should only be one of the categories listed in the pick list. This can be viewed by clicking the downward facing arrow to the right of the box.
The next box will only list addresses for the selected carrier. If Fed Ex was selected in the Material Received Via box, only Fed Ex addresses will show here. If the Fed Ex you want is not on the list, type the new entry (i.e. Fed Ex NewAddress). A message box will appear asking if you wish to add a new carrier. Select yes. Input the new address, city, state, and zip code for the Fed Ex NewAddress. Click the Close button. This will insert your new carrier in the form and add the new carrier to the list for future selection.

Material Rejected (Common and Scientific name): This field is for the material (commodity) name only. Do not add identifiers such as fruit, plant, seed, 10" potted, etc. This is the first input into the subform. You may input as many materials on each rejection as necessary. Select a material from either the common or scientific name lists. You may also type a name and as you type, selections will appear based on the letters you type matching an item on the list. If the material you are entering is not on the list, a message box will appear asking if you wish to add a new material. Click Yes. Fill in the required information and click the Close button. The material will be placed on the form and added to the list for future selection.

Type This is where you choose the type of material being rejected as one of the material types listed in the drop down list, such as fruit, plant, seed, other, etc.

Quantity Input only a number in this field. If "Type" in the above field is fruit, the quantity should be entered as pounds only. If the "Type" is plants, the quantity should be each so each individual plant is counted.

Unit This field reflects the unit for the number input into the quantity field.

Origin Enter the origin of the material. This is where the material was grown. This may or may not be from where the material was being shipped. If unknown, enter "unknown".

Pest (Common and Scientific name) and **Rating** these fields will normally not be field in at the time of the rejection. These are to be filled in once the pest is identified through the PDR number entered above.

Reasons for Rejection Up to three different reasons can be selected for each material being rejected. If more are needed, type them directly into the comment section. This list can not be added to. If you find a quarantine or reason for rejection not covered by a selection, add it to the comment section and send an e-mail to NORTransfer@cdfa.ca.gov including "new text" on the subject line.

Once a reason is selected from the list, the appropriate text appears in the comment section. Please review the text to make sure it is appropriate. You may edit the comment field if necessary. If two or more materials are rejected for the same reason, place the number in the appropriate field for each material, then delete the duplicate text from all

materials other than the first. In this way you will not have duplicate text on the same NOR but we will have the reason for each material rejected in the database.

NOTICE OF REJECTION FORM -- PAGE 2

Click on Go to page "2" button or press to move to the second page to enter shipper and receiver information.

Shipper Pick a shipper from the list or type the name. Names from the list will appear as you type characters. If the shipper is not on the list, a message box will ask if you wish to add a new shipper. Click the Yes button. Fill in the shipper information and click "close". This shipper information will be placed on the form and available on the list for future rejections. It is important that if you add a new shipper, you fill in as much information as possible including address, city, and zip code. If unknown, enter “UNKNOWN”.

Receiver Pick a receiver from the list or type the name. Names from the list will appear as you type characters. If the receiver is not on the list, a message box will ask if you wish to add a new receiver. Click the Yes button. Fill in the receiver information and click the "Close" button. This receiver information will be placed on the form and available on the list for future rejections. If is important that if you add a new receiver, you fill in as much information as possible including address, city, and zip code. If unknown, enter “UNKNOWN”.

Destination County This field is filled in automatically based the city of the receiver. You should check this field before proceeding to make sure it is filled in correctly. Not all cities within the state are listed so this field may be left blank and need to be entered manually.

Drivers Information If you are rejecting a truck, enter the drivers information. Select the driver from the pick list or type the name. Names from the list will appear as you type characters. If the driver is not on the list, a message box will ask if you wish to add a new driver. Click Yes. Fill in the driver information and click the Close button. This driver information will be placed on the form and available on the list for future rejections.

Officer Enter the name of the officer issuing the NOR. Either select from the list or type the name.

Notice to shipper Check each box next to options available to the shipper. If an option is not on the list, click Other then add the description (i.e. destroy).

Copies to Check the box of each person copies of this NOR will be sent. If an option is not on the list, click Other then add the description (i.e. USDA). State is not included on the list because all NOR's will be e-mailed to the state.

In the **Disposition** field, briefly indicate what was actually was done with the shipment.

Hours spent on NOR Enter the time spent filling in and working on this rejection. Include treatment or destruction time if appropriate. Do not include time spent on the original inspection.

The **E-mailed** check box field does not initially appear on the new form. If you return to this notice later, the box will be visible and unchecked. After you click the Prepare File button on the Prepare and Send E-mail form, the E-mailed check box will be checked. If you need to send a Notice again, uncheck the box on each notice that you want to resend, then go to the Prepare and Send E-mail form.

3.9.4 MONTHLY REPORT 4/4a INSTRUCTIONS

Submit Monthly - Original to Pest Exclusion, Sacramento
Copy to District Office

SECTION A: TERMINAL INSPECTIONS

Type - Inspections performed at specific terminal locations listed below:

- Post Office - Includes sectional center facilities and associate post offices
- UPS - United Parcel Service terminals
- Federal Express - Federal Express Service terminals
- Express Carriers - e.g., Airborne, DHL, Emery, Roadway, etc.
- Air Freight - Airports and at destination when the means of conveyance is by air
- Sea Freight - Coastal points of entry and at destination when means of conveyance is by sea Railroad - Inspections (primarily feed grain) when means of conveyance is rail (excludes gypsy moth)
- Gypsy Moth - Residence and storage locations on articles regulated by the Federal Domestic Gypsy Moth Quarantine
- Truck - Nursery stock, hay, grain, imported fire ant, seed, etc. when carried to the place of inspection by truck
- Other - Any quarantine inspections that do not fit into the categories listed above. For example, an interception of illegal or infested fruit at a high-risk market. Describe under "Comments" in Section F

Premise Visits - Number of visits to a facility or destination location to conduct an inspection. Record each visit separately. For example, a visit to a van and storage facility may involve four different shipments but would still be only one premise visit

Shipments Profiled - Postal, airfreight and express carriers, etc. - total number of shipments held for inspection. This includes shipments evaluated for content and required certification, shipments actually opened and examined, and those shipments forwarded to another location for inspection. *A shipment is defined as any quantity of plant products or other regulated items from a specific shipper to a specific consignee, held for inspection during any visit to the terminal. Individual shipments are typically identified by having a bill of lading, air bill, invoice, 008, package labeling, etc. One shipping document would therefore indicate one shipment.*

* For gypsy moth shipments, use this space to record the number of shipments released by phone or post card. Do not include gypsy moth shipments physically inspected.

Shipments Inspected - Postal, airfreight and express carriers, etc. - number of shipments actually opened and examined.
For gypsy moth shipments, this space should be used to record the total number of shipments physically examined.

Shipments Forwarded - The number of shipments allowed proceeding to another location for inspection under warning notice (blue tag) or by compliance agreement.
For gypsy moth, include shipments that were redirected to another county.

Notice of Rejection - Total number of rejection notices written.

Pest Interceptions - Number of live pest interceptions. If more than one type of pest is found in a shipment, count each species as an interception.

Hours - Use actual hours for each category of inspection (include travel time)

TOTALS - Summation of columns

SECTION B: ORIGIN CERTIFICATION

Federal and State Phytosanitary Certificates - Certification of plant material for export

Certificate of Quarantine Compliance - Certification of interstate plant shipments

Quick Decline Permit - Certification of intrastate citrus nursery stock shipments.

Compliance Agreements - Brown Garden Snail and other compliance agreements needed to meet shipping requirements (excludes nursery stock certificates).

Other - Certification of plant material other than previously described, e.g., certificate of cleanliness, celery certification, intrastate certifications.

Number of Inspections - Phytosanitary Certificates, Certificates of Quarantine Compliance and Quick Decline

Permits - number of inspections needed for the issuance of a certificate may necessitate multiple inspections per certificate issued.
Compliance agreements - number of premise inspections
Other - number of inspections

Certificates Issued - Phytosanitary Certificates, Certificates of Quarantine Compliance and Quick Decline Permits - number of certificates issued, may be multiple certificates issued per inspection.

** For Compliance Agreements, enter number of new agreements issued or renewed.
Other - number of documents issued.

Hours - Use actual hours for each category of inspection (include travel time).

TOTALS - Summation of columns.

SECTION C: FACILITIES AND PROPERTIES

Feed Grain and Screenings - Inspection of feed grain mills and storage facilities for approval status

Post Entry Properties - Facility and growing ground inspections for post entry quarantine requirements

Testing and Research - Inspections and follow-up visits for specialized facility permits

High Risk Markets - Visits to ethnic or other specialty markets to inspect for illegal host material. List any rejections or pest interceptions under "Other" in Section A and describe under "Comments" in Section F. A "Notice Of Violation" should be issued and listed in Section D.

Frequently Inspected Facilities - List the number of premises visited that are not addressed elsewhere on Report 4.

TOTALS - Summation of inspections/monitoring and hours columns.

SECTION D: ENFORCEMENT ACTION

Investigations - List individual investigations only once on a Report 4

Notice of Violations, Compliance Hearings - These are categories of escalating enforcement. Indicate the number issued/conducted.

Administrative and/or Court Actions - Applies to administrative fines (civil action) and criminal court actions. Indicate the number issued or completed.

TOTALS - Summation of number issued and total hours spent for all these actions.

SECTION E: PROGRAM SUPPORT ACTIVITIES (Completion of this section is optional.)

Activities - Narrative section to describe supervisory/biologist activities and clerical support for all exclusion functions. Includes budgeting, planning, training, public relations, computerization, and other non-administrative overhead activities.

Professional - Support Activities performed by supervisors/biologists/inspectors.

Clerical - Activities performed by clerical personnel.

TOTALS - Summation of direct and support hours.

SECTION F: COMMENTS - Workload trends and appropriate explanations.

TOTAL EXCLUSION HOURS:
Field/Enforcement - Total of hours minus time spent on program support activities.

Program - Total of all hours spent on Pest Exclusion Activities.

3.10 CONTRABAND DISPOSAL

The risk of spreading pest infestations continues up to and including the final disposition of the contraband. This can include but is not limited to spoiled, discarded, or confiscated fruit fly hosts and fruit processing wastes; infested soil, potting material, and nursery stock; ballast, dunnage, shipping crates or other packing materials; and any organic or inorganic products deemed infested.
Contraband disposal can be accomplished by:

- Autoclaving/sterilization
- Burying (on site or in an approved landfill)
- Burning
- Freezing
- Fumigation
- Grinding
- Irradiation

3.11 COMMODITY TREATMENT

Specific commodity treatment needs are outlined in CDFA's Commodity Treatment Manual (*login Access required!).* It is complementary to the USDA/ APHIS/ PPQ Treatment Manual.

SECTION IV: SPECIAL COMMODITY INSPECTIONS

4.1 INTRODUCTION

Agricultural commodities transiting in California are produced in:

- California
- Other locations

Inspections are either Quarantine or Origin Certification Inspections.

Quarantine Inspections are in place to ensure that shipments not accompanied by Nursery Stock or Origin Inspection Certificates are free from serious agricultural pests/diseases to the state. The goal of this inspection is to prevent the introduction of pests or diseases into an area where it does not already occur or where there is suppression or eradication of the pest or disease.

Origin certification inspections are done to clear commodities from California as free from pests or diseases of concern to other destinations. The destinations could be:

- Intra-state - County inspects
- Inter-state - CDFA, County inspect
- International - USDA, CDFA, County inspect

The following Section outlines procedures be used as guide for the quarantine inspections and for determining compliance with nursery stock pest cleanliness, labeling, quality standards and compliances to set programs.

4.2 QUARANTINE INSPECTIONS

4.2.1 AIRPORT AND MARITIME INSPECTIONS

A. AIRPORT INSPECTIONS

Domestic commercial aircrafts flying to California airports represent a pathway through which exotic pests can be introduced into California. Pests can be introduced via:

- Air cargo
- Passengers
- Airline crews
- Improper handling of food stores and garbage.

CDFA or county biologists have the following duties and responsibilities during airport exclusion activities:

- Inspect cargo
- Board aircrafts
- Issue and correct violations
- Issue and update compliance agreements
- Inspect catering services

NOTE: Passengers on some domestic flights are not subject to agricultural inspections at the time of their arrival at

California airports. However, passengers boarding planes in Hawaii to California must undergo agricultural inspection by Hawaiian Department of Agriculture.

CARGO INSPECTION

Domestic cargo is inspected upon arrival by county agricultural inspectors. Inspections are typically focused on high-risk items such as nursery stock, fruits (papayas, mangoes) and cut flowers arriving from Hawaii, Florida or Texas.

BOARDING AIRCRAFTS

CDFA inspectors can board domestic aircrafts after passengers have disembarked. The purpose is to make sure that cleaning or aircraft crews are not making personal use of food stores or removing fruits and vegetables from aircrafts. Inspectors also collect any fruits or vegetables that may have been left behind in passenger sections and make sure that these are properly disposed of in a quarantine manner. Neither passengers nor their luggage are inspected.

INSPECTING CATERING SERVICES

During inspection of catering services, CDFA inspectors make sure that international and domestic food stores removed from aircrafts are not commingled; check on proper functioning of the compacter (i.e.; area around compacter must be free of debris compacter ram is closed). Inspectors also check cooking charts to make sure that proper temperatures have been used to cook garbage. California law requires that cookers reach temperatures of 212 degrees Fahrenheit for two hours. Use Pest Exclusion Catering Services Inspection form (Form 66-034) to properly check on all caterer activities. A copy of the form is provided.

CORRECTING AND ISSUING VIOLATIONS

When violations are noted, a Notice of Violation, Pest Exclusion Form 66-094 is issued describing the type of violation and how and when it should be corrected. Both the inspector and manager of the facility must sign the form. The USDA office is notified of the infraction and provided with a copy of the Notice of Violation. It is advisable to periodically perform catering services inspections together with USDA inspectors.

ISSUING AND UPDATING COMPLIANCE AGREEMENTS

Compliance agreements are issued and updated as needed. This should always be done jointly with USDA inspectors. Compliance agreements are signed by both catering services as well as with businesses authorized to remove and transfer garbage from aircrafts.

B. MARITIME INSPECTIONS

INTRODUCTION

Vessels arriving California ports from either foreign destinations or from other states have long been recognized as one of the pathways through which exotic pests could be introduced to California. Vessel inspections should always be done together with enforcement of California vessel and aircraft regulations (refer to Food and Ag Code, sections 16001-16006, 16051, 16101, 16151-16154).

CDFA or county inspectors should focus on boarding the following vessels:

- Second port-of-calls, vessels that have originated in foreign ports but already have been at some other US port
- Coastwise vessels arriving from outside of California like Oregon or Washington
- Any vessel not boarded by USDA

Activities performed during inspections:

A. Gathering information
B. Inspecting galley, dry storerooms, and quarters
C. Inspecting conditions of the garbage containers and for other garbage violations
D. Sealing stores

A. GATHERING INFORMATION

Locate the chief steward or cook and get information needed for filling out Pest Exclusion Form 66-036. The information on foreign ports visited during the voyage can help assess the areas in which to focus your inspection. During your discussion with the chief steward/cook, you should also inform him of the garbage regulations to be observed while in port.

B. INSPECTING GALLEY AND STORES

Inspect and note the quantity and origin of all fresh fruits and vegetables. Especially note all fruits and vegetables that originated from areas infested by any fruit fly. Inspect a sample of the fruits and vegetables and look specifically for any signs of insect infestation or, in the case of citrus, for symptoms of citrus canker or citrus black spot. Inspect and note the quantity of restricted or prohibited fruits or vegetables. For guidelines, you can check USDA's Non-propagative Fruits and Vegetables Manual. During inspection of dry stores, look for signs of insect infestations like cast skins or larvae. While inspecting quarters, check for prohibited pests and high-risk plants or cut flowers used as the ship's decorations.

C. INSPECTING GARBAGE

Inspect the deck area to check conditions of garbage containers. The containers should be inside the railing, leak proof and covered. If any of these conditions are not met, issue a Vessel Garbage Violation using, Pest Exclusion Form 66-094. Also inform USDA's office about the violation issued.

D. SEALING STORES

Sealing stores is a safeguarding practice that prevents the use of a commodity aboard a vessel while in the US territorial waters. All fruit fly host materials are sealed in vessel stores. If only a small amount of this material is found, give the chief steward an option to destroy the material. In this case you may assist by placing it in a plastic bag and disposing of it in a quarantine manner. Make a note of it on your Pest Exclusion Form 66-036

4.2.2 TERMINAL INSPECTIONS

The "Terminal Inspection Act" of March 4, l9l5, as amended l936, authorizes the states that comply with the provisions of the Act to inspect plants and plant products moving in the mails. If a shipment is found infected with injurious pests, the State Plant Inspector may require the shipment to be treated. If it is incapable of satisfactory treatment or in violation of state or federal plant quarantines, shipment may be returned or destroyed. Instructions to postmasters for returning such parcels are set forth in Section 431.266 of the Postal Operations Manual.

STATE TERMINAL INSPECTION (Reference: (Act of Mar. 4, l9l5 c. l44, 38 Stat. ll3; June 4, l936, c. 495, 49 Stat. l46l (7 United States Code, l66)).

When any state shall provide for terminal inspection of plants and plant products and shall establish and maintain, at the sole expense of the state, such inspection at one or more places therein, the proper officials of said state may submit to the Secretary of Agriculture a list of plants and plant products and the plant pests transmitted thereby, that in the opinion of said officials should be subject to terminal inspection in order to prevent the introduction or dissemination in said State of pests injurious to agriculture. Upon his approval of said list, in whole or in part, the Secretary of agriculture shall transmit the same to the United States Postal Service, and thereafter all packages containing any plants or plant products named in said approved lists shall, upon payment of postage therefore, be forwarded by the postmaster at the destination of said package to the proper State official at the nearest place where inspection is maintained. If the plants or plant products, including seeds are found upon inspection to be free from injurious pests and not in violation of a plant quarantine law or plant quarantine regulation of the United States Department of Agriculture or destination state pertaining to such injurious pests, or if infected shall be disinfected by said official, they shall upon payment of postage therefore be returned to the postmaster at the place of inspection to be forwarded to the person to whom they are addressed; but if found to be infected with injurious pests and incapable of satisfactory disinfections or in violation of a plant quarantine law or plant quarantine regulation of the United States Department of Agriculture or of the state of destination pertaining to such injurious pests, the State inspector shall so notify the postmaster at the place of inspection who shall promptly notify the sender of said plants or plant products that they will be returned to him upon his request and at his expense, or in default of such request that they will be turned over to the state authorities for destruction.

Marking

It is unlawful for any person, firm or corporation to deposit in the United States mails any package containing any plant or plant product addressed to any place within a state maintaining inspection thereof, as the Postal Inspection Act prescribes punishment by fine for whomever fails to sends a package without plainly marking so that its contents may be readily ascertained by inspection of the outside. The United States Postal service is authorized and directed to make all needful rules and regulations for carrying out the purposes of the Act.

USPS PUBLICATION 14

A. Section V. Disposition of Infected Shipments

When an inspector finds that plants or plant products are infested or infected with injurious insects or diseases, and are incapable of satisfactory treatment, or found plants moved in violation of a plant quarantine law or regulation of the U.S. Department of Agriculture or of the state of destination pertaining to such injurious pests, parcels will be returned to the sender and payment of postage for return collected on delivery. If the sender has marked the parcel to be abandoned, if undelivered, the package will be turned over to state authorities for destruction.

B. California – Plants and plant products subject to inspection

All florists' stock, trees, shrubs, vines, cuttings, grafts, scions, buds, fruit pits and other seeds of fruit and ornamental trees or shrubs, and other plants and plant

products in the raw or unmanufactured state, and vegetable and flower seeds.

SOME TERMINAL INSPECTION PLACES IN CALIFORNIA*

Alhambra	Oakland	San Francisco
Bakersfield	Palm Springs	San Jose
Eureka	Pasadena	San Rafael
Fresno	Redding	Santa Ana
Inglewood	Reno, Nevada*	Santa Ana
Long Beach	Sacramento	Santa Barbara
Los Angeles	Salinas	Santa Clarita
Marysville	San Bernardino	Santa Rosa
Mojave	San Diego	Stockton
Oxnard		

*Packages sent to some other points in California are inspected here.

C. Insects

Bees are acceptable in the continental surface mails, when shipped in accordance with Federal and State regulations to assure that they are free of disease. Packages of honeybees must bear special delivery or special handling postage. Only queen honeybees may be shipped by aircrafts.

Post Offices that cannot provide a suitable inspection places are required under the Terminal Inspection Act to forward plants and plant products to the proper State official at the nearest place where inspection is maintained. Terminal postal inspections are now conducted in Postal Sectional Centers. Any package or shipment that has not been inspected that arrive at associate post office locations will be returned by the U.S. Postal Service to the sectional center for agricultural inspection.

Exception: Depending on local needs and priority of enforcement activities, County Agricultural Commissioners are authorized to inspect parcels which may contain plants or soil at associate post offices. When such inspection is to be conducted at an office other than the Postal Sectional Center, the local County Agricultural Commissioner will first notify the Postmaster at the associate post office and establish a frequency for these inspections. Associate post offices, which are not notified, will continue to send parcel post subject to agricultural inspection to their Postal Sectional Center.

Postmasters should be notified when packages are not held for inspection, so corrective measures may be taken to assure all future packages containing plant material will be held for inspection.

FOREIGN PLANT MATERIAL

Occasionally County Agricultural Commissioners have found foreign parcels with plant material moving in the mail with no evidence that contents had been inspected and released by a USDA plant quarantine inspector. County Agricultural Commissioners are not authorized to pass upon the admissibility of such into the United States.

All parcels not indicating inspection by U.S. authorities should be returned to one of the locations listed below:

Southern Area (Districts V & VI)
USDA, APHIS - PPQ
11840 South La Cienega Blvd.
Hawthorne, California, 90250

Central and Northern Area (Districts I - VI)
Plant Inspection Station
USDA, APHIS _ PPQ
Oyster Point Blvd. Suite 2
South San Francisco, California, 94080

Treasury Decision 48181, entitled "Importation of Plants and Plant Products by Mail" makes it mandatory that postmasters at post offices where no Customs Officer is located shall forward such packages under penalty envelope to the Collector of Customs at the most accessible of the post offices noted above for appropriate treatment.

FEDERAL EXPRESS (FedEx), UNITED PARCEL SERVICE (UPS) AND OTHER PRIVATE CARRIERS TERMINAL INSPECTION

FEDERAL EXPRESS (FedEx)

Parcel inspection at FedEx operating locations is conducted as per protocol outlined in a Memorandum of Understanding between California Department of Food and Agriculture and Federal Express
The following stipulations were agreed upon to transport plant material into and within California by Federal Express, and the holding for inspection of such material.

1. Federal Express will include the following language in the Service Guides available to their regular customers:" Plant and plant materials can be shipped only in accordance with applicable state and federal law. Packages containing these items may be inspected by appropriate agencies and may be delayed".
2. All Federal Express operating locations in California will advise the appropriate county agricultural commissioner's office of the arrival of packages marked or labeled to indicate that they contain plant materials that do not bear evidence of previous

inspections by the California Department of Food and Agriculture or its designee. Except by prior arrangement, agricultural inspections shall be performed during normal business hours for the Agricultural Commissioner.

3. Inspectors from the Agricultural Commissioner's offices may enter the locations for the purposes of inspecting plant materials. However, it is also understood that Federal Express is a carrier engaged in express overnight transportation of documents and goods. The parties agree that any county agricultural commissioner's inspection shall be conducted during normal business hours and in a manner that is consistent with the operational needs of Federal Express. If an inspection of packages containing plant materials has not been completed prior to vehicle or aircraft departure, the packages awaiting inspection may be retained by the county agricultural commissioner's office. However, package retention will not interfere with vehicle or aircraft movements.
4. Federal Express will furnish a suitable space with adequate lighting for conducting inspections of the packages. Inspections will be conducted as soon as possible upon notification of receipt.
5. Federal Express understands that violation of Food and Agriculture Code can result in penalties up to $ 10, 000 for each violation, in addition to criminal penalties. Identification of any exotic pest infestation in California, as a result of FedEx's failure to comply with Food and Agricultural Code sections could result in penalties of up to $25,000 for each violation per section 5028 of Food and Agriculture Code.

UNITED PARCEL SERVICE (UPS)

Parcel inspection at UPS operating locations is conducted as per protocol in a Memorandum of Understanding between California Department of Food and Agriculture and United Parcel Service. The following is a mutually agreed upon protocol for the safe transportation of plant materials into, and within, California by United Parcel Service and the holding for inspection of such materials at UPS operating locations.

1. United Parcel Service will feature an article on the California Department of Food and Agriculture inspection requirements in its company newsletter, Roundups, at least semi-annually. The newsletter is provided to UPS regular customers. The article will appear in the Fall and Spring issues.
2. United Parcel will supply blue sticker labels that read "Warning! Plant Material- Hold for Inspection by the County Agricultural Commissioner", to all regular customers who ship plant material. These shippers will be instructed to place a sticker alongside the address label on each package of plant material moving into California. Compliance to this agreement by UPS will be monitored regularly.
3. United Parcel Service will furnish a supply of blue sticker labels to every United Parcel Service receiving location to which packages are brought for shipment by occasional shippers who do not utilize pickup service. If the nature of the contents is not known, United Parcel Service personnel will ask each shipper if the package contains plant material. On packages containing plant material, United Parcel Service personnel will affix the blue sticker label adjacent to the address label. Customer counters in Hawaii and Puerto Rico will display posters stressing the need for customers to label parcels, which contain agricultural products.
4. All United Parcel Service operating locations in California will set aside all packages bearing the blue warning notice sticker label all packages which are otherwise marked or labeled, indicating they contain plant material, or are reasonably expected to contain plant material; and will advise the appropriate agricultural commissioner's office of the arrival of packages that do not bear evidence of previous inspection by the California Department of Food and Agriculture or its designee.
5. The California Department of Food and Agriculture does not require the use of short form manifest to declare plant materials entering California
6. Personnel at California border agricultural inspection stations will release United Parcel Service trucks without completing forms to notify county agricultural commissioners of plant materials being transported into California.
7. After notifying United Parcel Service, inspectors from CDFA and/or County Agricultural Commissioner's offices may enter UPS locations for the purposes of inspecting plant materials. Inspectors will make every effort to notify UPS prior to arrival to minimizing the impact of UPS staff.
8. It is understood that UPS is a carrier engaged in the expedient delivery of documents and goods. County Agriculture Commissioner's inspection, except by alternate arrangement, shall be conducted during normal business hours and in a manner that is consistent with the operational needs of UPS. If an inspection of packages containing plant materials has not been completed prior to vehicle or aircraft departure, the packages awaiting inspection may be retained by Commissioner's office. However, retention will not interfere with vehicle or aircraft movements.
9. United Parcel Service will furnish a suitable space with adequate lighting accessible to the agricultural inspector, where packages can be held, and easily

inspected. Inspections will be conducted as soon as possible upon notification of receipt.

10. United Parcel Service will provide training and instructions to new employees upon hiring, and retrain all other employees, at least once per year on the importance of holding plant material, how to identify parcels that may contain plant material; use of blue tags, where to hold the plant material, and who to contact for inspection. Training of package handlers and drivers in California will be particularly emphasized.
11. United Parcel Service will participate in periodic quality control tests that will be coordinated by CDFA. The periodic tests will involve identifying live plant shipments destined to California locations to see if UPS employees are complying with the protocol. The California Department of Food and Agriculture or County Agricultural Commissioner may send packages without prior notification.
12. United Parcel Service understands that violation of Food and Agriculture Code can result in penalties up to $ 10, 000 for each violation, in addition to criminal penalties. Identification of any exotic pest infestation in California, as a result of United Parcel Service's failure to comply with Food and Agricultural Code sections could result in penalties of up to $25,000 for each violation per section 5028 of Food and Agriculture Code.

OTHER PARCEL CARRIERS FOR MEMORANDUMS OF UNDERSTANDING (MOU)

- ONTRAC

4.2.3. FEED GRAIN APPROVAL

Any person receiving or bringing feed grain, or any shipment thereof into any county or locality in California from another county or locale within the state, shall immediately notify the County Agricultural Commissioner of the arrival of such grain, and hold the same for immediate inspection, without unnecessarily moving or placing such grain where it may grow or be disseminated or contaminate clean grain. A commissioner may waive the requirement of:

1. Notification of arrival and holding for inspection at destination on shipments which arrive accompanied by a certificate of cleanliness
2. Holding uncertified shipments for inspection upon being notified by the receiver or transporter of the arrival of any such shipment destined to an approved mill or establishment. Such mill shall be capable of processing or storing feed grain infested with weed seed pests in such a manner that no contamination of clean grain or dissemination of the pests would result. The Secretary, CDFA issues a list of approved mills and establishments showing their locations, weed seeds pests each may receive, and the approved methods of handling infested feed grain.

DEFINITIONS

"**Feed Grain**" – the whole seed or seed-like fruits of grain, including wheat, barley, oats, rye, corn, sorghum, for any use other than planting.

"Restricted weed seed pests liable to be disseminated through the movement of feed grain" are viable seed or propagule of the following weeds:

Agropyron repens, quackgrass
Alhgi pseudalhagi, camelthorn
Cardaria chalepensis, lens-podded hoary cress
Cardaria draba, heart-podded hoary cress
Cardaria pubescens, globe-podded hoary cress
Centaurea repens, Russian knapweed
Centaurea solstitialis, yellow starthistle
Cirsium avense, Canada thistle
Convolvulus arvensis, field bindweed
Euphorbia esula, leafy spurge
Gaura coccinea, scarlet gaura
Gaura odorata, scented gaura
Gaura sinuata, wavyleaf gaura
Helianthus ciliaris, blueweed
Lepidium latifolium, perennial pepperweed
Rorippa austriaca, Austrian fieldcress
Salvia pratensis, meadow sage
Setaria faberi, giant foxtail
Solanum carolinense, Carolina horsenettle
Solanum elaeagnifolium, white horsenettle
Sonchus arvensis, perennial sowthistle
Sorghum halepense, Johnsongrass

STANDARDS OF CLEANLINESS

To be eligible for certification, feed grains shall be free of mature seed or propagule of restricted weed seed pests that are liable to be disseminated through the movement of feed grain. A tolerance of up to five (5) seeds each of Johnsongrass, field bindweed, and yellow starthistle, per pound of feed grain examined, is allowed.

Certificates of cleanliness may be issued by Commissioners whenever adequate inspection has been made of the field or when samples are drawn from any conveyance, mill, storage facility and it has been determined that the feed grain meets the standard of cleanliness. Continued identity of all such certified feed grain shall be maintained to prevent commingling un-inspected or infested feed grain.

DISPOSITION OF INFESTED SHIPMENTS

Any shipment of feed grain found to be infested with the seed of any pest not of common occurrence in the county or locality into which such shipment is brought is subject to the provisions of sections 6341 to 6344, inclusive, of the Food and Agricultural Code. With the approval of the commissioner at destination, such shipments may be allowed to move in quarantine to an approved mill or establishment.

Approval of Feed Grain Mills and Storage Facilities

The following is a guide to base approval of feed grain mills and storage areas under the feed grain and seed screening and cleaning regulations.

An agreement setting forth conditions under which the mill is to operate should be completed, signed by the mill owner or operator, approved and filed with the County Agricultural Commissioner. When a mill is found to be negligent in its operation, it may be necessary to revoke the approval. In such cases, it is desirable to have evidence of a written agreement on file. Notice of action by the commissioner, either approving or revoking prior approval, should be forwarded to the appropriate district biologist.

Approved mills should be inspected a minimum of once a year to determine if approval should be continued. Samples from approved mills should be drawn at least twice a year to determine effectiveness of processing.

Mills with a history of processing problems should be inspected and samples drawn on a frequent basis.

The following points should be considered when inspecting a mill for approval:

1. UNLOADING FACILITIES

Truck and/or rail car unloading facilities differ at each mill or unloading site. It is necessary to evaluate each according to its merits. The unloading or "cut-in-bins" should be located in a favorable location and preclude opportunity for restricted weed seeds dissemination. This should be a covered area utilizing part of the mill building, or similar arrangement affording adequate protection whenever necessary. All empty trucks or rail cars shall be clean before leaving the mill unloading site.

2. STORAGE FACILITIES

Bins that have excessive cracks or crevices are not considered satisfactory for clean material when they have been previously used for storage of infested grain or screenings.

Bins with a smooth inside surface may be used for storage of clean material after they have been used for storage of contaminated material. Such bins must be cleaned to the commissioner's satisfaction after the conditioned material has been removed.

Contaminated grain or screenings should be segregated from clean grain or seed; or all grain or seed in the storage facility is required to be held in quarantine. Determine that the storage facility can be tightly sealed and require mill management to clean up any weed seed contamination that might be present. Many mills have operated successfully by using a bin which has been set-aside as a "quarantine bin" to receive contaminated grain. Other mills have adopted an authorized treatment for all incoming shipments. Mills, which handle both clean and infested grain simultaneously, must satisfy the commissioner that they are capable of maintaining identity of all feed grain and seed so segregation can be maintained.

Mills may be required to store infested grain being exported. The commissioner should require safeguards that assure proper handling to maintain continued identity.

3. CLEANING

Mills designed to remove restricted weed seed pests from feed grain should be equipped with adequate cleaner. Most mills are equipped with screen or sieve-type cleaners that separate seed size and weight. Points to observe during the operation are the rate of feed, variable speed, pitch of the screens, size and shapes of the screens, amount of suction or air employed, operation of the tamper, brush, or other mechanisms used to keep the sieves open. Some mills have an additional disc mill to remove weed seeds to meet a zero tolerance.

4. GRINDING GRAIN

Hammermills and attrition mills are used to grind weed seeds, and contaminated grain to destroy viability of weed seeds. The size of the screen is an important factor in the grinding operation. Most of the restricted weed seeds found in association with feed grain are of the larger type. A (5/64 inch) screen may be used provided the hammers or grinding mechanisms are not worn. It is possible for worn hammers running at a high rate of flow to push whole seeds through the screen. A #4 (4/64 inch) and a #3 (3/64 inch) size screen are preferable, but the disadvantage of the slow rate of flow and the fine texture of the finished product often time is objectionable to the mill operator.

5. GRINDING SEED SCREENINGS

Screenings generally require a #3 size screen due to the presence of many of the smaller size weed seeds. The condition of the hammers and screens should be checked periodically.

6. HEAT

Steam heating apparatus must apply an amount of live steam to the grain for the full length of the heating unit to assure a constant mass temperature of no less than 205°F. The heating unit must be equipped with devices which will restrict the flow of grain to assure that all grain is exposed to the minimum mass temperature for no less than 3-3/4 minutes.

Dry heating apparatus must apply an amount of heat within the dehydrator or heating unit to assure a constant mass temperature of no less than 260°F. The flow of material must be regulated so that all grain passing through the dehydrator will be exposed to the minimum mass temperature for no less than five minutes.

7. PELLETIZING – HAY AND/OR GRAIN

Hay or grains passing through machines are exposed to the heat for 30 seconds. Temperature in the steam jacket should be no less than 190°F. An additional 10°F will occur when the feed is pressed through the die. The embryo of the seed must attain a temperature of 180°F to render it nonviable.

As a condition of approving steam or dry heat processes, the heating equipment should be inspected periodically to determine that the mill meets the requirements. An open-faced thermometer should be permanently installed in the upper half of the steam jacket for the benefit of the mill operator and inspector.

8. SAMPLING

Before approving a feed mill, a finished mill product sample should be sent to the Sacramento Seed Laboratory for germination testing and approval withheld until results are received. Additional samples should be drawn periodically.

Pest Exclusion Form 65-020 should accompany the sample. In "Remarks" section, for processed material, please request "check for weed seed viability" or "Mill approval-check for weed seed viability"; for unprocessed material (seed that has not been rolled, ground, cracked, pelletized, etc.), request "check for noxious weed seeds" or "check for prohibited or restricted noxious weed seed" or "check for noxious weeds." Samples should not be submitted in plastic bags and should be submitted without exposing sample to extreme heat or moisture.

9. EQUIPMENT

The following equipment should be available for mill approval: temperature thermometer and crescent wrench, screen gauge, trier probe, sampling bags for laboratory sample, grain dockage sieves, and proper forms.

FEED GRAIN SHIPMENTS THROUGH BORDER STATIONS

Border inspection stations inspect feed grain arriving from other states for the presence of restricted weed seed pests as set forth in the feed grain regulation.

Shipments destined to approved mills and establishments are allowed to proceed to destination under quarantine without weed seed inspection. All other shipments are inspected at the border station for restricted weed seeds. Shipments that meet the standard of cleanliness are released. Shipments failing to meet the standard of cleanliness are rejected or diverted under quarantine to an appropriate mill.

SEED SCREENINGS

Food and Agricultural Code section 3557 empowers CDFA Secretary to promulgate regulations pertaining to seed screenings and cleanings. The purpose is to prevent dissemination of pest seeds through movement of seed screenings or cleanings from crop seed.

SOME SPECIFIC DEFINITIONS

Screenings: seed cleanings from crop seeds, and includes products or materials removed from crop seed by any means whatsoever.

Pest: any form of vegetable life that is or is liable to be dangerous or detriment the agricultural industry of the state.

Crop Seed: seed or seed-like fruit of grain, beans, flax, beets, onions or other crop, whether or not intended for planting purposes.

Processing: cleaning, grinding, or other treatment, including destruction, screenings to prevent the dissemination of seed of any pest or render the seed of pest present or liable to be present incapable of reproduction.

INSPECTION

If upon inspection the county agricultural commissioner finds the screenings to:

1. Be free of seed of any pest; and the screenings will be utilized in his/her county, s/he shall release screenings with an inspection and release stamp. The lot of screenings shall be marked and segregated in order to maintain its identity until final disposition.

2. Contain the seed of any pest, s/he shall notify the person in possession that such screenings are subject to the processing requirements as set forth in Sections 7571 to 7581, inclusive, of the Food and Agricultural Code.

APPROVED PROCESSING MILLS

1. Any person operating a mill or establishment that processes screenings containing seed of any pest may apply to the commissioner for approval of the equipment and operational procedures. Approval for processing shall be granted whenever the commissioner determines that the equipment is adequate and is operated in such a manner, to have the screenings without risk of disseminating the seed of any pest or to render the seed of any pest incapable of reproduction.
2. Approval may be withdrawn at any time upon determination by the commissioner that there are deficiencies in the terms of approval.

4.2.4. GYPSY MOTH INSPECTION PROCEDURES

Gypsy moth (*Lymantria dispar*), is a pest regulated under Federal Domestic Quarantine 301.45. Requirements under all other applicable Federal domestic plant quarantines must be met to allow the movement of regulated articles. Such articles are:

1. Trees without the roots, and shrubs with roots and persistent woody stems, unless they are greenhouse grown throughout the year.
2. Any other products, articles or means of conveyance, of any character whatsoever, determined by an inspector that any life stage of gypsy moth is in proximity to such articles. The articles present a high risk of artificial spread of gypsy moth infestation and the person in possession thereof has been so notified.

Restrictions to interstate movement shall include regulated articles and outdoor household articles (OHAs) from generally infested areas.

OHAs shall not be moved interstate from any infested areas into or through any area that is infested to California without a certificate or OHA document.

The following outlines procedures followed at border stations and at the county of destination for the handling of gypsy moth regulated articles entering California from infested areas.

BORDER STATION PROCEDURES

All shipments of household goods from gypsy moth regulated areas are issued a Rejection Warning Hold Notice (Form 66-008A) at the border stations. The final determination of the content of the shipment and inspection for gypsy moth is left to the destination county agricultural commissioner.

Effective June 1, 1985, any shipment containing OHA's from a federally designated high-risk gypsy moth area that arrives at a California agricultural inspection station without a certificate of inspection, either an official OHA document or a self inspection document, will result in the issuance of a citation to the driver. Such shipment is also sealed at the border station before proceeding to its destination.

I. Recreation Vehicles

1. Negative finds – released
2. Positive finds – visible contamination removed. Vehicle cleaned with high pressure – hot water unit and released.

II. Household Goods

A. **Transported by commercial carrier** – 66-008A issued after positive destination address. This information is transmitted daily by FAX to the destination county commissioner.

B. **Transported by individual / private carriers**

1. Negative finds – released
2. Positive finds – all contamination removed (may be steamed cleaned) – released.
3. If unable to adequately inspect – Form 66-008A is issued to the destination county after positive destination address. This information is faxed to the destination county.

FAX TRANSMISSIONS

Shipments on which Rejection Warning Hold Notice (Form 66-008A), has been written are compiled by border station personnel daily. Station number, consignee's name, address, telephone contact numbers, origin state, presence or absence of an inspection document, whether from a low risk or high risk area and the presence of OHAs are all recorded and faxed to the destination county. A summary copy is also sent to Pest Exclusion –Exterior in Sacramento at the end of the day. Border stations also faxes information immediately on sealed vans to the destination county.

CITATION / SEALING OF TRUCKS

Border inspectors will issue a citation to drivers hauling OHAs without inspection documentation, if the OHAs were

from a high-risk area and there was risk of exposure to gypsy moth infestation.

Citations for non-certified loads are issued under California Food & Agriculture Code section 5346(b), Moving OHA in California from federally regulated gypsy moth area, (city, state) without certification. Trucks can be held at the border station for pending paperwork, so a citation can be avoided. Otherwise, the driver has no option but to accept the citation and sealing of the truck if s/he wants to move the shipment into California.

Only one citation is issued per truckload; however, there may be more than one violation for each citation. The 66-008S will reflect whether or not a citation was issued in the citation check box and the number of violations for each citation will be listed in the count block on the 66-008A.

County inspectors should request from the driver of the sealed van the manifest for each additional shipment remaining on the van. If other shipments are also in violation for not being certified, the van should be re-sealed by the inspector, and the destination county notified that the sealed van is en-route.

COUNTY OF DESTINATION PROCEDURES

A fax transmission is sent daily to each county in which a 66-008A was issued. The destination county should review the list for those shipments requiring immediate action (i.e. outdoor items from high-risk area).

I. Shipment Delivered to Residence

A. No outdoor items identified on Form 66-008A

- Telephone consignee to determine contents of shipment.
- If no outdoor items shipped – release shipment, fill in final disposition and date in the "Comments" section on the 66-008A. Information is then transferred to a database or spreadsheet for any later reference.

B. Contains outdoor items

- Contact consignee for an inspection appointment.
- Shipment is inspected and no gypsy moth life stage found – release shipment with the disposition recorded with date in the "Comments" section on the Form 66-008A. Information is then recorded in a database or spreadsheet for any later reference.
- Shipment is inspected and gypsy moth life stages found – See Procedures for Handling Gypsy Moth Finds (Viable and Non-Viable).

II. In Storage Shipments

Contact destination agent upon arrival of 66-008A for status check. We suggest keeping a file for each destination agent within the county. The 66-008A, can be filed by destination agent (storage company) until a final delivery is noted.

Contact each storage company by telephone every 10-15 days after initial contact to determine current status of shipment.

- Shipment delivered – obtain delivery information. If final delivery address is different than the one on the 66-008A, enter the final delivery address in the "Driver Instructions" section. Cross out incorrect address. Follow instructions in previous section I. Shipment Delivered to Residence for inspection instructions.
- Shipment has a future delivery date – make notation. Follow-up with phone call to consignee after delivery of shipment. See A above – Shipment delivered.
- Shipment is still in storage – note date contacted. Repeat every 10-15 days until delivery date is known or shipment cleared in storage. Refer to "Mortality timetable for in-storage shipments" in the Gypsy Moth Referral Program Procedural Manual to when shipments can be cleared. Shipments cleared in storage should have their 66-008A marked "Cleared in Storage" with the date, and the information entered in a database or spreadsheet for any further reference.
- Shipment in permanent storage – shipments of special risk should be inspected before containerization if at all possible. Refer to the "mortality timetable" mentioned above to see if further handling is necessary. If not, enter "Cleared in Storage" and the date on the Form 66-008A. The information can be entered in a database or spreadsheet for any further reference.

III. Military Household Moves

- Contact destination agent listed on Form 66-008A.
- If destination agent has no record of receiving shipment, contact the military installation listed on the 66-008A.
- If the military installation listed on the 66-008A has no record of the shipment, there is a complete listing of bases handling all military moves in a particular area (refer to the Gypsy Moth Referral Program – Procedural Manual).

IV. Shipments Diverted to County Not in Possession of Form 66-008A

Forward copy of the 66-008A by mail or fax to the county actually receiving the shipment. Enter county and date forwarded on the bottom of the 66-008A. Fax copy to Pest Exclusion, Sacramento.

Procedures for Locating Shipments

A. **Delivery Address Unknown:** If the delivery address and/or phone numbers are not available from the 66-008A, military or destination agent, or directory assistance, forward by fax or mail a copy of the 66-008A to Pest Exclusion District Office for tracing. The date the shipment was determined untraceable and the reason should be marked on the 66-008A. List efforts used in trying to contact the consignee. This will help avoid duplication of efforts. When an address or contact number is obtained, the Pest Exclusion District office will forward the copy of the 66-008A to the destination county, or perform the inspection of the shipment themselves.

B. **Delivery Address Known**: If consignee cannot be contacted within 2-3 days through contact phone numbers, directory assistance, military or destination agent, mail a letter or postcard to the consignee requesting they call the county agricultural commissioner. If consignee has not replied with 10 days, the inspector should visit the address and determine if the consignee has arrived and leave a note requesting they contact the agricultural commissioner. (Note: A residence visit may be used in lieu of the letter if so desired.) If the above measures fail to locate the shipment, forward a copy of the 66-008A to the Pest Exclusion District Office for tracing. Indicate on the 66-008A what measures were taken in attempting to contact the consignee. The information can be entered in a database or spreadsheet for any further reference.

Citations / Resealing/ Notice of Violation

Citations: Generally, all shipments from federally regulated gypsy moth areas which contain outdoor household articles must be accompanied by either:

1. An OHA Certificate issued by a federal, state, or county agricultural official; or a commercial pest control applicator, or
2. **A self-inspection document.** If this requirement is not met, the driver of the truck will be cited at the border station. Trucks can also be held at the border for pending paperwork or violation. The citation number should be noted in the "Comments" section of the 66-008A and the driver is instructed to proceed directly to the destination address of the shipment in violation. The county of destination should be notified immediately, by phone or fax, of the pending arrival of the shipment. Time, destination address, trucking company and any other pertinent information should be relayed.

In most cases a citation does not result in a Notice of Violation. Destination county may charge the driver with the sealed shipment inspection.

Multiple Violations: For loads containing more than one shipment of OHAs in violation of 5346(b) California Food and Agricultural Code, the driver will have to choose which shipment he wants to deliver first, and then go only to that address without diversion.

Resealing: Seals are to be broken and resealed by a representative of the County Agricultural Commissioner and may not be broken by anyone else for any reason. County inspectors may be required to break seals for a delivery within their county and also to reseal trailers that have a remaining quarantine shipment destined to another county. The county inspector should call the next county's agricultural commissioner to give notice that the van is enroute, together with pertinent information about the shipment.

Notice of Violation: A Notice of Violation (NOV) will be issued to the driver if the van was sealed at the border and arrives with a broken seal. If broken seals are discovered while the driver is still present, the agricultural commissioner may issue the citation where there is cooperation on the part of the commissioner and the district attorney. NOVs issued in some counties will be referred to an Administrative Hearing – Notice of Proposed Action and could lead to a fine of up to $2,500.

A Notice of Violation will also be issued in those instances where OHAs are not declared when included among shipments of household goods form high-risk gypsy moth areas.

The State's copy of the Notice of Violation should be mailed to Pest Exclusion, Sacramento. A copy should also be sent to the District Pest Exclusion office.

Any driver who does not appear at the destination county with a sealed truck is in violation of California Food and Agriculture Code section 5346 (b). County officials should call their Pest Exclusion District Office. Pest Exclusion district office officials should contact the Pest Exclusion – Exterior Branch in Sacramento. Border stations can be notified of the truck and driver, so they may intercept the shipment. The moving company employing the driver should be notified to try and produce the truck and driver. A Notice of Violation can be given to the moving company employing the driver if culpable, and to the driver when found.

Possible prosecution is given to each county under the California Food and Agriculture Code section 5101.

Procedures for Handling Gypsy Moth finds (Viable and Non-Viable):

1. Issue a rejection notice. Border station inspectors may issue a rejection notice to commercial moving vans, or trucks at the border station when OHAs or the van itself are found with gypsy moth life stages. Border stations may elect to power clean the van or have the driver clean the van "out of state" and return for inspection and entry.
2. Issue a "Hold Notice" to hold materials on premises of consignees for all viable finds, and where viability may be in question (egg masses). Do not issue a "Hold Notice" to hold material of consignees when clearly a dead gypsy moth life stage has been found.
3. Check Form 66-008A for the presence or absence of an OHA document.
4. Submit a laboratory sample when evidence of any life stage is found, whether viable or non-viable. Use the following procedures when submitting egg masses:
   a. Use ¼ cup detergent solution (e.g. Tide) to one quart of water when removing egg masses. The detergent solution will not assure 100% mortality but will reduce the hazard of viable eggs falling from the egg mass during removal. Carefully remove egg masses and all parts.
   b. Place the egg mass in a dry container. Do not soak in detergent solution.
   c. If you can, using a dissecting scope, forceps and a pin, rupture a small number of eggs to determine if they are filled with fluid.
   d. Place the remaining egg mass in alcohol and send it to the lab.
   e. All specimens submitted in the manner described above will be identified as viable or non-viable by the lab.
5. Fill out a PDR on all gypsy moth specimens whether or not they appear to be alive. Before submitting specimens, assure that all life stages are dead. In the "Remarks" section of the PDR include the following information:
   a. If an egg mass, whether they were examined and filled with fluid.
   b. Border station name
   c. Form 66-008A number
   d. If OHA document was present or absent
6. Affix the gummed label from the PDR slip to a copy of Form 66-008A that is mailed to Sacramento.
7. Samples from shipments accompanied by the OHA document that are positive and viable for gypsy moth, a copy of the OHA document (if available) with PDR number should be sent to Pest Exclusion, Sacramento.
8. The Pest Exclusion Branch will notify USDA of the pest find and provide them with necessary information to disqualify the person or company that issued the OHA document.

Methods of Treatment

The finding of viable life stages of gypsy moth should be reported immediately to CDFA District biologists and/or Sacramento. Such finds can trigger quarantine actions. CDFA's Pest Detection and Emergency Project often carry out the treatments in coordination with county, State and USDA officials.

I. If viable gypsy moth life stages are found on outdoor household articles, in which all surfaces can be visually surveyed, the following treatment/ handling procedures should be adopted for each life stage:

   a. Egg Mass – use ¼ cup detergent solution (e.g. Tide) to one quart of water when removing egg masses. Carefully remove egg masses and all parts. The detergent solution will not assure 100% mortality but will reduce the hazard of viable eggs falling from the egg mass during removal. Egg masses must be put in alcohol to kill them completely before sending the sample to CDFA Plant Pest Diagnostic laboratory, Sacramento for identification/confirmation.
   b. Larvae – foliar treatments with *Bacillus thuringiensi (Bt) or* any CDFA approved treatment must be used.
   c. Pupae – Physically remove. All surfaces must be looked at closely to confirm that all pupae are removed.

II. If viable gypsy moth life stages are found on outdoor household articles in which all surfaces cannot be adequately visually surveyed, use a steam cleaning process or fumigate according to rates found in the Guide to Commodity Treatment in California.

Record Keeping

Keeping records of all Form 66-008A entering a county is important in the event gypsy moth is found. A database or spreadsheet should be kept which should include the following information:

1. Name of consignee
2. Address of consignee
3. Zip code (use www.usps.com) if not listed on Form 66-008A
4. Notice number
5. Date shipment arrived
6. Date of final disposition of shipment
7. Final disposition of shipment
   - Inspected
   - Cleared in storage
   - Cleared by phone

- Declared unable to find
- Declared unable to contact

Above information can be used to:
1. Plot recent consignee locations around a gypsy moth find site.
2. Determine gypsy moth detection trap placement.
3. Identify locations where consignees move to in a county or city, demographic trends
4. Destination points of consignees that refuse contact or inspection.

4.2.5. RED IMPORTED FIRE ANT INSPECTIONS - BEE COLONIES

BACKGROUND

Many agricultural crops in California such as almond orchards require commercial pollination by bees for viable economic production. There are limited local bee colonies in California to meet the need. Beekeepers from other states provide the extra colonies needed for pollination.

Migratory beekeepers come to California from three main geographical areas: Pacific Northwest, Northern Plains and Southeast/Gulf states. Shipments originating from RIFA infested Southeast/Gulf states present introduction with bee colonies.

Almonds are often treated with pesticide for a number of pests. For this reason, bees are not placed into the orchards until just prior to bloom. This varies with latitude and variety, but is generally from February through March. Beekeepers from colder regions bring their shipments into California before the onset of winter. For example, almost all bee colonies from the Dakotas arrive in California prior to Thanksgiving Day.

Normally these apiaries are "staged" in the foothill locations in the Coastal and Sierra Nevada mountain ranges. The areas offer numerous sites that are above the fog, secluded, and possibly afford some nectar flows. Bee colonies from warmer areas are generally shipped later, directly into the almond orchards. These shipments often begin in January and mainly enter the state through southern border stations.

For the reasons mentioned, bee shipments from areas other than infested states are low risk but not risk free. There are some occasions that beekeepers go great lengths to circumvent quarantine restrictions and could misrepresent gulf state bees as originating elsewhere. It is the policy of CDFA border stations to reject bee shipments if any species of fire ants are found. If no fire ants are found, the stations notify receiving counties of incoming bee shipments using a Form 66-008 quarantine warning notice regardless of the time of year or the declared point of origin.

INSPECTION PROCEDURES

It is the responsibility of the driver to contact the county and arrange for the load to be inspected prior to unloading the colonies. Failure to comply is a violation of sections 6303 and 6401 and could result in the levy of civil penalties. District Exclusion personnel and CDFA investigators are available to assist as needed.

Two inspectors should perform inspections of shipments. This allows one to look for ants and ant colonies on the truck, and the other to examine the pallets and hives as they are set on the ground. In both cases, the handling of the shipment during unloading will agitate any ants that may be present and help in the location of the ant colony. If a RIFA colony is present, ants would be evident on the truck bed after unloading.

A colony could be on or inside portions of the vehicle, but is more likely to be on the pallet or between hive boxes. The inspector should look into those spaces for rotting wood and clumps of dirt and mud. Apiaries from infested areas are often subject to flooding which forces the ants up into the pallets and between the hive bodies.

If RIFA colonies are found, the shipment is immediately rejected and placed under hold using a "Notice of Rejection", Form 66-071 and a "Notice to Hold Commodities on Premises". District Pest Exclusion personnel should be informed and will assist in quarantine treatments. These treatments are at the risk and expense of the beekeeper, Section 6441 of the California Food and Agricultural Code. A commercial operator, the county or person in possession of the bees if licensed, may do the actual treatment. County pesticide use enforcement personnel are responsible to see that applicable laws are observed.

Phostoxin or Fumitoxin (aluminum phosphide) pellets under plastic tarp using the maximum label rate are used. Follow up bait surveys are absolutely necessary to insure that no reproductives have survived the quarantine treatment. CDFA Pest Detection/Emergency Project personnel shall be contacted to assist in follow up surveys and preventative pesticide bait treatments, as may be required.

DISCOVERY OF EXISTING RIFA COLONIES

RIFA infested bee colonies may have entered California for a number of years. CDFA personnel survey almond

orchards each year and new infestations are at times found. The affected county should contact their district Pest Exclusion personnel to assist in issuing a "Notice to Hold Commodities on Premise" on the property, and to sign a Compliance Agreement for safely conducting their almond operation. This agreement requires county notification prior to conducting any farming operations that might spread RIFA. This includes removing trimmings, firewood, equipment and harvested almond, among other things.

If RIFA are still present at the time of harvest, the nuts will require fumigation prior to movement to the huller. The specifics of such treatments are determined on a case-by-case basis.

4.2.6. HAWAII PLANT MATERIALS

Movement of plant materials from Hawaii to California is primarily governed by federal Hawaiian quarantine, CFR 318.13

CFR 318.13 Hawaiian Fruits, Herbs and Vegetables

A. This quarantine regulates the movement of fruits, vegetables, cut flowers, rice straw, mango seeds and cactus plants from Hawaii into or through other parts of the United States to prevent the spread of fruit flies and other dangerous plant pests which are not known to be established or are not prevalent in other parts of the United States.

B. Regulated Articles

1. The following items are prohibited movement from Hawaii to other parts of the United States: - all fruits, herbs, vegetables in the raw or unprocessed state except those named in (B), (2) and also (D), (2) of CFR 318.13. Cut flowers of gardenia, jade vine, mauna loa and cut flowers of roses with foliage. Cactus plants and parts. Mango seeds. Rice straw. Prohibition of these articles is based on frequent interceptions of various quarantine pests.
2. A list of articles that can be shipped on regulated movement is in (B), (2) of CFR 318.13. The movement of listed articles to California is subject to conditions specified under in (C), (D), and (H) of CFR 318.13.

C. Conditions of Movement

1. Any regulated articles may be moved interstate from Hawaii to any destination in California if:
   - Such movement is accompanied by a valid certificate and movement is made in accordance with (E) and (F) of CFR 318.13 or the conditions of any applicable compliance agreement
   - The articles are exempted from certification or limited permit requirements.
2. Untreated fruits and vegetables from Hawaii may be moved interstate for irradiation treatment on the mainland United States if provisions of the administrative instructions are met and the fruits and vegetables are accompanied by a limited permit.

D. Conditions Governing Issuance of Certificates or Limited Permits

1. Inspection: Fruits and vegetables designated in (B),(2) above may be certified when they have been inspected by an inspector and found apparently free from infestation or infection or without such inspection when the inspector determines that the lot for shipment is of such a nature that no danger of infestation exists.
2. Treatment: Some articles may be certified for movement to the US mainland on the basis of treatments performed under USDA/APHIS/PPQ supervision providing that treated articles were handled after such treatment in accordance with conditions prescribed in a compliance agreement. A comprehensive list of these articles is available in CFR 318.13 (D), (2). The treatments may be the following: irradiation, fumigation, freezing, vapor heat treatment or double hot water dip treatment.
3. Limited permit: Non-certified regulated articles may be moved under a limited permit to specified destinations in California for consumption, processing or treatment.
4. Compliance Agreement: Regulated articles may be moved with certificates or limited permits attached by an establishment when a signed compliance agreement is in effect.

E. Container Marking and Identity

The following information shall be clearly marked on each container, or for shipments of multiple containers or bulk products on the waybill, manifest or bill of lading accompanying the articles:

1. Nature and quantity of the contents
2. Name and address of shipper
3. Owner or person shipping the articles
4. Name and address of consignee
5. Shipper's identifying mark and number
6. Number of the certificate or limited permit authorizing movement if one was issued

Other federal Hawaiian territorial quarantine that regulate movement of articles to California include:

318.30 Sweet Potato
This quarantine prohibits all varieties of sweet potato, tubers, plants and cuttings to California and most of mainland US.

318.47 Cotton and Cotton Products
Prohibits movement of cotton plants, parts, seeds, lint and all cottonseed products except oil. Commodities covered are admitted only under USDA certificate or permit.

318.60 Sand and Soil with Plants
Prohibits movement of all sand except clean ocean sand, soil or earth around the roots of plants.

4.2.7. HIGH RISK MARKET

This section provides a brief step-by-step checklist from inspection to seizure. Detailed protocol of the inspections and some visual reinforcements as well as sample paperwork and various techniques are contained in the High Risk Market Inspection Manual.

Inspection and Seizure Protocol

1. Conduct establishment inspection.
2. Don't leave suspect commodities unattended
   - Examine suspect products on-site for surface pests
   - Ask for a receipt (check date) for suspect commodities
   - Verify sale if receipt is questionable
3. Place commodities on hold if follow-up inspection/survey is necessary
   - Safeguard on-site in store room or cooler
   - If necessary, transport commodities to headquarters for safeguarding.
4. Seize prohibited products
   - Issue Notice of Rejection (Form 66-071)
   - Take photographs and collect evidence
   - Complete the Agricultural Commodity Report of Violation (Form 66-094)
5. Safeguard and transport seized commodities (small quantities*) to headquarters. *Large quantities should be placed on hold at establishment until they can arrange transportation of prohibited commodities for destruction under official supervision. Establishment will incur all costs associated with destruction of prohibited agricultural commodities.
6. Weigh and photograph seized commodities at headquarters
7. Inspect for surface and internal pests- submit samples
8. Write Officer's Statement/Report.
9. Properly dispose of seized commodities.
10. Submit Agricultural Commodity Report of Violation and all associated documentation/evidence to local CDFA district office.

4.2.8. WILD ANIMAL AND PET STORES

Sections 671, & -671.1, Title 14 of the California Code of Regulations, govern the importation, transportation and possession of wild animals. Any wild bird or animal excluded under these sections is also prohibited entry into this State under Section 6304 of the Food and Agriculture Code unless admitted under permit as specified under Section 671.1, Title 14, California Code of Regulations.

The following species in Table 1 are prohibited and it shall be unlawful to import, transport or possess these species alive except under permit issued by the Department of Fish and Game. Permits for importation, transportation or possession of these species may be granted as specified herein and for the purposes designated in Section 671.1 subject to the conditions and restrictions contained in Sections 671.1 through 671.7 and other such conditions as may be designated by the Department. Cities and counties may prohibit possession or require a permit for species not requiring a state permit.

In designating these prohibited species, the Department of Fish and Game Commission has determined that they are not normally domesticated in this state and recognizes two specific classes of prohibited wild animals. Mammals listed to prevent the depletion of wild populations and to provide for animal welfare are termed "welfare animals," and are designated by the letter "W". Those species listed because they pose a threat to native wildlife, the agricultural interests of the state or to public health or safety are termed "detrimental animals," and are designated by the letter "D".

Animals may be added to or deleted from this list pursuant to the provisions of Section 2118(k) of the Fish and Game Code.

Inspections of pet shops and other venues such as swap meets etc., that may have animals for sale according to Section 4.2.12 of this manual, should be visited and inspected at least twice a year.

California Department of Fish and Game, herein after known as Fish and Game, representatives are responsible for capture, destruction, or disposal of restricted or prohibited birds and animals being held in captivity within the State without permit, or at large. If a prohibited or restricted animal without permit is detected by a representative of the Agricultural Commissioner or State Plant Quarantine Officer, he shall affix a quarantine hold tag (Form 66-058) to the thing or cage and report such animal to the nearest Fish and Game representative or regional office and safeguard the animal until the Fish and Game representative takes over, or requests a Commissioner representative to make disposition of the animal. If Fish and Game desires to make disposition, then the Agricultural Commissioner shall issue a Notice of Violation (Form 66-094). Copies of this violation are for: (1) person in possession, (2) Fish and Game representative contacted, (3) Regional Manager of Fish and Game, (4) State Food and Agriculture District Biologist, and (5) file.

Prohibited species include:

1. CLASS AVES - BIRDS

A. Larks - Family Alaudidae

Skylark, *Alauda arvensis* - (D)

B. Cuckoos - Family Cuculidae

All species -(D)

C. Crows, Ravens, Rooks, Jackdaws – Family Corvidae

All species -(D)

D. Thrushes, Blackbirds, Fieldfare - Family Turdidae
1. European blackbird, *Turdus merula* -(D)
2. Missel thrush, *Turdus viscivorus* -(D)
3. Fieldfare, *Turdus pilaris* -(D)
4. Song thrush, *Turdus musicus* -(D)

E. Starling, Mynahs - Family Sturnidae

All species - (D), except *Sturnus vulgaris* (Starling) and *Gracula religiosa* or *Eulabes religiosa* (Hill mynahs), and *Leucopsar rothschildi* (Rothchild's mynah) are not restricted.

F. Sparrows, Weavers, Queleas - Family Ploceidae
1. Sparrows, Genus *Passe*r - All species - (D) except *Passer domesticus* (English house sparrow) is not restricted.
2. Madagascar weaver, *Foudia madagascariensis* -(D)
3. Baya weaver, *Ploceus baya* -(D)
4. Quelas, *Genus Quelea* - All species- (D)

G. Waxbills, Munias, Ricebirds - Family Estrildidae
1. Java sparrow, *Padda oryzivora* -(D)

H. Yellowhammer - Family Emberizidae
Yellowhammer, *Emberiza citrinella* -(D)

I. Falcons, Eagles, Hawks, Vultures - Order Falconiformes

All species (D)

J. Owls - Order Strigiformes

All species (D)

K. Bulbuls or Fruit Thrushes - Family Pycnonotidae
Red-whiskered bulbul, *Pycnonotus jocosus* - (D).

L. Whiteeyes - Family Zosteropidae
Genus *Zosterops* - All species(D).

M. Parrots, Parakeets - Family Psittacidae
Monk or Quaker parakeet, *Myiopsitta monachus* -(D).

N. Ducks, Geese, and Swans –Family Anatidae

1. Mute swan, *Cygnus olor* – (D)

2. CLASS MAMMALIA - MAMMALS

A. Monkeys, Apes - Order Primates
All species (W) except Family Hominidae - not restricted.

B. Sloths, Anteaters, Armadillos, etc., - Order Edentata. All species:

1. Armadillos- Family Dasypodidae- All species (D)

2. Sloths- Family Bradypodidae- (W).

3. Anteaters- Family Myrmecophagidae- (W).

C. Marsupials or Pouched Animals - Order Marsupialia

All species- (W).

D. Shrews, Moles, Hedgehogs, etc., - Order Insectivora

All species -(D).

E. Gliding Lemurs - Order Dermoptera

All species -(D)

F. Bats - Order Chiroptera

All species -(D)

G. Spiny Anteaters, Platypuses - Order Monotremata

All species -(W)

H. Pangolins, Scaly Anteaters - Order Pholidota

All species -(W)

I. Pikas, Rabbits, and Hares - Order Lagomorpha

All species, (D), except domesticated races of rabbits and hares of the Family Leporidae not restricted.

J. Hamster, Field Mice, Voles, Muskrats, Gerbils, Squirrels, Chipmunks, Woodchucks, and Prairie Dogs - Order Rodentia

All species (D), except:

a. Muskrats, *Ondatra zibethica* - Not restricted under conditions set forth in Fish and Game Code Section 2250;

b. Domesticated races of golden hamsters of the species *Mesocricetus auratus* and domesticated races of dwarf hamsters of the Genus *Phodopus* not restricted;

c. Domesticated races of rats or mice (white or albino; trained, dancing or spinning, laboratory-reared); not restricted;

d. Domesticated races of guinea pigs of the species *Cavia porcellus* not restricted;

and

e. Domesticated races of chinchillas of the species *Chinchilla laniger* not restricted.

K. Raccoons, Ringtailed Cats, Kinkajous, Coatis, Cacomistles, Weasels, Ferrets, Skunks, Polecats, Stoats, Mongoose, Civets, Wolves, Foxes, Coyotes, Lions, Tigers, Ocelots, Bobcats, Servals, Leopards, Jaguar, Cheetahs, Bears, etc. - Order Carnivora

1. Family Felidae - All species **(W) except:**

a. *Acinonyx jubatus* (Cheetahs) - (D).

b. Domestic cat and hybrids of domestic cats are not restricted.

2. Family Canidae - All species- (W).

a. Wolf hybrids *Canis familiaris* (domestic dog) x *Canis lupus* (wolf).

i. Any F1 (first) generation wolf hybrid whelped on or before February 4, 1988 may be possessed under permit from the department.

ii. **No state permit is required to possess the progeny of F1 generation wolf hybrids, but cities and counties may prohibit possession or require a permit.**

b. Domesticated dogs are not restricted.

3. Family Viveridae- All species- (D).

4. Family Procyonidae- All species- (D), except:

a. *Ailuris fulgens* (Lesser panda)- (W).

b. *Aiuropoda melanoleuca*- (Giant panda)- (W).

c. *Bassaricus astutus* (Ringtail or Ringtailed cat)- (W).

d. *Jentinkia sumichrasti* (Mexican and Central American Cacomistle)- (W).

5. Family Mustelidae - All species- (D), except:

a. *Ambloynx cinerea* (Oriental small-clawed

otter) -(W).

b. *Aonyx capensis* (African clawless otter) - (W).

c. *Pteronura brasiliensis* (Giant otter)- (W).

d. All species of the genus *Lutra* (River otters)- (W).

6. All others -(W).

L. Aardvarks - Order Tubulidentata

All species - (W).

M. Elephants - Order Proboscidae

All species -(W).

N. Hyraxes - Order Hyracoidae

All species -(W).

O. Dugongs, Manatees - Order Sirenia

All species - (W).

P. Horses, Zebras, Tapirs, Rhinoceroses, etc. - Order Perissodactyla

All species (W) except Family Equidae - is not restrictedt.

Q. Swine, Peccaries, Camels, Deer, Elk, Moose, Antelopes, Cattle, Goats, Sheep, etc., - Order Artiodactyla

All species (D) except:

1. *Boss taurus* and *Bos indicus* (Domestic cattle) *Bos grunniens* (Yak); *Bubalus bulalis* (Asian water buffalo); *Ovis aries* (Domestic sheep); *Capra hircus* (Domestic goat); *Sus scrofa domestica* (Domestic swine); *Llama glama* (Llama); *Llama pacos* (Alpaca); *Llama guanicoe* (Guanaco); Hybrids of llama, alpaca, and guanacos; *Camelus bactrianus* and *Camelus dromedarius* (Camels); and *Bison bison* (American bison) are not restricted;

2. Elk, *Cervus* - A permit may be issued for species of elk (Genus Cervus) which are already maintained within California; and

3. Permits may be issued pursuant to Section 676, Title 14, CCR, for importing, breeding, slaughter and sale of the meat and other parts of fallow deer (*Dama dama*) for commercial purposes.

3. FROGS, TOADS, SALAMANDERS - CLASS AMPHIBIA

A. Toads - Family Bufonidae

Giant toad or marine toad group, (*Bufo marinus*, *Bufo paracnemis*, *Bufo horribilis*) and all other large toads from Mexico and Central and South America -(D).

B. Tongueless Toads - Family Pipidae

All species of genus *Xenopus* -(D).

C. Mole Salamanders – Family Ambystomatidae

All species of tiger salamanders, genus *Ambystoma*- (D)

D. Neotropical Frogs – Family Leptodactylidae
Common Coqui or Coqui frog, *Eleutherodactylus coqui*- (D)

4. JAWLESS FISHES - CLASS AGNATHA

A. Lampreys - Family Petromyzontidae

All nonnative species -(D).

5. BONY FISHES - CLASS OSTEICHTHYES

A. Temperate Basses - Family Percichthyidae

1. White perch, *Morone americana* -(D).

2. White bass, *Morone chrysops* -(D).

B. Herrings - Family Clupeidae
Gizzard shad, *Dorosoma cepedianum* - (D).

C. Drums - Family Sciaenidae
Freshwater drum, *Aplodinotus grunniens* - (D).

D. Characins - Family Characidae

1. Banded tetra, *Astyanax fasciatus* -(D).

2. All species of piranhas, genera *Serrasalmus*, *Serrasalmo*, *Pygocentrus*, *Taddyella*, *Rooseveltiella*,

and *Pygopristis* -(D).

3. Tigerfish, *Hoplias malabaricus* - (D)

E. Trouts - Family Salmonidae
Atlantic salmon, *Salmo salar* - Restricted in the Smith River watershed- (D).

F. Gars - Family Lepisosteidae

All species -(D).

G. Bowfins - Family Amiidae

All species -(D).

H. Livebearers - Family Poeciliidae
Pike killifish, *Belonesox belianus*- (D).

I. Snakeheads - Family Channidae

All species -(D).

J. Carps or Minnows - Family Cyprinidae

1. Ide, *Leuciscus idus* -(D).

2. Grass carp, *Ctenopharyngodon idellus* – (D); except that permits may be issued to a person, organization or agency for possession of triploid grass carp, under conditions set forth in Section 238.6.

3. Silver carp, *Hypophthalmichthys molitrix*- (D).

4. Bighead carp, *Aristichthys nobilis* -(D).

5. Largescale Silver carp, *Hypophthalmichthys harmandi*- (D).

6. Black carp, *Mylopharyngodon piceus* – (D).

K. Parasitic Catfishes - Family Trichomycteridae (*Pygidiidae*)

All species -(D).

L. Whalelike Catfishes - Family Cetopsidae

All species -(D).

M. Labyrinth Catfishes - Family Clariidae

All species - of genera *Clarias*, *Dinotopterus*, and *Heterobranchus* -(D).

N. Airsac Catfishes - Family Heteropneustidae (*Saccobranchidae*)

All species -(D).

O. Cichlids - Family Cichlidae

1. Banded Tilapia, *Tilapia sparrmanii* - (D).

2. Redbelly tilapia, *Tilapia zillii* - (D), except permit may
be issued to a person or agency for importation, transportation, or possession in the counties of San Bernardino, Los Angeles, Orange, Riverside, San Diego, and Imperial.

3. Blue tilapia, *Tilapia aurea* -(D).

4. Nile tilapia, *Tilapia nilotica* -(D).

P. Freshwater eels - Family Anguillidae

All species of genus *Anguilla* - (D).

Q. Pikes - Family Esocidae

All species- (D).

R. Perches - Family Percidae

1. Yellow perch, *Perca flavescens* -(D).

2. Walleye, *Stizostedion vitreum* - (D).

S. Suckers - Family Catostomidae

All members of the genus *Ictiobus* - Buffalos - (D).

T. Killifishes - Family Cyprinodontidae
Sheepshead minnow, *Cyprinodon variegatus* - (D).

U. Lates Perches – Family Latidae
Barramundi (also known as Barramundi perch or Silver barramundi), *Lates calcarifer* – (D).

6. CARTILAGINOUS FISHES - CLASS ELASMOBRANCHIOMORPHI

A. Requium sharks - Family Carcharhinidae

All species of freshwater sharks, of the genus

Carcharhinus - (D).

B. River Stingrays - Family Potamotrygonidae

All species - (D).

7. REPTILES - CLASS REPTILIA

A. Crocodiles - order Crocodilia - Crocodiles, Caimans, Alligators, Gavials

All species - (D).

B. Snapping turtles - Family Chelyridae

All species - (D).

C. Cobra, Coral Snakes, Mambas, Kraits, etc. - Family Elapidae

All species - (D).

D. Adders and Vipers - Family Viperidae

All species - (D).

E. Pit Vipers - Family Crotalidae

All species - (D), except westerm rattlesnake, *Crotalus viridis*; western diamondback rattlesnake, *Crotalus atrox*; red diamond rattlesnake, *Crotalus ruber*, mojave rattlesnake, *Crotalus scutulatus*; speckled rattlesnake, *Crotalus mitchelli* and sidewinder, *Crotalus cerastes* not restricted.

F. Colubrids - Family Colubridae

1. Boomslang, *Dispholidus typus* - (D).

2. Bird or Vine snake, *Theoltornis kitlandii* - (D).

3. Watersnakes, all species of Genus *Nerodia*- (D).

G. Family Helodermatidae

1. Reticulate Gila monster, *Heloderma suspectum suspectum* - (D).

8. CLASS CRUSTACEA - CRUSTACEANS

A. All species of family Cambaridae - crayfish etc. (D), except *Procambarus clarkii* and *Orconectes virilis* not restricted.

B. All species of the genus *Eriocheir* -(D).

9. SLUGS, SNAILS - CLASS GASTROPODA

A. New Zealand mudsnail, *Potamopyrgus antipodarum*

B. All nonnative species of slugs and land snails - (D), except:

1. Decollate snail, *Rumina decollata* in the counties of San Bernardino, Riverside, Imperial, Orange, San Diego, Los Angeles, Ventura, Kern, Fresno, Madera, Tulare and Santa Barbara not restricted with the concurrence of the appropriate county Agricultural commissioners.

2. Brown garden snail, *Helix aspersa* not prohibited.

C. Channel Apple Snail, *Pomacea canaliculata* –(D)

D. All species of Abalone, Genus *Haliotis* – (D), except: Red abalone, *Haliotis rufescens*; White abalone, *Haliotis sorenseni;* Pink abalone, *Haliotis corrugate;* Green abalone, *Haliotis fulgens;* Black abalone, *Haliotis cracherodii;* Pinto abalone, *Haliotis kamtschatkana;* Flat abalone, *Haliotis walallensis;* and Threaded abalone, *Haliotis assimilis* are not restricted.

NOTE: Unpermitted nonnative abalone are determined to be detrimental to native populations, therefore the exemptions provided in Fish and Game Code subsection 2271 (b) and subsection 236 (b), Title 14, CCR, are not applicable.

10. BIVALVES - CLASS BIVALVIA - BIVALVES

A. Zebra Mussel. All members of the genus *Dreissena* -
(D).

11. Transgenic Aquatic Animals.
Includes freshwater and marine fishes, invertebrates, crustaceans, mollusks, amphibians,
and reptiles – (D).

NOTE: Unpermitted transgenic aquatic animals are determined to be detrimental to native wildlife, therefore the exemption provided for in Fish and Game Code Section 2150 (e) is not applicable.

NOTE: Quarantine pest ratings for vertebrate pests may be found on the Department of Food and Agriculture's Index of Target Vertebrate Pests or the Pest Rating List-Vertebrates.

OTHER LINKS

California list of threatened, endangered and rare species
Invasive species information/USDA

4.2.9 Irradiated Plant Materials

Irradiation is a relatively new quarantine treatment. Irradiation treatments are capable of sterilizing some of the insects of greatest quarantine concern, such as tephritid fruit flies, moths, and beetles. However, the level of irradiation required to kill insect pests is often damaging to the commodity, so lower doses of irradiation are used to maintain fruit quality. These lower doses of irradiation will sterilize insects but usually will not kill them.

The inspection of irradiated commodities is a new and unique situation. Irradiated commodities that qualify for entry at ports of inspection may contain living quarantine pests, at any stage of development, in or on the commodity. If the irradiation facility is USDA certified and a proper treatment certificate has been issued, then these insects can be assumed to be sterile. Sterile insects do not represent a pest risk because they cannot reproduce and establish domestic populations. Furthermore, research has shown that properly irradiated fruit fly larvae will not develop into mature flies. Federal regulations currently require a minimum level of irradiation at 250 Grays (Gy) for quarantine treatments for fruit flies on approved commodities. If any live surface pests are found then the minimum irradiation dose is 400 Gy, else the shipment must be rejected.

CERTIFIED IRRADIATION FACILITIES AND CERTIFICATES OF IRRADIATION

USDA's Plant Protection and Quarantine (PPQ) agency must certify irradiation facilities. In the future, certified irradiation facilities will be listed in the federal treatment manual on the PPQ website (http://www.aphis.usda.gov/ppq/). A certified irradiation facility must issue a Certificate of Irradiation with each shipment of an irradiated commodity. An example of an irradiation certificate is included at the end of this sub-section. Currently, Hawaii Pride is the most active irradiation facility that is certified in the United States. As of September 2005, except for papaya, Hawaii Pride is voluntarily irradiating commodities destined for California at 400Gy. Additional information, such as the dosimetry report, will be available from the irradiation facility. In addition, federal regulations will soon require dosimetry markers that will be included on each packing box. Dosimetry markers will provide a visual indicator to verify exposure to a minimum level of irradiation.

INSPECTION METHODS FOR IRRADIATED COMMODITIES

After reviewing the certificate of irradiation, inspection staff should inspect commodities thoroughly for any external or internal pests. As a rule of thumb, allocate more time to shipments that in your judgment are most likely to contain pests. First, complete a visual check of fruit, followed by fruit cutting if necessary. The experience of county inspection staff together with the condition of the fruit should take precedence in directing the inspection. Use the physical condition of the packaging and the fruit to find external and/or internal pests as easily and as quickly as is possible. Select packages, and within packages select fruit, that have pests or are most likely to have pests. This is a biased method of sampling and is advantageous because it allows the county inspectors to select fruit that is the most likely to be infested, based on their experience (bias). The disadvantage of biased sampling is that it eliminates our ability to make any statistical inference about the fruit not sampled, because that estimation procedure requires a random method of sampling. However, if infested fruits are found in the sample, then there is no longer any practical need to estimate the probability that the entire fruit lot is free of contamination.

If there are pests or obvious signs of pests (e.g., larval tunnels) collect these samples with the fruit. If there are no obvious pests on or in the fruit, begin the inspection with a general overview of the entire shipment. Continue to look for pests or signs of pests in order to isolate suspect fruit. If there are no indications of any pest presence to focus your selection, then keep your inspection as broad as possible. If no fruit is suspect, open many boxes and cut a single fruit from each box so as to survey as much of the entire shipment as possible.

County inspection staff should cut fruit to search for internal larvae. Remember that cutting fruit requires county resources and results in a loss to the shipper. Please cut the minimum amount of fruit that is required to determine the pest risk associated with the commodity shipment. For clean fruit from an irradiation facility with a history of compliance, county staff should cut the minimum ½ of 1% of the shipment. For suspect commodities, staff may cut more then the minimum ½ of 1% as needed to determine the level of infestation, up to the 5% maximum of the amount of the shipment. At the 5% maximum, inspectors will have

likely found multiple pests. Consult with your supervisor and CDFA to determine the pest risk. We will accept low numbers of pests if they are properly treated, but we want to monitor the quality of the treatments. To do this we need to collect living samples on ice. In some cases, a CDFA entomologist may chose to visit the inspection site to collect samples for identification. If you have cut up to the maximum 5% of the shipment and the fruit is heavily infested, contact CDFA Fruit and Vegetable Quality inspection staff, (916) 654-0919. The fruit may be rejected because it fails to meet quality standards even if the certificate of irradiation is valid and the larvae are sterile.

COLLECTION, PRESERVATION, AND TRANSFER OF INSECT SAMPLES

In order to expedite the safe delivery of any intercepted larvae to the Plant Pests Diagnostics Branch, to enhance communication between county and State regulatory agencies, and to facilitate any necessary investigations by the affected regulatory agencies, any shipment of fruit found to be infested with live exotic fruit fly larvae should be handled according to the following procedures:

1. When live larvae are found, the entire shipment should be placed on hold and safeguarded.
   Any fruit believed to contain live larvae should be immediately confiscated by quarantine personnel and kept in a secure location away from any temperature extremes. If possible, preserve at least ten living larvae (wrigglers) for the CDFA entomologist. Choosing "wrigglers" may be the simplest way to ensure that selected larvae are alive. Samples of the living larvae should be retained in the fruit, the fruit enclosed in bags, the bags sealed, and the sealed bags placed on ice in a cooler (do not place the larval samples in alcohol) for transmittal to Biosystematics at CDFA Pest Preventive Release Program office, Los Alamitos (address below) for identification and testing.

Complete the Pest and Damage Report, Form 65-020, accurately and clearly. Include the following: origin, shipper, and any applicable certification numbers.

Any information pertinent to the condition of the larvae should also be clearly noted on the PDR form. If both live and dead larvae are found, this should be clearly stated in the remarks section and the basis for those assumptions. Please mark the PDR "RUSH" to help expedite the identification.

CDFA staff will pick up samples for laboratory analysis. Do not send by parcel post because of the potential loss or damage due to heat, cold or delays. Refer to the enclosed map of California on the next page to determine whether you should address your sample to Insect Biosystematist, at the CDFA facility at Los Alamitos or the CDFA Meadowview laboratory in Sacramento.

If you are in San Luis Obispo, Kern, or San Bernardino county, or any county south of these counties, address samples to

Preventative Release Program
CDFA, 3802 Constitution Ave
Los Alamitos, CA 90720

If your county is north of San Luis Obispo, Kern, or San Bernardino counties address samples to

Plant Pest Diagnostics Branch
CDFA, 3294 Meadowview Road
Sacramento, CA 95832-1448

Figure 1. CDFA Destination Laboratories for Northern and Southern Counties

2. Immediately notify your supervisor for further instructions to coordinate and expedite the delivery of any infested material to a selected, approved quarantine rearing facility if it is deemed necessary.

3. NOTIFICATION PROCEDURES

- If live larvae are found by county staff, the agricultural commissioner shall immediately notify the Pest

Exclusion Branch in Sacramento, the Branch Chief or Interior Program Supervisor.
- If Pest Exclusion staff finds live larvae, the district supervisor will immediately notify the Branch Chief or Interior Program Supervisor, and the affected County Agricultural Commissioner.
- Pest Exclusion staff in Sacramento will notify the USDA/Western Region office and/or the affected origin state's regulatory agency. Pest Exclusion will prepare "QUARANTINE PEST ALERT" e-mail to all County Agricultural Commissioners and other interested parties.
- Notification must be accompanied by facsimile transmission of all the pertinent paperwork, which accompanied the shipment.

4.2.10 FREQUENCY OF REGULATORY INSPECTIONS

Each county agricultural commissioner adopts a variable frequency inspection schedule, which benefits the commissioner in the performance of regulatory enforcement procedures. Inspections for quarantine compliance and acceptable handling of screened waste can be conducted occasionally. When a schedule is adopted and followed, consumers and industry will benefit from the services and protection is afforded on a uniform basis.

Inspectors are encouraged to combine various activities - when on a terminal visit, perform several activities on same visit. Some factors to consider in developing a frequency of inspection are:
- Frequency of shipments arriving at terminal
- Source (origin) of shipments
- Frequency of visits associated with other activities
- Danger of infestation associated with a business or recent findings

Inspections of incoming shipments of corn, other grains, and hay often consist of a review of certificates and intermittent inspections.

Below are suggested guidelines for frequency of plant quarantine compliance, spot checks, visits, or monitoring inspections. This is based on Notice of Rejections and/or violations issued to establishment, firm, or company and may vary with time.

1. **Daily visits**
a. Postal Sectional Centers
b. United Parcel Service, FedEx Terminals, etc
2. Monthly visits (12 times a year)
a. Feed grain mills, poultry and cattle feeders, and seed screening mills approved to receive infested commodities
3. Quarterly visits (4 times a year)
a. Truck, rail, airline, bus, and moving van terminals
b. Associate post offices
4. Biannual visits (2 times a year)
a. Storage areas and feed stores
b. Seed screenings and mill establishments
c. Commercial nurseries and retail stores marketing plant material
d. Federal, county, and city municipal growing grounds, botanical gardens, experimental testing and research laboratories
e. Commercial (private) testing or research laboratories
f. Pet stores and wild animal farms
g. Forest and ranger stations
h. Universities, colleges, or schools engaged in research, experiments, or studies
i. Race tracks
j. Approved hay mills
k. Import stores

4.3. ORIGIN INSPECTION CERTIFICATION

4.3.1 GARDEN SNAIL QUARANTINES

4.3.1.1 FLORIDA – GARDEN SNAILS

Shipments of plants and cut flowers/greens destined to Florida from California are required to be certified free of brown garden snail. The snail is phytophagous. All commercial shippers of regulated articles must be under a written compliance agreement as a condition of quarantine compliance.

There are three routes shippers may use to certify that plant materials for shipment to Florida are free of brown garden snail:

I. SNAIL-FREE MASTER PERMIT PROGRAM
The Florida Department of Agriculture and Consumer Services (FDACS) provides for qualified shippers to ship plant material to Florida under a Snail-Free Master Permit Program (master permit). Participation is recommended but not mandatory.

The Florida Department of Agriculture and Consumer Services and California Department of Food and Agriculture (CDFA) have two master permits on brown garden snails. The master permits are for:

- Nursery stock shippers
- Cut plant material shippers

Provisions of the permits are similar and include the following:
a. Participating nurseries/firms must be under compliance with CDFA. The compliance agreements are actually signed with County Agricultural Commissioners under CDFA oversight. Two type of compliance agreements are used

1. Snail-free nurseries compliance agreement
2. Snail-free greenhouses/ holding areas compliance agreement

Only the above compliance agreements must be used for establishments operating under the master permit program. This ensures uniformity and program integrity in the program. The compliance agreements contain necessary provisions to ensure that shipments are free of snails and incorporate by reference the "Nursery Growers Guide to Snail-Free Operations."

A copy of the agreement must be sent to Pest Exclusion, Sacramento, as soon as it is signed. Nurseries/shippers that are already under compliance with their County Agricultural Commissioners should adopt the compliance agreement and assigned necessary identification number if they wish to participate in the master permit program.
b. Nursery stock or cut plant material that is shipped under the Snail-Free Master Permit Program must originate in a snail-free nursery, holding area, or greenhouse.
c. CDFA supplies FDACS with list of current master permit participants and their identification numbers. This list is prepared from the copies of completed compliance agreements that are submitted by agricultural commissioners to Pest Exclusion, Sacramento.

For uniformity, a unique identification number is assigned to each shipper. The number should begin with the two digit county number and be followed by a consecutive 3-digit number. For example, the sixth compliance agreement written in Alameda County could be assigned the identification number SMP 01006 (SMP stands for Snail-Free Master Permit).

d. Shipments of regulated articles by participating establishments to any consignee in Florida must be accompanied by the assigned identification number. The number must be incorporated into a stamp or certificate. The wording on the stamp or sticker should parallel the following example: "California Snail-Free Master Permit No. ****** the plant material in this shipment comes from a snail-free source and is apparently free of phytophagous snails.

(Facsimile signature)
John Doe
ABC County Agricultural Commissioner"

e. Any shipment found infested by phytophagous snails will be rejected. The participating nursery/firm will be suspended from the master permit program until CDFA can assure FDACS that the snail problem has been resolved.

FDACS notifies CDFA as soon as shipment from a participating establishment is found infested with phytophagous snails. In such situations, CDFA will immediately notify the origin county that the shipper is suspended from the Master Permit Program pending the outcome of a county investigation. When the snail problem is corrected, CDFA will make arrangements for reinstatement of shipping privileges under program.

II. NON-MASTER PERMIT SHIPPERS OF NURSERY STOCK IN GROWING MEDIA AND CUT FLOWERS/GREENS FROM SOURCES APPROVED AS SNAIL-FREE

Certification of nursery stock for shippers that are not participating in the Snail-Free Master Permit Program may be done if the nursery stock was produced in a snail-free facility under compliance. The certifying inspector must examine and find the shipment is free of phytophagous snails. This certification method may be used for nursery stock.

Shippers whose products qualify for certification under this route would most likely be eligible to participate in the master permit program. Such shippers may join the program, if they want to participate.

All shipments must be accompanied by a Certificate of Quarantine Compliance and should include any precautionary treatment information as may be appropriate. Shipments may be certified using the following additional declaration: "The plants or plant material in this shipment have been inspected by an authorized California inspector and are believed to be free of phytophagous snails prohibited by Florida."

III. NON-MASTER PERMIT SHIPPERS OF CUT FLOWERS/GREENS FROM AREAS NOT APPROVED AS SNAIL FREE

Shipments of cut flowers/greens from sources that are not approved as snail-free must be thoroughly inspected by the certifying inspector and found free of snails to qualify for certification. All commercial shippers of cut flowers/greens and other regulated articles must be under written

compliance agreement to observe the Florida snail quarantine as a condition of receiving a quarantine compliance certificate for snails. The following selected certifying requirements for cut flower/greens shippers:

Inspection of Grower Deliveries

a. The shipper should thoroughly inspect all grower merchandise at the time of delivery.
b. All snail-infested deliveries should be refused. Subsequent deliveries from the grower should be permitted only after snail problem is resolved to the satisfaction of the shipper.

Shipper and Shipping Facility Requirements

a. Only snail-free material should be permitted into the shipping facilities.
b. High-risk and low-risk materials should be held in separate areas pending shipment.
c. Packing and storage areas must be:
   1. Regularly sanitized.
   2. Free from plant debris and have weed-free perimeter. If landscaped, must be treated for snails on a regular basis.

High-Risk Materials

The following outdoor grown cut flowers/greens, except when processed, are considered to be high-risk. They are eligible for certification but must be held and shipped separately from other material:

a. Eucalyptus, E*ucalyptus globulus*
b. Heather (= Ling*),* Calluna (*=Erica) vulgaris*
c. Marguerite daisy, *Argyranthemum (=Chrysanthemum) frutescens*
d. Statice, *Limonium sinuata*
e. Protea, varied genera
f. Chrysanthemum, *Chrysanthemum spp.*
g. Leptospermum, *Leptospermum spp*

Processing of High-Risk Materials

High-risk materials are commonly processed by dipping the plant material for a minimum of 30 seconds in a solution consisting of 2 pounds tannic acid powder formulation dissolved in 16 gallons of isopropyl alcohol, and diluted with 32 gallons of water.

Final Inspection

a. Each shipment must be inspected to the satisfaction of the county agricultural commissioner, and found free of phytophagous snails prior to certification.
b. Shipment should be refused certification, if live phytophagous snails are detected. If no live snails are detected during reinspection, the shipment may be certified.
c. Packing and loading procedures should be monitored to deter post certification re-infestation(s).

Bareroot nursery stock, including material from nurseries not approved as snail-free, which has been harvested and handled in such a manner as to assure freedom from snails may be certified after inspection to the satisfaction of the county agricultural commissioner. This is applicable to nursery stock such as bareroot strawberries, daylilies, and trees.

Privately owned plant material may be certified with the following conditions:

1. Cut flowers and/or greens – inspected to the satisfaction of the county agricultural commissioner and found free of phytophagous snails.
2. Plants (outdoor grown) – treated with an appropriate molluscicide, inspected, and found free of phytophagous snails.
3. Plants (indoor grown) – inspected and found free of phytophagous snails.

Organic produce must be inspected to the satisfaction of the county agricultural commissioner and found free of phytophagous snails prior to certification. If petitioned, the Florida Department of Agriculture and Consumer Services may grant exemptions for certain organic produce, if the processing procedure is found acceptable to grant an exemption from Florida's Snail Rule 5B-43. Organic produce shippers interested in obtaining an exemption for specific commodities should send a petition to:

Florida Department of Agriculture
And Consumer Services,
Division of Plant Industry
1911 S. W. 34th St. / P.O. Box 1269
Gainesville, FL 32602-1269

VI. GENERAL REQUIREMENTS FOR ALL SHIPPERS – TRANSPORTING VEHICLES

It is the responsibility of the shipper nursery to:

1. Nursery Stock
   - Clean any truck or rail car by steam cleaning, fumigation, or thoroughly washing under pressure after transporting nursery stock
   - It is suggested that a rubber stamp or typed statement be applied to the manifest, invoice, or billing worded "Vehicle cleaned prior to loading and found free of snails" or "Vehicle inspected and found free of snails".
2. Cut Flowers/Greens

- Inspect for the presence of phytophagous snails prior to loading. Vehicle must be snail-free.
- Vehicle may be steam cleaned, fumigated, or thoroughly washed under pressure prior to loading.

V. REJECTIONS AND REINSTATEMENTS FOR NON-MASTER PERMIT SHIPPERS

Detection of a phytophagous snail by Florida officials will result in non-acceptance of certificates from the nursery/shipper for a minimum of 30 days after a first rejection or 6 months after subsequent rejections.
When a rejection occurs, Florida will provide CDFA Pest Exclusion Branch, Sacramento, with:

1. Rejection Notice.
2. Laboratory identification results.
3. Accompanying certificate or the certificate number, county, date, and inspector's name.
4. Letter of notification of interception and non-acceptance of certificates.

Copies the above documents would be forwarded to the origin County Agricultural Commissioner.

Further shipments from the affected nursery/company must undergo the following procedure prior to any new certification:

1. County agricultural biologists should work with the nursery/shipper to eliminate the snail infestation and review growing, harvesting, packing, and shipping procedures. Pest Exclusion's district biologists are often available to assist.
2. Towards the end of the suspension period, the shipper must submit a letter to the County Agricultural Commissioner detailing the measures, which have been taken to eliminate the risk of shipping snail-infested shipments and requesting a reinstatement.
3. Reinstatement inspections are to be jointly performed by a representative of the county agricultural commissioner's office and the California Department of Food and Agriculture, Pest Exclusion Branch.
4. The county representative or commissioner must submit a letter to Pest Exclusion Branch, Sacramento, detailing the inspection results and revised county procedures to avoid certification of infested shipments. A statement recommending reinstatement or continued suspension should be included. A copy of the county letter should be sent to the Pest Exclusion district biologist.
5. The Pest Exclusion district biologist must submit a memo with explanatory information to Sacramento headquarters recommending reinstatement or continued suspension of the shipper. A copy should be sent to the County Agricultural Commissioner.
6. Pest Exclusion, Sacramento, will submit the documents required in 2, 4, and 5 to Florida, if the county and Pest Exclusion district biologist concur on reinstatement of the shipper. If the county and/or exclusion biologist indicate reinstatement should not be made, all documents will be held pending correction of the problem. After the problem is corrected to the satisfaction of both the county and the Pest Exclusion biologist, both would submit an additional document to Pest Exclusion, Sacramento, indicating that the problem has been corrected and recommending reinstatement.
7. Reinstatement by Florida is usually made approximately ten days after receipt of our correspondence. The reinstatement date may be communicated from Florida by telephone to Pest Exclusion, Sacramento and followed by the reinstatement letter. Pest Exclusion will notify the county of the reinstatement date when notified by Florida. Do not issue certificates until the reinstatement date is given.

VI. SNAIL-FREE OPERATIONS

This section offers good methods to gain and maintain snail-free status. The information is primarily intended for use by county inspector but may be given to nurseries or other interested parties.

A nursery must be under a compliance agreement with an agricultural commissioner, to qualify as snail-free shipper. Such nurseries must have a snail-free:

- Holding area
- Growing ground or greenhouse

The recommended compliance agreement is the same agreement format used for participants in the Snail-Free Master Permit Program except that it should be on county letterhead. However, other effective compliance agreements may be used.

1. SNAIL-FREE HOLDING AREA

The nursery has the responsibility of constructing, maintaining, and inspecting an enclosed snail-proof area. A clear bordered and defined area in which regular treatment and systematic procedures combine to eliminate phytophagous snails. If the snail-free area is an open area, it must be effectively isolated at its perimeter to prevent entry of snails from surrounding areas. Recommended of barriers include installing a 3" high copper band or wire window screen at least 6" high. The barriers should be buried to a depth of at least one inch at the base.

Other barriers include screens of galvanized hardware cloth (1/8 inch mesh) treated with copper naphthenate every 30 to 45 days. The screens should be at least 30 inches high above ground level and anchored at least one inch at the base. It can be erected vertically around the snail-free area with a 30" barrier of bare dirt on each side of the fence. No is necessary if this barrier can be stepped over when stock is being moved into or out of the holding area. The upper edge of the screen can be bent over parallel with the ground and then down to a 30-degree angle to the ground may be used to further restrict access to snails.

Reliance on mesh screen barriers for certification would require inspection and maintenance on a regular basis. This includes removal of weeds and debris that would allow snails to circumvent the mesh barrier. A holding area can be located with an encircling strip of bare ground that is 40 to 50 feet wide. However, 15 feet wide are acceptable, if the strip and the plant material immediately adjacent barrier are treated every 30 days. The snail-free area should be located that flooding water or run-off would not wash snails into the holding area.

2. INTRODUCE CLEAN NURSERY STOCK

All stock to be placed in the snail-free area should be inspected carefully before being placed in the holding area. While within the holding area, the stock should be inspected at the discretion of the nurseryman for traces of snail activity such as snail tracks, eggs, and foliage damage.

The stock should be located so that its identity with respect to date of entry is maintained. All stock must remain within the area for 30 days before being released for shipment. During holding period, inspections could reveal any snail activity. Whenever snails are found, all stock within the holding area must be kept at the area for further inspection and treatment for another 30 days.

3. RECORDS OF STOCK IDENTITY

Written records of stock in the holding area will be kept and made available for consultation if questions arise. The records can be listings by the date of stock entry into the holding area, where it was placed, and how often it was treated. A map of the area detailing similar information can be used.

Alternatively, each lot can be grouped and a placard or stake identifying it as to date of stock entry, treatments, and date of exit. Any such outdoor records have the advantage of availability to workers. However, it would be subject to damage or loss, and would have to be weatherproof.

4. TREATMENTS

Treatment of the nursery stock within the snail-free area should be regularly applied. The treatment records of shippers not participating in the master permit program, should be examined at least once every 30 days.

The following treatments are examples of molluscicides considered to be appropriately effective:

- Zectran (Mexacarbate)
- Mesurol (Methiocarb)
- Deadline (Metaldehyde)

5. FINAL INSPECTION

The stock in a holding area must be regularly baited and inspected for thirty days without finding live snails. Otherwise, it cannot be certified.

The county agricultural commissioner would make inspections at the start and end of the 30-day period. Treatment may be repeated as a precaution. Each shipment must be inspected to the satisfaction of the county agricultural commissioner and found free of phytophagous snails prior to certification. Certain plants such as *Acanthus, Aucuba, Crassula, Euonymus*, and *Hydrangea* are preferred hosts.

6. SNAIL-FREE NURSERY

To qualify as snail-free, the county agricultural commissioner must know the operating procedures of the nursery, including the introduction or lack of introduction, of plant material from outside sources. The commissioner must be aware of sanitary practices adopted by the nursery, and make regular inspections for snails before approving the nursery as snail-free.

7. SNAIL-FREE GREENHOUSES

A. Tightly Enclosed Greenhouse

1. All ground within 36 inches outside of exterior doorways shall be free of vegetation, or, if landscaped, be treated on a routine basis.
2. Ventilators shall be screened or louvered to keep out snails.
3. No barrier is required outside of the greenhouse provided proper inspection can be made to verify the greenhouse is constructed in a manner to prevent entry of snails.
4. Material introduced into the snail-free greenhouse should be inspected and treated for snails or held in a quarantine area until determined to be snail-free.

B. Not Tightly Enclosed Greenhouses

1. A 12-foot border around the outside of greenhouse shall be kept free of vegetation, or, if landscaped, be treated for snails on a regular basis.
2. Weeds and grass inside the greenhouse shall be kept under control.
3. Treatments shall be applied regularly and systematically recorded.

4.3.1.2 BROWN GARDEN SNAIL - OTHER STATES AND CANADA

The following states and Canada have quarantines against the brown garden snail (*Helix aspersa*):

Alabama	Oregon
Arkansas	South Carolina
Canada	Tennessee
Idaho	Texas
Louisiana	Virginia
Mississippi	Washington
North Carolina	West Virginia

Florida has quarantine against all phytophagous mollusks, including brown garden snail. Guidelines for certification of plant material to Florida are in Section 4.3.1.1. All quarantine compliance certificates should list both type and quantity of plants covered. Long manifests should be securely fastened to the certificate.

The following is a summary of each state's European brown garden snail quarantine:

1. ALABAMA

A. Regulated Articles

- Soil, sand, or gravel
- Plants and plant products
- Forest products such as stump wood or timbers
- Any other articles which have become contaminated or subject to contamination

B. Certificate Requirements

♦ Brown garden snail-free origin
- Inspected and found free of brown garden snail
- Brown garden snail is not known to exist in the nursery or site from which the regulated articles originated.

♦ Origin not approved as brown garden snail free
- One hundred percent of the regulated articles must be inspected and found free from brown garden snail.

♦ Regulated articles, other than live plant material
- May be certified if treated for brown garden snail as recommended in the USDA/APHIS/PPQ Treatment Manual

C. Rejections and Reinstatements

- When a brown garden snail rejection occurs, Alabama officials will not accept certificates for plant material from the nursery/shipper for a minimum of six months
- Reinstatement procedures are similar to those in Section 4.3.1.1.

2. ARKANSAS

Quarantine is applicable to other phytophagous snails.

A. Regulated Articles

- Ornamental and horticultural nursery stock with roots

B. Certificate Requirements

♦ Brown garden snail-free origin
- Nurseries must file certificates of inspection stating that the nursery has been inspected and found free of brown garden snail.
- Amended certificates of inspection will also be accepted for nurseries shipping only:
- Bareroot nursery stock free of soil.
- Cured bulbs free of soil.
- Nursery stock from greenhouses certified as snail-free.
- Origin not approved as brown garden snail free:
- Shipments must be accompanied by a certificate indicating the shipment meets either of the following conditions:
  - Fumigation in a manner approved by the Arkansas State Plant Board.
  - The plants have been held separate in a quarantine area for 30 days under official supervision, treated with baits and sprays, inspected and reinspected and found free of harmful snails for at least 30 days.

3. CANADA

A. Regulated Articles

- Ornamental and horticultural nursery stock field or container grown
- Cut flowers and dormant, bareroot, defoliated planting stock does not need certification but should be free of brown garden snails

B. Certification Requirements

♦ Brown garden snail-free origin:

- Plant material should be certified only when it originates from a brown garden snail-free nursery, greenhouse, or holding area; **and**
- Inspected and found free of brown garden snail. The inspection should be performed within 14 days of exportation.

♦ Certificates should include the following additional declaration:
- "The rooted plants in this consignment originate from an approved snail-free nursery, greenhouse, or holding area AND were inspected and found to be free of European Brown Garden Snail (*Helix aspersa/Cornu aspersum*)."

C. Rejection Policy
Canadian agricultural inspectors will reject plant material shipments for snails other than brown garden snails. Shipment would be rejected if there were evidence of less than adequate brown garden snail control, such as slime trails.

4. IDAHO
A. Regulated Articles
- Grass sod
- All plants, nursery stock or florist stock with roots in soil

B. Exempt Articles - must be snail-free
- Cut flowers and cut greens
- Soil-free plants including: bareroot plants, plant crowns, roots for propagation, bulbs, corms, tubers, and rhizomes

C. Certification Requirements
- Officially inspected immediately prior to shipment and found free of all life stages of regulated pests,
- Originated from an area determined by official inspection to be free from regulated pests

D. Shipping Requirements
- Certified and non-certified articles shall not be shipped together in the same transporting vehicle
- Transporting vehicle, as well as regulated articles, must be free of regulated pests

5. LOUISIANA
A. Regulated Articles
- Ornamental, horticultural and nursery stock.
- Cut flowers do not require certification but must be free of brown garden snail.

B. Certification Requirements
- Regulated material moved into or within Louisiana must be accompanied by a certificate of nursery inspection (tag) and certified for freedom from European brown garden snail or other phytophagous snails. Snail certification must accompany the shipment.
- A copy of the snail certification must also be sent by the issuing county to:

  Louisiana Department of Agriculture
  Division of Horticulture and Quarantine
  P.O. Box 3118
  Baton Rouge, Louisiana 70821-3118

6. MISSISSIPPI
A. Regulated Articles
- Ornamentals, nursery stock, or any other plants.
- Soil, sand, and peat
- Any other article which may be responsible for movement of brown garden snail

B. Certificate Requirements
♦ Brown garden snail-free origin
- Inspected and found free of brown garden snail, and
- The pest is not known to exist in the nursery or site from which the shipment originated

♦ Origin not approved as brown garden snail-free
- Shipment must be accompanied by a certificate attesting to the following treatment:

  Fumigated in a gas-tight chamber with methyl bromide at a rate of 2-1/2 pounds per 1,000 cubic feet at 70^{o}F. or above for 2 hours, or with HCN at a rate of 25cc per 100 cubic feet for one hour at 50^{o}F to 85^{o}F.

♦ Bareroot plants can be certified free of brown garden snail based solely upon inspection.

♦ A copy of the certificate must be sent by the issuing county to:

  The Director
  Bureau of Plant Industry
  Mississippi Department of Agriculture and Commerce
  P.O. Box 5207
  Mississippi State, Mississippi 39762

♦ Advise shipping nurseries to immediately fax a copy of the certificate to the MDAC at (601) 325-8397 or by priority mail to the address above.

7. NORTH CAROLINA
A. Regulated Articles
- All plants and plant parts

B. Certification Requirements

- Shipment must be accompanied by a certificate of inspection indicating that it is free of brown garden snail or originated in an area where brown garden snail does not occur

8. OREGON

A. Regulated Articles
- Grass sod
- All plants with roots in soil.

B. Certificate Requirements:
- Inspected and found free of brown garden snail,
  or
- Originated from an area determined to be free from brown garden snail

C. Shipping Requirements
- Certified and non-certified articles shall not be shipped together in the same transporting vehicle.
- Transporting vehicle, as well as regulated articles, must be free from brown garden snail.

9. SOUTH CAROLINA

A. Regulated Articles
- All nursery stock.
- Cut flowers and cut greens
- Any other article which may be responsible for the movement of brown garden snail

B. Certificate Requirements:
- Must be accompanied by a certificate of quarantine compliance stating commodities are free from brown garden snail.
- It is recommended that shippers meet Florida's garden snail requirements (See 4.3.1.1).

10. TENNESSEE

A. Regulated Articles
- Nursery stock.
- Other plants, plant materials, and articles capable of carrying the brown garden snail.

B. Certificate Requirements
- Articles inspected and found free from brown garden snail, and
- Growing site inspected and found free from brown garden snail.
- Shipments from infested areas must be certified as treated in either of the following manners
  - With methyl bromide at the rate of 2-1/2 lbs. per 1,000 cubic feet at 70°F or above for a period of 2 hours; or
  - With Hydrogen Cyanide at the rate of 25cc per 100 cubic feet at 50°F to 80°F for a period of one hour

11. TEXAS

A. Regulated Articles
- Ornamental and horticultural nursery stock.
- Cut flowers and greens, orchids in bark, and soil free plants including bareroot plants, plant crowns, roots for propagation, bulbs, corms, tubers and rhizomes of plants do not require certification but must be free of brown garden snail

B. Certification Requirements
- ♦ Brown garden snail-free origin
  - Must state brown garden snail is not known to occur in the nursery or growing area from which the shipments originated.
  - Counties with nurseries working under a compliance agreement to maintain snail free nurseries or nurseries with snail free holding areas may submit an amended certificate of quarantine compliance for each participating nursery to:

    Plant Quality Program
    Texas Department of Agriculture
    Post Office Box 12847
    Austin, Texas 78711
    Phone: (512) 463-7476
    Fax: (512) 463-8225

The compliance agreement number is entered in the certificate number block. Additional declaration must include an expiration date for the certificate.

The expiration date should coincide with the next semi-annual brown garden snail inspection required by the Texas quarantine. The shipping nursery includes a copy of the current certificate with each shipment of plant material.

- ♦ Origin not approved as brown garden snail-free
  Certificate must state one of the following:
  - The plant material was inspected and found free of brown garden snail, or
  - The plant material was treated with an approved molluscicide. Recommended treatments include materials containing methiocarb or mexacarbate that can be applied as a drench, spray, or broadcast.

12. VIRGINIA

A. Regulated Articles
- Ornamentals or other plants
- Soil
- Other articles which may move brown garden snails

- Cut flowers require certification

B Certification Requirements
Certification may be based on negative survey, inspection, or treatment. One of the following statements must be used on the Quarantine Compliance Certificate:

- "The commodity originated in an area not known to be infested with European brown garden snail." Nursery stock from a snail free nursery would qualify for this statement; or
- "This commodity was inspected by an agricultural official in California and was found free of European brown garden snail"; or
- "The commodity was treated for European brown garden snail."
  The required treatment is 5 pounds of methyl bromide per 1,000 cubic feet for 5 hours at 70° F. or above.

13. WASHINGTON
Brown garden snail is an "A"-rated pest in Washington. There are no current certification requirements, but all plant material shipments should be free of brown garden snail.

14. WEST VIRGINIA
A. Regulated Articles

- Live, non-native, plant-feeding snails in any stage of development
- Plant material
- Any other articles determined by the Commissioner to be capable of transporting live, non-native, plant-feeding snails

B. Certificate Requirements

- Regulated articles shall not be moved into the state of West Virginia from a regulated area unless they are accompanied by a certificate, issued by a duly authorized agriculture official of the state of origin, stating that the articles are free of non-native, plant-feeding snails.

4.3.2 GUIDELINES FOR APPLE MAGGOT CERTIFICATION OF COMMERCIALLY PRODUCED APPLE

With the repeal of the State's exterior and interior quarantines for apple maggot, apples may move unrestricted in California except to the following counties which have adopted ordinances to regulate to movement of apples into their jurisdictions:

Contra Costa, El Dorado, Fresno, Kern, Kings, Madera, Merced, Monterey, San Benito, San Joaquin, San Luis Obispo, Santa Cruz, Santa Barbara, Stanislaus, Tulare and Ventura.

Apples, or apple trees, are prohibited entry into these counties except under the following provisions:

1. Commercially packed apples produced using conventional pest control practices are not restricted. "Conventional pest control practices" shall mean treatment with pesticides at label dosages and on a schedule effective against apple maggot.

2. Commercially packed organic apples (apples produced by growers in compliance with and registered under the California Organic Foods Act of 1990) may enter the county if the producing orchard was trapped and found negative for apple maggot.

3. Commercially produced apples may enter the county in bulk for packing, juicing, and processing under a compliance agreement between the importing company and the county agricultural commissioner.

4. Apples trees which are free of fruit and bare root or free of fruit and certified by origin agricultural officials as being treated with a soil drench effective against apple maggot may enter the county, subject to inspection.

Local compliance agreements for the movement of commercially produced bulk apples shall have the following requirements:

1. Only apples originating from orchards using conventional pest control methods, or from qualified organic orchards may enter the county for packing, juicing, or processing.

2. Prior to receiving any apples grown from any orchard located outside of the county, the importer must notify the agricultural commissioner's office of the intent to receive the apples, the name of the shipper/grower, the identification of the orchard of origin, and the anticipated dates of receipt.

3. All bulk shipments entering the county must be transported in a secured vehicle(s) to prevent spillage. This may include use of structurally sound bins and tarped vehicles, or enclosed vans.

4. All bins must be identified to maintain the origin identity of the fruit.

5. Fruit shall be processed upon arrival, remain in their original enclosed containers, or be placed into controlled atmosphere or conventional cold storage chambers.

6. All waste must be disposed of in a manner approved by the agricultural commissioner. All bins shall be cleaned in a manner approved by the agricultural commissioner.

7. The following records must be kept for each load of bulk apples imported into the county: date received, shipper/grower's name, county or state of origin, number of bins, origin orchard identification.

8. Inspectors from the commissioner's office may intermittently monitor the facility, cut fruit, and have access to records associated with the compliance agreement.

9. The importer shall reimburse to the county agricultural commissioner all costs for monitoring this compliance agreement.

Guidelines for apple maggot certification of commercially produced apples

A history of freedom from apple maggot infestation has been established within some counties in California's Central Valley based on participation in the detection traping program sponsored by the California Department of Food and Agriculture. With the cessation of the Department sponsored detection program, the following guidelines have been developed to provide all counties with the means to offer origin certification based on freedom from apple maggot infestation for those states and countries requiring such certification based on the use of annual surveys.

Orchard surveys to assure apple maggot free status will be performed under a compliance agreement with the local county agricultural commissioner (CAC) and the participating exporters, and may be funded by the participating growers. Sample compliance agreements can be found in Appendices B and C. Any apple producer intending to export apples to a county with an apple maggot ordinance, or another state or country requiring an annual survey, must participate in this program to qualify for origin, or freedom from, apple maggot certification. The level of trapping for certification of apples is reduced further if the origin county maintains an apple maggot ordinance to restrict the movement of apples into the county; and when the apples are destined for market in a county maintaining an ordinance against apple maggot.

NOTE: Apples regulated for other pests by the destination state or country must continue to meet those requirements as well.

A. Counties maintaining an ordinance against apple maggot will use the following certification trapping program:
1. Funding for the program may be at the expense of the participating growers, if the certifying county wishes to charge for the service.

2. All traps shall be placed and monitored by the CAC. The Pherocon AM trap shall be used; these traps will be placed according to the procedures described in CDFA's Detection Trapping Guide and according to the following:

a. traps shall be in place by the first of June and shall remain in place through September of each year;

b. traps shall be placed at a density of 1 trap/10 acres, with no fewer than 4 traps/block; and a maximum of 40 traps/640 contiguous acres. Traps shall be placed around the perimeter of the orchard but on trees in the second row to minimize contamination with dust;

c. traps shall be serviced bi-weekly and shall be replaced at least every 4 weeks, more often if traps become dirty.

3. Quality control inspections of all traps shall be conducted routinely by the CAC.

4. All apple maggot suspects, adults and immature stages, will be submitted to the Plant Pest Diagnostics Branch for confirmation.

5. If apple maggot is detected within an orchard, the orchard shall be treated at the expense of the orchard owner using conventional pest control practices, in a manner approved by and under the supervision of the CAC; and the orchard owner shall reimburse the CAC for the cost of supervising the treatment. Apples from that orchard shall not be certified for apple maggot for the remainder of that year's growing season unless the prescribed treatments are conducted and cold treatment or controlled atmosphere treatment is used for certification.

If apple maggot is detected in an orchard and the aforementioned treatment is not conducted as required the pest shall be abated as provided for in Section 5401 et seq., of the California Food and Agricultural Code.

6. It will be the responsibility of the packer to assure identity of certifiable lots throughout the packing and storage process.

B. For counties that do not establish an ordinance against apple maggot the following certification trapping protocol must be used:

1. Funding for the program may be at the expense of the participating growers, if the certifying county wishes to charge for the service.

2. All traps shall be placed and monitored by the CAC. The Pherocon AM trap shall be used; these traps will be placed according to the procedures described in CDFA's Detection Trapping Guide and according to the following:

a. traps shall be in place by the first of June and shall remain in place through September of each year;

b. traps shall be placed at a density of 1 trap/10 perimeter trees (minimum 2/acre), or every 300 feet for high density plantings; with no fewer than 4 traps/block. Traps shall be placed around the perimeter of the orchard but on trees in the second row to minimize contamination with dust.

c. traps shall be serviced bi-weekly and shall be replaced at least every 4 weeks, more often if traps become dirty.

3. Quality control inspections of all traps shall be conducted routinely by the CAC.

4. All apple maggot suspects, adults and immature stages, will be submitted to the Plant Pest Diagnostics Branch for confirmation.

5. If apple maggot is trapped within 1/2 mile of a participating orchard, but not within the orchard, the apples from that orchard may be certified if apple maggot is undetected following additional inspection as detailed in Sampling Procedures below.

6. If apple maggot is detected within an orchard, the orchard shall be treated at the expense of the orchard owner using conventional pest control practices in a manner approved by, and under the supervision of, the CAC; and the orchard owner shall reimburse the CAC for the cost of supervising the treatment. Apples from that orchard shall not be certified for apple maggot for the remainder of that year's growing season unless the prescribed treatments are conducted and cold treatment or controlled atmosphere treatment is used for certification.

7. It will be the responsibility of the packer to assure identity of certifiable lots throughout the packing and storage process.

C. For those apple maggot ordinance counties producing apples for intrastate movement only and final destination to another apple maggot ordinance county the following certification trapping program may be used:

1. Funding for the program may be at the expense of the participating growers, if the certifying county wishes to charge for the service.

2. All traps shall be placed and monitored by the CAC. The Pherocon AM trap shall be used; these traps will be placed according to the procedures described in the CDFA's Detection Trapping Guide and according to the following:

a. traps shall be in place by the first of June and shall remain in place through September of each year;

b. traps shall be placed at a density of 1 trap/block for blocks less than 1 acre; 2 traps/block for blocks from 1 to 5 acres; 4 traps/block for blocks from 5 to 40 acres; 4 traps + 1 trap for each additional 10 acres, or portions thereof for blocks greater than 40 acres with a maximum of 40 traps/640 contiguous acres;

c. traps shall be serviced bi-weekly and shall be replaced at least every 4 weeks, or more often if the traps become dirty.

3. Quality control inspections of all traps shall be conducted routinely by the CAC.

4. All apple maggot suspects, adults and immature stages, will be submitted to the Plant Pest Diagnostics Branch for confirmation.

5. If apple maggot is detected within an orchard, the orchard shall be treated at the expense of the orchard owner using conventional pest control practices, in a manner approved by and under the supervision of the CAC; and the orchard owner shall reimburse the CAC for the cost of supervising the treatment. Apples from that orchard shall not be certified for apple maggot for the remainder of that year's growing season unless the prescribed treatments are conducted and cold treatment or controlled atmosphere treatment is used for certification.

If apple maggot is detected in an orchard and the aforementioned treatment is not conducted as required the pest shall be abated as provided for in Section 5401 et seq., of the California Food and Agricultural Code.

6. It will be the responsibility of the packer to assure identity of certifiable lots throughout the packing and storage process.

7. Quarantine compliance certificates will be required for all shipments moved under this program with the following additional declaration (AD):

"The apples were organically produced, trapped and found negative for apple maggot. For intrastate use only; not for export."
or
"The apples were produced using conventional pest control practices. For intrastate use only; not for export."

SAMPLING PROCEDURES

Procedures for sampling harvested apples for commercial packing for apple maggot infestation.

1. Samples must be taken from all grower lots of an orchard within 1/2 mile of an apple maggot fly find.

2. The sampling rate will be 100 apples per 100 containers in each grower lot.

3. The sample shall be drawn from at least 2 containers for each 100 containers in the grower lot.

4. The sample shall be examined for external evidence of apple maggot infestation.

5. At least 20 apples shall be cut and inspected internally for evidence of apple maggot infestation.

6. If apple maggot injury is detected, at least 100 apples from the grower lot shall be cut and inspect for apple maggot larvae.

7. The grower may not ship under this agreement if:

a. The lot sampled contains apple maggot or any other serious plant pest; or more than,

b. 0.5% of the fruit shows larval damage; or,

c. 4.0% of the fruit displays evidence of infestation.

SAMPLE COMPLIANCE AGREEMENT - A

A. Sample compliance agreement for use in those counties maintaining an apple maggot ordinance:

Name and Mailing Address of Establishment:

Location of growing area(s):

Regulated Articles Handled: Apple orchards and apples destined for shipment to other states or countries requiring annual surveys.

1. Funding for the program may be at the expense of the participating growers, if the certifying county wishes to charge for the service.

2. All traps shall be placed and monitored by the CAC. The Pherocon AM trap shall be used; these traps will be placed according to the procedures described in CDFA's Detection Trapping Guide according to the following:

a. Traps shall be in place by the first of June and shall remain in place through September of each year.

b. Traps shall be placed at a density of 1 trap/10 acres, with no fewer than 4 traps/block; and a maximum of 40 traps/640 contiguous acres. Traps shall be placed around the perimeter of the orchard but on trees in the second row to minimize contamination with dust.

c. Traps shall be serviced bi-weekly and shall be replaced at least every 4 weeks, more often if traps become dirty.

3. Quality control inspections of all traps shall be conducted routinely by the CAC.

4. All apple maggot suspects, adults and immature stages, will be submitted to the Plant Pest Diagnostics Branch for confirmation.

5. If apple maggot is detected within an orchard, the orchard shall be treated at the expense of the orchard owner using conventional pest control practices in a manner approved by, and under the supervision of, the CAC; and the orchard owner shall reimburse the CAC for the cost of supervising the treatment. Apples from that orchard shall not be certified for apple maggot for the remainder of that year's growing season unless the prescribed treatments are conducted and cold treatment or controlled atmosphere treatment is used for certification.

If apple maggot is detected in an orchard and the aforementioned treatment is not conducted as required the pest shall be abated as provided for in Section 5401 et seq., of the California Food and Agricultural Code.

6. It will be the responsibility of the packer to assure identity of certifiable lots throughout the packing and storage process.

7. Other requirements, where applicable, may be prescribed by the CAC and may include, but are not limited to: placement and monitoring of additional traps, treatments and the use of prescribed sanitary measures.

B. The affixing of both signatures will validate this Agreement, which shall remain in effect until canceled, but may be revised as necessary or revoked for noncompliance.

Company Representative's Name:

Company Representative's Signature:

Title: Date Signed:

Agreement Number: Date of Agreement:

County Agricultural Commissioner's Signature:

SAMPLE COMPLIANCE AGREEMENT - B

A. Sample compliance agreement for use in those counties which do not maintain an apple maggot ordinance:

Name and Mailing Address of Establishment:

Location of growing area(s):

Regulated Articles Handled: Apple orchards and apples destined for shipment to other states or countries requiring annual surveys.

1. Funding for the program may be at the expense of the participating growers, if the certifying county wishes to charge for the service.

2. All traps shall be placed and monitored by the CAC. The Pherocon AM trap shall be used; these traps will be placed according to the procedures described in CDFA's Detection Trapping Guide according to the following:

a. Traps shall be in place by the first of June and shall remain in place through September of each year;

b. Traps shall be placed at a density of 1 trap/10 perimeter trees (minimum 2/acre), or every 300 feet for high density plantings; with no fewer than 4 traps/block. Traps shall be placed around the perimeter of the orchard but on trees in the second row to minimize contamination with dust;

c. Traps shall be serviced bi-weekly and shall be replaced at least every 4 weeks, more often if the traps become dirty.

3. Quality control inspections of all traps shall be conducted routinely by the CAC.

4. All apple maggot suspects, adults and immature stages, will be submitted to the Plant Pest Diagnostics Branch for confirmation.

5. If apple maggot is trapped within 1/2 mile of an orchard, but not within the orchard, the apples from that orchard may be certified if apple maggot is undetected following additional inspection as detailed in sampling procedures.

6. If apple maggot is detected within an orchard, the orchard shall be treated at the expense of the orchard owner using conventional pest control practices in a manner approved by, and under the supervision of, the CAC; and the orchard owner shall reimburse the CAC for the cost of supervising the treatment. Apples from that orchard shall not be certified for apple maggot for the remainder of that year's growing season unless the prescribed treatments are conducted and cold treatment or controlled atmosphere treatment is used for certification.

7. It will be the responsibility of the packer to assure identity of certifiable lots throughout the packing and storage process.

8. Other requirements, where applicable, may be prescribed by the CAC and may include, but are not limited to: placement and monitoring of additional traps, treatments and use of prescribed sanitary measures.

B. The affixing of both signatures will validate this Agreement, which shall remain in effect until canceled, but may be revised as necessary or revoked for noncompliance.

Company Representative's Name:

Company Representative's Signature:

Title: Date Signed:

Agreement Number: Date of Agreement:

County Agricultural Commissioner's Signature:

SAMPLE COMPLIANCE AGREEMENT - C

A. For those apple maggot ordinance counties producing apples for intrastate movement only and final destination to another apple maggot ordinance county the following certification trapping program may be used:

Name and Mailing Address of Establishment:

Location of Growing Area(s):

Regulated Articles Handled: Apple orchards and apples destined for shipment to other apple maggot ordinance counties.

1. Funding for the program may be at the expense of the participating growers, if the certifying county wishes to charge for the service.

2. All traps shall be placed and monitored by the CAC. The Pherocon AM trap shall be used; these traps will be placed according to the procedures described in the CDFA's Detection Trapping Guide and according to the following:

a. traps shall be in place by the first of June and shall remain in place through September of each year;

b. traps shall be placed at a density of 1 trap/block for blocks less than 1 acre; 2 traps/block for blocks from 1 to 5 acres; 4 traps/block for blocks from 5 to 40 acres; 4 traps + 1 trap for each additional 10 acres, or portions thereof for blocks greater than 40 acres with a maximum of 40 traps/640 contiguous acres.

c. traps shall be serviced bi-weekly and shall be replaced at least every 4 weeks, or more often if the traps become dirty.

3. Quality control inspections of all traps shall be conducted routinely by the CAC.

4. All apple maggot suspects, adults and immature stages, will be submitted to the Plant Pest Diagnostics Branch for confirmation.

5. If apple maggot is detected within an orchard, the orchard shall be treated at the expense of the orchard owner using conventional pest control practices, in a manner approved by and under the supervision of the CAC; and the orchard owner shall reimburse the CAC for the cost of supervising the treatment. Apples from that orchard shall not be certified for apple maggot for the remainder of that year's growing season unless the prescribed treatments are conducted and cold treatment or controlled atmosphere treatment is used for certification.

6. If apple maggot is detected in an orchard and the aforementioned treatment is not conducted as required the pest shall be abated as provided for in Section 5401 et seq., of the California Food and Agricultural Code.

7. It will be the responsibility of the packer to assure identity of certifiable lots throughout the packing and storage process.

8. Quarantine compliance certificates will be required for all shipments moved under this program with the following additional declaration (AD):

"The apples were organically produced, trapped and found negative for apple maggot. For intrastate use only; not for export."
or
"The apples were produced using conventional pest control practices. For intrastate use only; not for export."

B. The affixing of both signatures will validate this agreement which shall remain in effect until canceled but may be rescinded as necessary or revoked for non-compliance.

Company Representative's Name:

Company Representative's Signature:

Title: Date Signed:

Agreement Number: Date of Agreement:

County Agricultural Commissioner's Signature:

1. The lists would contain qualified conventional and qualified organic growers from other counties or states who wish to ship either packed or bulk apples. Lists shall include grower's name, grower's address, identification of orchard(s) from which apples will be shipped, and labels (brands).

2. Non-ordinance counties include out-of-state areas which do not have apple maggot ordinances or pestcontrol districts.

3. Lot identification = bin tags with grower's lot numbers and identification; only structurally sound bins, gondolas, or other bulk containers are to be used.

4. Quarantine Compliance Certificates would state that the apples come from a county where: the apples were produced using conventional pest control practices; or the apples were organically produced, trapped and found negative for apple maggot.

5. Tarping required for bulk apples originating from other states only.

6. Requirements apply to regulated areas within the county only (e.g., Cebada Canyon and the Cuyama Valley).

4.3.3 NURSERY STOCK CERTIFICATES TO OTHER STATES

STATES UNDER AGREEMENT
States entering into agreement under conditions set by the National Plant Board does not require California nurseries to file a copy of their inspection certificate with the destination state. To comply with the agreement, Nursery and Seed Services will file a copy of the "Directory of Nurserymen and Others Licensed to Sell Nursery stock in California" with the states entering into the agreement. A nursery stock certificate, and special certificates required by some states (Brown garden snail, etc.), must still accompany each shipment.

STATES UNDER AGREEMENT
Filing of inspection certificate not required:

Arkansas	Nebraska
Delaware	New Jersey
Florida	New Mexico
Georgia	New York
Indiana	North Carolina
Iowa	North Dakota
Maine	South Carolina
Maryland	South Dakota
Minnesota	Texas
Missouri	West Virginia
Michigan	Wisconsin

STATES NOT UNDER AGREEMENT
Filing of certificates may be required:

Refer to National Plant Board's "Summary of State Regulations " for details. Firms licensed to sell nursery stock should be advised to reproduce a copy of the California Nursery Stock Certificate as authorized by the county agricultural commissioner (Form 64-079) and mail it to the state official requiring the certificate.

The certificate to be filed will be numbered according to the prescribed method:

1. Firms licensed to sell nursery stock will use the first four digits of their permanent license number.

2. Origin inspected warehouse shipping seed will use the series of letters and numbers as described in the Origin Inspected Warehouse Procedural Manual.

3. Firms not required to have licenses to sell nursery stock or not designated as Origin Inspected Warehouses will use the official county number followed by a hyphen and a numerical sequence number. Examples: Alameda County No. 01-1; Los Angeles County No. 19-1.

Firms will be notified of specific interior quarantines that apply and advised that Nursery Stock Certificates must not be used on any shipments of host material unless accompanied by the required quarantine certificate or permit.

When mailing certificates to officials of other states, the firm should request a full statement by the other state of all the requirements to be met as to quarantines, permits, certificates, markings, fee, etc., and the kinds of nursery stock covered by the requirements in order that shipments of nursery stock may be made in compliance with restrictions of that state.

Although CDFA cannot enter into formal agreements with other states, California nurserymen are entitled to the full benefit of the "Reciprocal Agreement" as to remission of fees, in the case of all states, which entered that agreement.

North Dakota At the time of issuance of the certificate to a firm licensed to sell nursery stock or a seed firm one copy shall be transmitted to Nursery and Seed Services, Division of Plant Industry for their files. Mailing Addresses of States Plant Regulatory Officials are available.

CUT FLOWERS TO TEXAS: A nursery stock certificate must accompany each shipment of cut flowers destined to Texas. The USDA "Summary of State Regulations" for Texas indicates that a "Texas Importation Permit" is required for plant material. This "Importation Permit" actually refers only to foreign plants and plant cuttings. It is a tool used by Texas officials to keep control of foreign plants and cuttings destined to their state.

4.3.4. OTHER INFORMATION AND POLICIES

1.3..1. Guidelines for inspection of containerized shipment of plant material
1.3..2. Diversion of pest infested material – intrastate
1.3..3. Diversion of pest infested material – interstate
1.3..4. Proper markings on plant material packages
1.3..5. Hay inspections
1.3..6. Inspection of forage: growing, baled or other products for noxious weeds

4.3.4.1 GUIDELINES FOR INSPECTION OF CONTAINERIZED SHIPMENT OF PLANT MATERIAL

Check for the following:

• Type or kind of plant material in shipment
• Origin of material
• Stage of growth or condition of plants
• Type of wrappings around plant material
• Type, kind or amount, of pests or diseases on plants
• Size, type or kind of container and sub-container
• Does shipment have host, non-host or both materials

Guidelines
Receivers of plant material are to hold shipments intact, unopened until County Agricultural Commissioner have been notified of arrival.

Inspect and Release**:** After close inspection in the container, and certifications requirements are met. If there are no pests and/or diseases found, plant material can be released.

Infested or Contaminated Shipments
- If pests are found in a mixed container, inspector should check if other lots are also infested, and if the shipment should be rejected.
- If approved treatments are available, shipper can elect to treat material. Inspector can release material after treatment.
- If there is no available treatment(s), infested materials should be rejected and returned to origin, shipped out-of-state under a Rejection Notice, or destroyed under the supervision of enforcement officer.

4.3.4.2 DIVERSION OF PEST INFESTED MATERIAL – INTRASTATE

Except in the case of feed grain and seed screenings moving to approved mills and establishments, no pest infested or contaminated material is to be permitted movement from one county to another county without the destination Commissioners approval.

4.3.4.3 DIVERSION OF PEST INFESTED MATERIAL – INTERSTATE

The following procedure should be used when a shipment is rejected and the shipper elects to ship out-of-state.
- Contact the receiving state, if possible. This could be done through the broker, shipper or receiver.
- If shipper elects to return to origin, safeguard shipment until it leaves state.
- If shipper elects to send material to another state
  - If rejection is due to lack of proper certificate, determine if would be in violation of the receiving state
  - If not in violation, safeguard until it leaves state
  - If in violation of receiving state, do not release unless receiving state is contacted and agree to accept.
  - If receiving state will not accept, do not release.
- If rejection was due to finding of an “A” or “Q” rated pest and/or disease, contact receiving state
  - If shipment is acceptable by the state, then safeguard until it leaves state.
  - If shipment is not acceptable, do not release.
- If broker, shipper or receiver insists on shipping to a state that indicated that they would “not accept”, notify shipper of consequences and contact CDFA Pest Exclusion Office in Sacramento or County Agricultural Commissioner, if inspector is county staff.

4.3.4.4. PROPER MARKINGS ON PACKAGES OF PLANT MATERIAL

Both the US Postal Service and CDFA have marking requirements on packages containing plant material entering California. These requirements also include packages sent by rail, ship, air, truck lines or private carriers like UPS, FEDEX, DHL, etc

Section 6421 of California Food and Agricultural Code States "Each shipment of plants which is brought into this state shall have legibly marked upon it in a conspicuous manner and place all of the following:

- The name and address of the shipper or owner.
- The name of the person to whom the shipment is forwarded or shipped or the name of his/her agent.
- The name of the country, state, or territory where the contents were grown.
- A statement of its contents

Packages should be plainly marked with the word "Plant Material", Live Plant(s)" or "Plant(s)" on the upper or face side of the package.

The above section states "marked upon it in a conspicuous manner" This means the identity word "Plant Material", Live Plant(s)" or "Plant(s)" are to be on the upper of face side of the package. Markings on other locations, away from the address label are not in compliance. Information on where the contents were grown, and the exact name of plant need not be on the outside of the package. At times the package size could limit space for such extra information.

The USPS Terminal Inspection for Plants and Plant Production Act, Section V, states "States and Territories Requiring Inspection. The packages must be plainly marked on the outside to show the exact nature of their content". USPS Publication 14, 1974 interpret the above section that markings must be on top of the package, near the top of the package, near the address and zip code, to expedite delivery and avoid delays.

It is recommended that all packages of plant material not properly marked be rejected at destination, and returned to sender at their expense or destroyed.

4.3.4.5 HAY INSPECTION

Border Inspectors examine the exterior surface of the outer bales of hay for the presence of mature primary noxious weed seeds, cotton contamination or other pests. If found clean, inspector will stamp papers with station stamp, date, initial and release.

If viable primary noxious weed seeds are found, Inspector will reject and issue a Rejection Notice for shipment out of state (reference Section 6341 CAC.) or if consigned to or diverted to an approved hay mill, send to destination with a "Warning - Quarantine Notice."

This inspection procedure does not affect the usual inspection for other quarantine requirements.

If inspection is not done at the border station, Quarantine Warning Notice is issued with a notation to the Commissioner at destination explaining the reason. The bills covering shipments sent through for destination handling should be stamped "Warning - Hold for Inspection."

4.3.4.6 INSPECTION OF FORAGE: GROWING, BALED OR OTHER PRODUCTS FOR NOXIOUS WEEDS

The preferred inspection of forage for noxious weeds in the growing field is prior to harvest. Post-harvest inspection of processed forage may be performed at the discretion of the county agricultural commissioner. Authority to certify forage as weed free is permitted under sections 5101 and 5205 under authority of section 403 of the California Food and Agricultural Code.

A Certificate of Quarantine Compliance (CQC) may be issued if:

1. No noxious weeds are found after a reasonable and prudent visual field inspection within 10 days prior to harvest.
   - The pre-harvest inspection for noxious weeds in cereal crops should follow the walking pattern outline in Section 3.6.3.1.
   - The pre-harvest inspection for noxious weeds in other crops should follow the walking pattern outline in Section 3.6.3.1.
2. No noxious weeds are found in processed forage (harvested/baled) after a visual inspection of:

- 100% of all visible surfaces of at least 10 bales or 3% of the total number of bales, whichever is greater, taken randomly from the lot.
- If an inspector, after visually inspecting the lot suspects that noxious weeds may be present, s/he may open the bale(s) to inspect or sample for noxious weeds.

Copies of the CQC must accompany any bill of sale for all portions of the processed forage harvested from a certified field or inspected after harvest to maintain the identity of the forage.

Definitions:
"Noxious weeds" mean propagative plant parts and seeds from plants listed in section 4500, title 3, division 6, subchapter 6 of the California Code of Regulations.
"Propagative plant parts" are any part of a plant capable of reproducing themselves, including live roots, rhizomes, and/or stolons present in the forage to be harvested.
"Forage" includes hay, straw, or mulch and straw wattles.

SECTION V: TRAINING REFERENCE MATERIALS

5.1 TRAINING REFERENCE MANUALS

The daily performance of Interior Pest Exclusion Program activities requires use of several manuals and handbooks to carry out essential functions effectively and meaningfully. Inspectors work closely with Federal (USDA), State (CDFA) and County (CAC) officials. Manuals are not listed in order of importance. Each one serves a definite purpose. None of the manuals can be used with any confidence if they are not kept up-to-date. It is essential that inspectors know how to use each manual correctly and efficiently. As technology changes it is CDFA's goal to place state issued material on the internet/online.

A. CALIFORNIA DEPARTMENT OF FOOD AND AGRICULTURE MANUALS

(Order through CDFA Pest Exclusion District Office)

1. California Food & Agricultural Code

(Website: Food and Agricultural Code)

The California Food and Agricultural Code, more commonly known to most of us as the Ag Code, contains laws relating to plant and animal industry. Each section of the code, amendment, or revision must pass through the State Legislative process in order to become legal. The code provides legal authority to the California Department of Food and Agriculture to establish quarantines that protect and promote the state's agricultural industry. A section of the code gives authority to a State plant quarantine officer to reject plants and other restricted articles that arrive in the State that have been moved in violation of a Federal/state/county regulations.

2. Plant Quarantine Manual

(Website: Plant Quarantine Manual)

The California Code of Regulations (CCR) is an official publication of the State of California. The CCR contains law which has been promulgates by individual state departments or agencies according to authority granted by the Legislature. Regulations that pertain to plant quarantine are assembled together in the Plant Quarantine Manual, for quick reference by plant quarantine officers. The regulations include federal foreign, territorial and domestic quarantines; state exterior and interior quarantines as well as county restrictions.

3. County Procedural Training Manual

(Extranet site: *Login Access required!)*

If you are reading this page, then you either have access or got a copy of the manual. This is the manual. It is a combination of several manuals; Quarantine Commissioners Circular, County Pest Exclusion Training, Plant Quarantine Inspection Training Aid etc.

4. Agricultural Commodity Identification Aid Manual

(Website: Ag Commodity Identification)

The manual is a pictorial guide created as an aid to assist Agricultural inspectors and other users with the identification of exotic commodities not normally encountered in California. The commodities are additionally indexed by common or scientific names.

5. Commodity Treatment Manual

(Extranet site: *Login Access required!)*

This manual addresses specific commodity treatment needs of California. It is complementary to the USDA/ APHIS/ PPQ Treatment Manual.

6. Pest Rating Manual

(Extranet site: *Login Access required!)*

This publication is available online only. It is based on the "Action Oriented Pest Rating System." Pests are rated (A, B, C, D, Q, etc) to provide guidance upon the regulatory action to be taken.

B. USDA/APHIS/PPQ MANUALS

(Order information: see Pest Exclusion Advisory 15-99)

1. Non-propagative Manual

(Website: Non-propagative)

The manual highlights the following regulations:

i.) Imported plants not intended for propagation that could harbor exotic pests or diseases.
ii.) Non-plant articles (like goatskin, brassware, and beeswax) of foreign origin that might serve to introduce exotic pests and parasites.
iii.) Articles of plant and non-plant origin, including those intended for propagation, moving from Hawaii and possessions and territories of the United States.
iv.) Protect plants that are threatened with extinction due to trade in those plants or their derivatives.

2. Propagative Manual

(Website: Propagative manual)

This manual is used for regulating the importation of seeds capable of germinating and intended for planting.

3. Export Certification Manual
(Website: Export Certification Manual)
The Export Certification Manual is a guide to Federal, State and County staff responsible in the inspection and certification of plants and plant products and issuing export certificates. The manual covers information about USDA's EXCERPT, an electronic database that provides information on import requirements of foreign countries. It also provides the methods and procedures for certifying plants and/or plant products offered for export.

4. Treatment Manual
(Website: Treatment Manual)
Treatment schedules listed in the manual are used to eradicate plant pests of quarantine significance found in, on, or with commodities offered for entry into, export from, or for movement within the United States. The manual also serves as a reference for researching the types of treatments available for imports and to answer questions from importers, industry, and foreign countries.

5. Nursery Stock Restrictions Manual (Port of Entry)
(Website: Nursery Stock Restrictions)
This manual provides a guide to Inspectors in making decisions to approve or disapprove postentry growing sites. How to inspect nursery stock for plant pathogens, and the proper use of forms associated with the Postentry Quarantine Unit Programs.

5.2. REGULATIONS AND LIFE HISTORIES OF SELECTED PLANT PESTS

1. CITRUS CANKER
Xanthomonas campestris pv. citri

Quarantines - State Exterior (CCR 3250)
- Federal Domestic (CFR 301.75)
- Federal Foreign (CFR 319.28)

Type of Pest - Bacteria

Host - Citrus are susceptible to this disease. Grapefruit seems most susceptible followed by limes, sweet orange-Valencia etc and lemons, in order of the decreasing susceptibility.

Symptoms - The first evidence of the disease is young lesions that appear on the leaves as small yellowish spots about the size of a pinhead (1/16" in diameter) usually found on the lower surface. The lower lesionssoon become a small, white, spongy eruption on the lower surface, which usually turn tan or brown. The upper surface lesions are often ruptured and spongelike. Often there is a watery, glazed margin around the eruptions, which may be somewhat raised and yellowish-brown to green in color. In a few weeks, on an actively growing leaf, a lesion may be 3 to 4 mm in diameter, brown and roughened on both surfaces with a chlorotic area around the main lesion producing a watery, halo-like appearance and is yellow, shading into normal green. The older lesions become brown, hard, corky, lignified and more irregular than the young circular lesions. On the fruit, cankers are similar to the leaf symptoms except that they do not commonly show the yellow halo and have a more crater-like appearance with the margins being elevated and the centers sunken. Branch and twig cankers are often several inches long.

Inspection for Citrus Canker – The disease may be distinguished from other diseases by the following features of the lesions:
1. Elevated and apparent to touch on both surfaces
2. Have glazed margins with oily appearance
3. Crater-like appearance, best observed with a hand lens or microscope.

2. GUMMOSIS OF SUGARCANE
Xanthomonas vasculorum

Quarantine - Federal Domestic (CFR 301.87)

Type of Pest - Bacteria

Hosts - The primary host of this disease is sugarcane, but it may also be found infecting Johnson grass, Sudan grass, maize, bamboo, and several species of palm.

Symptoms - Yellow to orange streaks, often with red flecks, on mature leaves are characteristic symptoms of gummosis disease. These streaks follow the vascular bundles and may be several centimeters in length, but only 3 to 6 mm wide. Systemic infection results in short, narrow, dark red, gum filled streaks on the blade of young leaves and the underside of midribs that extend onto the sheaths. Chlorotic areas often appear in a single leaf, or on several leaves on an infected plant, usually with scattered reddish spotting. The chlorosis may disappear followed by normal growth, but more often the infected plant is killed.

Transmission - The primary means of spreading of this disease is through the use of diseased sets or cuttings. The disease may be further disseminated when planting materials are cut using a contaminated knife.

Inspection for Gummosis - Check host plants for above symptoms. Submit any suspicious plants to CDFA Plant Pest Diagnostic Laboratory, Pathology Unit for identification.

3. LEAF SCALD OF SUGARCANE
Xanthomonas albilineans

Quarantine - Federal Domestic (CFR 301.87)

Type of Pest - Bacteria

Hosts - Although only sugarcane has been found infected naturally, several other plants are susceptible, including bamboo grass and corn.

Symptoms - Typical foliar symptoms sometimes referred to as the "chronic phase" of the disease, consist of narrow, elongated, light colored lesions with well defined margins that may extend onto leaf sheaths. These symptoms occur on stunted plants with leaves held stiffly upward and curled inward with scalded apical ends. Vascular bundles, as seen in longitudinal sections of diseased stalks, are discolored bright red, particularly in the nodes and where shoots arise. Plants affected by the "acute phase" of the disease may show none of the above symptoms before they suddenly wilt and die. Typical symptoms may appear later in stalks that arise from the bases of dead stalks.

Transmission - Most often the disease is spread through the use of infected seed cuttings and knives. The bacterium can be transmitted to healthy canes by a cutting knife used on infected canes.

Inspection or leaf scald - Inspect plants for symptoms as listed above. Submit any suspicious plants to CDFA PPD, Pathology Lab for further identification.

4. PIERCE'S DISEASE
Xylella fastidiosa

State Miscellaneous Ruling (CCR 3650)

Type of Pest – Bacteria

Hosts – The bacteria attacks grape vines and is referred to as Pierce's Disease. The pathogen also causes Almond Leaf Scorch in almonds, Alfalfa Dwarf in alfalfa, Oleander Leaf Scorch in oleander and Citrus variegated chlorosis in citrus.

Transmission – A leafhopper, the Glassy-winged Sharpshooter (*Homalodisca coagulata*), is a major vector.

Symptoms – Vines develop symptoms of the disease when the causal bacteria cause a blockage of the water conducting system, greatly reducing the flow of water to leaves. The first evidence of Pierce's Disease infection is usually a drying or "scorching" of leaves. Foliar symptoms gradually spread out toward the cane from the point of infection. The oldest leaves show severe scorching and the youngest leaves may not have any symptoms. Eventually the canes become affected and dieback along with the roots.

Inspection for Pierce's Disease – Symptoms of several other grape disorders can be confused with Pierce's Disease. Eutypa dieback symptoms in spring mimic those of Pierce's Disease. Nutrient deficiencies cause similar symptoms. Excessive salt build up in the soil and herbicide injury can cause similar symptoms. The time of appearance, extent, and severity of symptoms depend to some degree on temperatures and available soil moisture. Shallow soils, moisture stress, or very high temperatures can cause sudden collapse of vines or portions of vines. Pierce's Disease has more severe effects in hot than cooler climates. In California symptoms tend to appear sooner and vines die more quickly in the Central Valley than coastal regions. Although no European grape variety is immune to Pierce's Disease, some varieties always have fewer vines infected and decline much more slowly after infection is evident.

Link: CDFA Pierce's Disease Control Program

5. BLACK STEM RUST
Puccinia graminis

Quarantine - Federal Domestic (CFR 301.38)

Type of Pest - Fungus

Hosts - Wheat, barley, oats, rye, wild grasses, barberry, Mahonia, and Mahoberberis.

Symptoms – The disease is widespread and requires alternate hosts like barberry, Mahonia, Mahoberberis, etc to complete its life cycle (heteroecious), Its development can be restrained by eliminating alternate hosts. In the northern states, the fungus overwinters on wild grasses and grain straw. The black or teliospore stage germinates in the spring, producing sporidia spores, which infect leaves of the alternate hosts. These sporidia spores cannot infect grains or grasses. The disease on the alternate hosts produces two types of spores, pycniospores which appear on the upper surface of the leaves and the aeciospores which are produced on the under side. The latter spore infects nearby grains and grasses, which in turn produce the red urediospores. Red spores spread from grain to grain or grasses to grasses throughout the growing season. The black teliospores are then produced and the life cycle is complete. In the South, the rust may overwinter in the red stage and spread north as the season advances. The disease does not reach economic levels in California because few alternate hosts exist.

6. CEDAR-APPLE RUST
Gymnosporangium juniperi-virginianae

Quarantine - State Exterior (CCR 3274)

Type of Pest - Fungus

Hosts - Many species of juniper (*Juniperus* spp.) and nearly all species of apple and crabapple (*Malus* spp.) Description – A heteroecious pathogen which passes part of its life cycle on apple trees, and a part on susceptible species of junipers.

Symptoms - The symptoms on apple begin as yellowish spots, up to ½" in diameter in size, on leaves and, occasionally, on young twigs and immature fruits. These lesions turn orange, and bright orange bands finally develop around the orange centers. Tiny pimples, visible on magnification, may appear on the upper surface of the lesion. The lower surface, of the leaf, may produce tiny cups filled with brown powder (aeciospores). On juniper, galls somewhat spherical in shape, form on leaves and stems. They are brick red to chocolate in color and may vary from 1/16" to 2" in diameter. The galls are smooth when young; becoming rougher surfaced with age. Juniper trees may show only a few galls, or they may be so heavily infested that their branches begin to bend with the weight of the spores.

Life Cycle – Cedar-apple rust may be found in apple trees from April through August and in junipers from September to mid-summer of the following year.

Inspection for Cedar-Apple Rust - Check both apple and juniper for symptoms as described above. Any host plants showing these should be submitted to CDFA Plant Pathology Lab for further identification. The disease could be confused with apple scab. A common apple disorder found throughout the apple growing regions of the world. Apple scab also produces lesions on apple fruits and leaves, however these lesions are generally brownish to black in color and have a corky texture.

7. CHESTNUT BARK DISEASE (Chestnut Blight)
Endothia parasitica

Quarantine - State Exterior (CCR 3251)

Type of Pest - Fungus (Ascomycete)

Host - All species and varieties of chestnut, *Castanea* spp., and Chinquapin, *Castanopsis* spp.

Symptoms - Conspicuous reddish bark cankers form on trunk and limbs. Thereafter, the bark swells and splits longitudinally. As limbs are girdled the foliage blights so that brown shriveled leaves can be seen from a distance. The fungus spores abundantly in crevices of broken bark; first producing conidia extruded in yellow tendrils from reddish pycnidia and later ascospores from perithecia embedded in orange stromata*. Fans of buff-colored mycelium are found under affected bark.

Transmission - The ascospores can be carried by wind for many miles landing in open wounds, but the sticky conidia are carried by insects and birds. The fungus can live indefinitely as a saprophyte.

Control - Quarantine of host material from the infested areas is the only means of control. Development of resistant varieties holds the greatest hope.

Inspection for Chestnut Bark Disease - The reddish bark cankers are perhaps the most obvious symptoms. The yellow tendrils of conidia should be discernible, with the aid of hand lens, as small threads if they have not been washed away. The pycnidia are minute chamber embedded in the bark. The orange stromata should be easily demonstrated even if the perithecia cannot be found. The buff-colored mycelium under the bark should be considered an indication of the fungus.

*Stromata are a mass of fungus hyphae often including host tissue containing or bearing spores.

8. CHRYSANTHEMUM WHITE RUST
Puccinia horiana Henn.

Quarantines - State Interior (CCR 3428)
- Federal Domestic (CFR 319.27)

Type of Pest – Fungus

Hosts - Twelve species of chrysanthemum are susceptible. Major susceptible varieties include C. morifolium x C. spp. hybrids (Florists chrysanthemum and Garden or Hardy mums), Nippon daisy, High daisy and C. pacificum. Some varieties are resistant to CWR, including annual chrysanthemum (C. carinatum), crown chrysanthemum (C. coronarium), pyrethrum (Tanacetum coccineum = C. coccineum), marguerite daisy (Argyanthemum frutescens), ox-eye daisy (Leucanthemum vulgare), shasta daisy (Leucanthemum X superbum = C. maximum), corn marigold (C. segetum)

Symptoms – CWR appear as small light green to yellow spots on the upper surface of infected leaves. The spots, which may be dimpled, later turn brown and necrotic/white. Buff to pink colored pustules are formed on the under surface of leaves, especially on young leaves and flower bracts. Pustules can also be found on any green tissue and flowers. Symptoms are limited or absent during hot and dry

weather and can be suppressed by fungicide applications. Symptoms appear during cool, wet conditions and usually develop within 5 to 14 days after infection.

The disease is moved from infected stock to healthy plants primarily by splashing water that contains spores. Free water on the leaves is necessary for spore development. Under optimal conditions, new infection can be established in as little as five hours. CWR spores can travel 1/4 mile under high humidity conditions or during a rainstorm. CWR can also be spread to uninfected plants on contaminated soil, litter, dead leaves, gardening equipment, clothes, shoes and hands. Infectious spores can live for up to eight weeks on contaminated objects.

The spread of the disease has been checked primarily by exclusion/quarantines. Cultural practices, survey, sanitation, and fungicides are employed to eradicate the disease. Infectious spores can only live for up to eight weeks, the disease cycle can be broken by a host free period of equal duration. Management of the humidity and water can also limit disease spread.

9. EUROPEAN LARCH CANKER
Lachnellula willkommii

Quarantine - Federal Domestic (CFR 301.91)

Type of Pest - Fungus

Hosts - All species of the genera *Larix* (larch) and *Pseudolarix* (false larch).

Symptoms - Slow growing twigs and branches are girdled and killed outright. In larger branches, where the growth of the host exceeds or keeps up with that of the fungus, the ensuing contest for mastery gives rise to the formation of large conspicuous cankers, ending in the killing of the affected part or, in rare cases, the defeat of the fungus. In any case the old cankers remain and render the affected parts of the tree commercially valueless. The fruiting bodies of the fungus may appear growing from the bark of infected trees. They appear to the naked eye as small saucer shaped structures with an orange-yellow center surrounded by a slightly incurved white rim. In damp weather, the disks open widely, conspicuously showing the orange center. In dry weather, they curl up and then appear as small whitish spheres.

Inspection for European Larch Canker - Examine both live and dead branches for the presence of the fruiting bodies as described above. Look for cankers and any other unnatural growth patterns. Specimens showing these cankers should be submitted to CDFA Plant Pathology Lab for identification.

10. KARNAL BUNT
Tilletia indica

Quarantines - State Interior (CCR 3430)
- Federal Domestic (CFR 301.89)
- Federal Foreign (CFR 319.59)

Type of Pest - Fungus

Hosts - wheat, durum wheat and triticale (a hybrid of wheat and rye).

Symptoms – Karnal bunt infects host plants during flowering and heading. Symptoms become visible as the grain matures. In severe infection, bunted kernels are more noticeable because of the slight swelling, discoloration, and/or the absence of glumes. Milder infections are not usually visible in the field because only a few florets per head are infected. However, they may be detected at harvest when broken and partially bunted kernels appear in threshed grain. Also, a foul, fishy odor may be detected because of the release of trimethylamine gas by the Karnal bunt teliospores. Visible grain symptoms vary according to the severity of infection. Only when infection is high and the seed is severely bunted can visual observations detect Karnal bunt in the field. The usual symptom, a partially bunted kernel, is not readily apparent in the field. The only reliable way to detect Karnal bunt is through testing of harvested wheat.

Transmission – Infection is spread by spores and occurs during the flowering stage of the plant, when the developing ovary of a host plant comes in contact with infectious sporidia. The ideal conditions for inspection are cool weather and rainfall or high humidity. In soil, the spores may be able to survive as long as five years. The spores can be carried on a variety of surfaces: plants, plant parts, seeds, soil, elevators, buildings, farm equipment, tools, and even vehicles. Spores and the sporidia are fragile and may be able to move only short distances.

Control – all crops in infested fields would be destroyed to eliminate Karnal bunt. The property may be treated to kill any remaining spores. Following treatment, grains(s) infected with Karnal bunt would be used only for nonpropagative purposes or would be destroyed. Host crop(s) would not be planted on any contaminated field for a period of five years from the time of infection.

Inspection for Karnal bunt – Inspectors should look for bunted kernels that are fragile, dark in color, and fishy smelling. The kernel usually remains whole, although part of the germ may be eroded. Cracks in the surface reveal a black powdery spore mass within the endosperm at the embryo end of the kernel or along the kernel grove.

11. OAK WILT
Ceratocystis fagacearum

Quarantine - State Exterior (CCR 3251)

Type of Pest - Fungus (Fungi imperfecti)

Host - All species of oaks (*Quercus* spp). appear to be susceptible. Also chestnut, *Castania* spp., Chinquapin, *Castanopsis* spp., tan bark oak, *Lithocarpus*.

Symptoms - At the onset of the disease there is a slight crinkling and paling of the leaves followed by progressive wilting, bronzing, and browning of leaf blades from the margins toward the midrib. The red oaks display premature defoliation very strikingly and usually succumb to the disease within one to two months. White oaks and bur oaks may persist for several years, with affected branches dying back and producing a staghead effect. The leaves tend to remain on the dead branches differing from the effect on red oaks. There is often a brown streaking in the sapwood of the white and bur group. In the red oaks there is sometimes a brown to black discoloration of the outer annual rings. All or part of the above symptoms may be due to other causes. Proper identification of the causal fungus is necessary.

Transmission - The disease has been known to "jump" distances in excess of one mile. How this occurs is not well known, but woodpeckers, sapsuckers, various insects, and rodents are suspected as being possible vectors. Usually the disease travels from infected trees to adjacent trees producing circular patterns radiating from the original infected tree. In this type of transmission the disease is spread through root grafts.

Control – Removal of infected trees and trenching around the infected areas has been a fairly successful means of controlling local spread. Immediate removal of healthy trees appears to be a better method, especially if the stumps and larger roots as well as all brush are grubbed out and burned. The goal is establishing a buffer to save other healthy trees.

Inspection for Oak Wilt - The alteration of color and dying of the leaves followed by wilt, and the absence or presence of defoliation, coupled with discoloration and streaking in the sapwood or outer annual ring, indicates the possibility of oak wilt and the advisability of further examination by laboratory methods.

12. OZONIUM ROOT ROT
Phymatotrichum omnivorum

Quarantines - State Interior (CCR 3401)
- State Exterior (CCR 3261)

Type of Pest - Fungus

Hosts - Over 1,700 species of plants, including cotton and many other root crops.

Symptoms - This disease is more easily discovered in the field than on individual plants. Infected fields often show large circular spots of infestation. The conidial stage develops on the ground near the outer margin of a zone of infected plants. It had the appearance of a yellow, cushion like mass in this stage, usually becoming apparent only after the plants are wilting or dying. On individual plants, the entire root system is decayed, and the plants slip put of the soil without any effort of pulling. The infected areas enlarge year after year.

Transmission – Ozonium root rot can easily spread by the movement of farm and construction machinery and associated infected soil. Movement of infected plants may also spread the disease. Inspection for Ozonium Root Rot - Affected plants show fine brownish strands of fungus threads (rhizomorphs), that sparsely cover the roots. On larger roots, there are often numerous small cushion-like sclerotia or resting bodies, which are about the size of a pinhead.

13. LETHAL YELLOWING OF PALM

Quarantine - State Exterior (3282)

Type of Pest - Mycoplasmalike Organism. (MLO)

Host – About twenty-six palm species, including date, coconut, and fan palms.

Symptoms – The first observable sign of the disease is fruit drop, then inflorescence necrosis, foliar yellowing and desiccation, root degeneration, spear leaf necrosis, and rapid death.

Transmission - Presumably the disease agent is insect vectored, possibly by a plant hopper (*Myndus crudus*).

Control - Prevent or delay entry by regulatory measures. Restrict new plantings to resistant species and varieties; remove diseased palms.

Inspection for Lethal Yellowing of Palm - Best time to detect the disease is when flowers or fruit are present. Leaf symptoms are visible in any season.

14. LITTLE PEACH

Quarantine - State Exterior (CCR 3259)

Type of Pest - Mycoplasmalike Organism (MLO)

Host - Peach, nectarine, apricot, almond, plum, and prune. Some varieties of plum are known to be symptomless carriers.

Symptoms - On young seedlings peach trees there is a distortion of young terminal leaves on affected branches often accompanied by an excessive number of short branches along the main stem. These short branches are more upright than those produced by normal growth. There is also a shortening of the internodes and a general stunting of the tree. Newly infected trees are generally deeper green in color than unaffected plants. As the disease becomes chronic the mature leaves become slightly yellow with twiggy growth along the branches. The branches become compact and bushy with leathery, curled, dark green leaves, which become lighter as the disease progresses. On older trees, the disease may be confined to only one or a few branches of the tree. The fruit of affected branches is smaller and ripens several days to three weeks prematurely, and has an insipid flavor. The pits are reduced in size, and the kernels are either undeveloped or fail to germinate.

Inspection for Little Peach - Positive identification of the disease on dormant plants is difficult. During the growing season compact, bushy appearance, upright habit of the branches and leathery curled leaves are perhaps the most obvious indications of the disease.

15. PEACH ROSETTE

Quarantine - State Exterior (CCR 3259)

Type of Pest - Mycoplasmalike Organism (MLO)

Hosts - Peach, apricot, almond, plum, nectarine, mazzard, sour and sand cherry.

Symptoms - The first leaves formed are normal in size, but commonly fold inward or arch backward and usually turn a yellowish color with red spots. The leaves usually fall prematurely, dropping in early summer. As the new terminal growth has very short internodes, the newly formed leaves are closely expressed into distinct rosettes. The older leaves are progressively shed, leaving only tufts of younger leaves at the tips of naked twigs. Trees of fruit bearing age usually produce blossoms but they do not mature into fruit. Most affected peach trees die the same year the symptoms appear. The symptoms on other hosts are usually less intense.

Inspection for Peach Rosette - Only after the diseased plant has leaves can this disease be determined. The tufts or rosettes at the tips of branches are the most distinguishable symptoms.

16. PEACH YELLOWS

Quarantine - State Exterior (CCR 3259)

Type of Pest - Mycoplasmalike Organism

Hosts - Peach, nectarine, apricot, and plum are the primary hosts, however no species of the genus *Prunus* is known to be immune.

Symptoms - On peach, fruits ripen a few days to three weeks premature; has a bitter flavor and is of inferior quality. In varieties that normally are red skinned and red-colored around the pit, the skin is abnormally high colored and spotted with purple, while the flesh is streaked and marbled with crimson. The leaves are chlorotic yellow, and tend to roll and drop downward. Shoots are upright, thin, willowy, and bear small, narrow yellow leaves. Leaf buds unfold prematurely into yellowish leaves, about an inch in length, giving the tree a bushy appearance. Trees usually die 2 to 6 years after infection, except in milder strains in which the tree life may be prolonged. The symptoms are similar in appearance and severity on apricot, almond, American and hortulan plums, david peach, almond cherry and Manchu cherry. The effect on other hosts the effect is milder or lacking.

Transmission - The plum leafhopper, *Macropsis trimaculata,* is the only known insect vector. Infected budwood will carry the pathogen to healthy plants.

Inspection for Peach Yellows - The production of slender, upright growing shoots is perhaps the best diagnostic character. Fruit and foliar symptoms are not present during the bareroot season.

17. RED SUTURE

Quarantines - State Exterior (CCR 3259)

Type of Pest - Mycoplasmalike Organism

Hosts - Peach and Japanese plum; *Prunus salicina*

Symptoms - Symptoms are found on both peach fruit and foliage. Fruits ripen several days prematurely, particularly on the suture side. The suture side may be swollen or bulged

and flavor is usually insipid. A diseased tree presents a yellowish-green to greenishbronze appearance, and usually takes an autumn-like coloration prematurely. A tree will develop a less dense interior than normal after several years. A diseased tree may live for 8 years or more. The symptoms on plum are indistinguishable from those caused by peach yellows.

Transmission - Probably through infected budwood.

18. BROOMING DISEASE OF WALNUTS

Quarantines - State Exterior (CCR 3260)

Type of Pest - Virus

Hosts - Black walnut, *Juglans nigra*; butternut, *J. cinerea*; and Japanese walnut, *J. cordiformis var. ailantifolia*.

Symptoms - This disease is characterized by development of brooms or sucker growth on the main stem and branches. There is also a tufting of terminals, a profusion of branchlets from axillary buds, a dwarfing of the leaves, and occasionally death of the tree. The severity of the disease is quite variable.

Transmission - A treehopper, *Euchenopa binothea*, is suspected of being the vector.

Control - Removal of infected trees when found and rigid quarantine laws restricting movement of host material into uninfected areas is the best method of control.

Inspection for Brooming Disease of Walnuts - In bare root season, the profuse branchlets from axillary buds are a possible indication. In the field, all the aforementioned symptoms should be checked during the growing season.

19. CITRUS TRISTEZA (QUICK DECLINE)
Closterovirus Citrus Tristeza Virus

Quarantine - State Interior (CCR 3407)

Type of Pest – Virus

Hosts - Citrus sp.

Classical Symptoms - The first symptoms of the disease in sweet orange grown on sour orange rootstock are the bronze to ashen color of the dull foliage and the absence of new foliage. As the disease progresses, the leaves tend to curl lengthwise and upward, followed by leaf fall, death of fibrous roots, wilting and dying of leaves, and disappearance of starch in affected roots and trunks. Affected trees may undergo complete collapse in one to several weeks or may reach a state of equilibrium with the disease and linger an indefinite period of time in a weakened condition. Trees of soursweet combination affected with this disease resemble 'gophered' trees. Other combinations of top and scion and seedlings show little or no evidence of the disease except for occasional stem-pitting, reduced vigor and growth, and in Mexican limes, there is a flecking and vein clearing on the leaves.

ELISA Testing - When sour orange was a common rootstock in California, tristeza caused the rapid death of infected trees. Most trees today are grown on resistant rootstocks that show no symptoms of the disease when infected with common strains of the virus. Nevertheless, such trees act as a reservoir to infect other trees. The cotton or melon aphid is the common vector but is not very effective in transmitting the disease. The brown citrus aphid, *Toxoptera citricida*, is a much more effective vector but isn't yet found in California. Mild strains can mutate to more deadly strains during transmission and this is a cause of great concern in California. In order to protect the citrus industry, surveys are conducted throughout the major production areas. The production and movement of citrus nursery stock is highly regulated. Currently, ELISA test which uses an antisera and an index of Mexican lime indicator trees are used to test for Citrus tristeza.

Inspection for Tristeza - Observe trees for top symptoms, e.g., ashen-bronze color, absence of new growth, etc. If possible, the nature of root stock. Check for gopher injury. Old injury from gophers usually produces adventitious roots above point of injury. If gophers can be eliminated as the causal agent, a section of the bark should be removed at the bud union and a section of the wood scraped or chiseled away. Then an aqueous solution of Tincture of Iodine applied to the wood. Typical symptoms will be a purplish-blue color above the point of union indicating starch with no colored fibrous roots. The cortex of the fibers should slough off often leaving only the stele. Another indication of the disease is the absence of starch in the roots.

20. PEACH MOSAIC

Qurantine - State Exterior (CCR 3262)
- State Interior (CCR 3400)

Type of Pest - Virus (Marmor persicae)

Host - All varieties of peach, plum, prunes, nectarine, apricot, and almond (J.H. Hale, Filberta, Rio Oso Gem, and other of similar heritage are the most severely affected).

Symptoms - The expressions of this disease vary considerably according to the virulence of the particular form of virus, variety, season, care of the trees, and length

of time the tree has been infected. There are five important symptoms:

(1) Color breaking in flowers. Affected flowers may be crinkled and sometimes dwarfed.
(2) Retardation of leaf growth, especially in the spring.
(3) Yellow mottling of leaves, most noticeable in the spring, which vary in size and form from pointlike flecks to irregular spots, blotches, and streaks. In virulent forms, the early leaves may be severely affected with mottle and deformity; and may wither and fall while later leaves remain on the tree, but are more or less dwarfed, irregular in shape, and mottled. Leaves on trees less severely affected commonly exhibit mottling, but little or no deformity. After the first year, the leaf symptoms tend to become less severe.
(4) Fruit symptoms appear when the green fruit is about an inch in diameter or when the stone is hardening and are bumpy deformities often with irregular ridges or round raised areas surrounded by depressions, especially along the suture. The fruits grow slower and ripen sooner than normal. Fruit symptoms do not usually appear in tolerant hosts or mild virus strains.
(5) Twig symptoms - On severe twigs may be dwarfed and spur-like because of shortening of internodes.

Transmission – By very small, obscure eriophyid mites.

21. APPLE MAGGOT
Rhagoletis pomonella

County Ordinance

Type of Pest - Insect.
Order - Diptera (Flies).

Host - Apples, hawthorns, wild crab apples, blueberries and to some extent huckleberries, plums, and cherries.

Nature of Injury - The apple maggot, or railroad worm, causes brown tunnels or burrows inside the apple. After an infested apple has fallen or is picked from the tree, the flesh usually breaks down and becomes a brownish, pulpy mass. Early maturing fruit are most severely injured.

Life Cycle - The flies lay their eggs in the flesh of apples, preferably sweet and sub-acid varieties that ripen during the summer or fall. The legless larva, is white to yellowish with no distinct head, develops in the fruit and passes the winter in the pupal stage in the soil. Adult flies emerge over a period of a month or two in the summer. Adults are black in color, a little smaller than houseflies, with 3-4 white bands on the abdomen. The wings have four oblique black bands.

Stage	Place	Time
Egg	In the fruit	Spring and summer
Larvae	In the fruit	Summer and fall
Pupae	2" to 6" in soil	All year
Adult	Area of fruit	Summer

Overwinter - Puparium in soil.
Likely Way of Introduction/Interception - Larvae in infested fruits.

Generations Per Year - One to two

22. ASIAN LONGHORN BEETLE
Anoplophora glabripennis

Quarantines - Federal Domestic (CFR 301.51)

Type of Pest – Insect
Order - Coleoptera

Host - *Acer* (maple), *Aesculus* (horse chestnut), *Malus* (apple), *Melia* (chinaberry), *Morus* (mulberry), *Populus* (poplar), *Prunus* (cherry), *Pyrus* (pear), *Robinia* (locust), *Salix* (willow), *Ulmus* (elm) and *Citrus*.

Nature of Injury - After hatching, the first instar larva feed in the phloem and the fourth instar feeds in the xylem. Adults emerge from the tree by boring about three-eighths inch hole through the bark.

Life Cycle - Adults prefer to lay eggs in stressed trees. Females lay their eggs in grooves on the branches where new shoots emerge. Larvae hatch and feed in the phloem and xylem. Adults emerge in late spring through summer. Heavy sap flow occurs from wounds in trees infested with Asian Longhorns. Heavy sawdust debris is also found around the base of infested trees.

Description – Egg - off-white, 5-7 mm in length. Larvae - about 50 mm at maturity, grubs are yellow/cream color with a dark colored head. Pupae - off-white, about 30 mm long and 11 mm wide. Adult - 20-35 mm long and 7-12 mm wide. The beetle is black with white dots over the abdomen. Antennae have a black and white pattern. Male antennae are about 2.5 times of its body length and female is 1.3 times body length.

Stage	Place	Time
Egg	Branches/crescent shaped cut in tree surface	Spring
Larvae	Immature or possible stick-tight barks	Spring to Fall
Pupae	Soil Summer to	Fall
Adult	Around host and orchard trash	All year

Overwinter - Adult Beetles

Likely Way of Introduction - Egg and larval stage.

Generations - One to two

23. BLACK WALNUT CURCULIO
Conotrachelus retentus

Quarantine - State Exterior (CCR 3273)

Type of Pest – Insect
Order - Coleoptera (Beetles)

Host – Walnuts

Nature of Injury - Adults feed on young shoots in the spring, puncturing young fruit with their beaks for use as an egg depository. The larvae burrow through the nuts.

Life Cycle- Curculios hibernate as adults, feeding on young shoots in the spring and making crescent shaped cuts for their eggs in very young walnuts, which drop to the ground half grown. Pupation is in the soil. Adult beetles emerge in the fall.

Description – Egg - whitish. Larvae - dirty white with brown head, legless. Pupae - dirty white. Adult – pale reddish, covered with grayish pubescence or hairy growth.

Stage	Place	Time
Egg	In crescent shaped cut in nut surface	Spring
Larvae	Immature nut or possible stick-tight nut	Spring to Fall
Pupae	Soil	Summer to Fall
Adult	Around host and orchard trash	All year

Overwinter - Adult beetles

Likely Way of Introduction - Egg and larval stages.

Generations - One to two.

24. DIAPREPES ROOT WEEVIL
Diaprepes abbreviatus

Type of Pest – Insect
Order - Coleoptera (Beetles)

Hosts – More 270 plant species from 59 plant families including: citrus (all varieties), vegetables, ornamental nursery stock, corn, strawberry, sugarcane, sweet potato, pepper, cotton etc.

Nature of Injury – Adults feed along the edges of leaves causing notches. Younger leaves are preferred but may feed on fruits especially citrus and papaya. Larvae feed on roots, tubers, or other underground portions causing extensive damages to their host plants.

Life Cycle – Eggs are laid in clusters of 30 to 265 and placed between two leaves or inside the folded edge of leaf glued together by gelatinous substance produced by female weevils. Eggs are white, oval shaped and about 0.04-inch (1 mm) length and hatch in 7 to 10 days. Larvae – leave the cluster, drop from the leaves to the soil surface. Larvae then enter the soil and search for and feed on plant roots. Larvae are creamy-white, complete about 10 to 11 instars over an 8 to 15 month period and attain a length of about 1inch. Pupae – are light-red and occur in pupal chamber in the soil for 15 to 30 days. Adults – emerge from the soil and are capable of strong flights for only short duration and distances from where they emerge. Rainfall/ irrigation promotes emergence. Adults are large, colorful, 3/8 to 3/4 inch (10 to 19 mm) long, with numerous forms, ranging from gray to yellow to orange and black. The complete life cycle varies from 5 to 18 months depending on nutritional and environmental factors.

Stage	Place	Time
Egg	In clusters between or inside folded leaves	Varies
Larvae	Soil	Varies
Pupae	Soil	Varies
Adult	Host	Varies

25. BLUEBERRY MAGGOT
Rhagoletis mendax

Quarantine - State Exterior (CCR 3266)

Type of Pest – Insect
Order-Diptera (Flies)

Hosts-Blueberries and Huckleberries are the only known hosts.

Nature of Injury- Blueberry maggot burrows inside of the host fruit causing the flesh to break down and become brownish. It is rarely possible to detect the presence of Blueberry maggot larvae from the outside of the fruit. However, close examination will reveal presence of ovipositor stings left behind by females while laying eggs into the fruit.

Life Cycle – Egg - found in fruit; white to yellow in color; about 0.7 mm to 0.9 mm in length. Adult female may lay up to 400 eggs, which hatch after a two to ten day incubation

period. Larvae - elongated cream colored maggots, about 7 mm long, with a blunt posterior, which tapers toward the anterior end where the black mouth hooks, may be found. They have no distinct head and usually last 20-30 days. Pupae – Pale yellowish-brown and somewhat barrel-shaped, about 5 mm in length; may be found in the fruit, or at the bottom of boxes; but generally found in the soil below host trees. Adult - black fly having four oblique black bands on the transparent wings; head is orange and legs are yellow in color; three to four white bands may be found on the abdomen.

Stage	Place	Time
Egg	In the fruit	Spring and Summer
Larvae	In the fruit	Summer and Fall
Pupae	2" to 6" in soil	All year
Adult	Area of fruit	Spring and Summer

Overwinter - Pupa in soil

Likely way of introduction- Eggs and Larvae in infested fruit

Generations Per Year- Generally one, but in warmer climates, there may be two.

26. BOLL WEEVIL
Anthonomus grandis

Quarantine - State Exterior (CCR 3254)

Type of Pest - Insect.
Order - Coleoptera (Beetles).

Host – Cotton, but adults are known to feed on okra, and hollyhock.

Nature of Injury - Leaflike bracts at base of squares punctured by boll weevils during feeding, open up or flare and squares turn yellow and die. Most of the punctured bolls are not shed. The lock in which a grub feeds fails to develop properly and lint is cut, stained brown and decayed.

Life Cycle - Boll weevils pass winter as adults in woodpiles, trash, and other protected places. Boll weevils prefer to feed on and lay eggs in squares. Eggs are laid singly in deep punctures within the squares or bolls. Eggs hatch into white larvae or grubs in 3 to 5 days. Grubs feed seven to 14 days within the squares or bolls, and pupate in the cavity formed by their feeding. Adults emerge from pupal stage in three to five days and cut their way out of the squares. After feeding on blooms, squares or bolls for three to four days the females mate and start laying eggs. The cycle from egg to adult weevil is about three weeks.

Description – Egg - laid in bolls* and squares** only. Larvae - legless grub, with a curved body, and wrinkled brown head and mouthparts. Pupae - found in squares only. Adults – are small hard-shelled weevil. The most characteristic feature about the boll weevil is the two spurs, or teeth, near the end of its front femur; the inner tooth much longer than the other tooth, and a single tooth on the middle femur.

*Pod containing cotton and seed.
**Flower parts before blooming

Stage	Place	Time
Egg	Squares or bolls	Spring to fall
Larvae	Squares or bolls	Spring to fall
Pupae	Squares or bolls	Spring to fall
Adult	Plant parts and debris	All year

Overwinter - Adults.

Likely Way of Introduction - Cotton and cotton plants, all stages.

Generations - Up to seven a year.

27. BUTTERNUT CURCULIO
Conotrachelus juglandis

Quarantine - State Exterior (CCR 3273)

Type of Pest – Insect
Order - Coleoptera (Beetles)

Hosts - Butternuts and English walnuts.

Nature of Injury - Adults make punctures in nuts, tender tips, and leaf petioles. Larvae burrow through the nut or down the twig.

Life Cycle - Beetles overwinter in the adult stage. Adults attack leaf tips, leaf petioles and nuts. Eggs are laid in crescent-shaped punctures in young nuts. Newly hatched larvae burrow through the nut or down the twig. When the larvae are full-grown they go below the soil surface to pupate. Adult beetles emerge in the fall and feed before seeking winter shelter.

Description – Egg - whitish. Larvae - dirty white with brown heads. Pupae - dirty white. Adults – are brownish gray resembling plum curculio but with white markings 1/4" long.

Stage	Place	Time
Egg	In crescent-shaped cuts in nut surface	Spring
Larvae	In immature or stick tight nut	Spring to Fall
Pupae	Soil	Summer to Fall
Adult	About hosts and orchard trash	All year

Overwinter - Adult beetle.

Likely Way of Introduction - Egg and larval stage.

Generations - One to two.

28. CARIBBEAN FRUIT FLY
Anastrepha suspensa

Quarantines - State Exterior (CCR 3252)

Type of Pest - Insect
Order - Diptera (Flies)

Host - Over 80 species of tropical and subtropical fruits, including: citrus, guava, kumquat, loquat, mango, papaya, and peach.

Nature of Injury - Larvae feeding causes breakdown of fruit tissues. Ovipositor punctures admit decay organisms that may cause tissue breakdown. Premature fruit drop is common.

Life Cycle - Eggs are deposited singly and hatch in two to three days if conditions are ideal. The larvae feed within the pulp of maturing and mature fruit. Pupation usually occurs in the soil but could occur in fruit.

Egg - spindle-shaped, glossy, about 1 mm. long. Larvae - a cream-colored maggot with no distinct head on larva. Pupae - creamy-yellow to reddish-brown puparium which may exceed 7 mm long and is about 4 mm. in wide. Adult - yellowish-brown and 1-1/2 to 2 times the size of the common housefly, black posterior spot on thorax, wing bands are yellow-brown to brown.

Overwinter - Usually as a puparium in the soil.

Likely Way of Introduction - Eggs and larvae in fruit.

Generations - Dependent upon temperature and other environmental factors.

29. CEREAL LEAF BEETLE
Oulema melanopa

Quarantine - State Exterior (CCR 3277)

Type of Pest - Insect
Order - Coleoptera (Beetle)

Hosts - Grass family, preferring small grains, especially oats and barley.

Nature of Injury - Both adults and larvae damage grain crops. Adult beetles cut longitudinal slits between the veins and may kill the plant. Most damage is done in the larval stage. In Europe crop loss to the cereal leaf beetle has been reported to be as high as 25 to 50 percent.

Life Cycle - The beetle has four stages and produces one generation per year. Adult beetles overwinter, usually in clusters, wherever they can find shelter - under loose bark of trees, in old corn stalk and leaves, cracks of fence posts or ground. They are found in greatest number in hedgerows or trees and stump borders surrounding cultivated fields. Adults emerge early in spring and first attack wild grasses near their hibernation spots. The adults are strong fliers and have been collected as high as 1,000 feet above ground. Spring feeding before laying eggs, normally lasts about two weeks. Eggs are laid on the upper surface of the host plant leaves. In warm weathers, eggs hatch in five days and the larvae develop in the next ten days. When full grown the larvae leave the plants and pupate in earthen cells in the top two inches of soil.

Description – Egg - elliptical, yellow, and smaller than pinhead (less than 1/16 inch), turns almost black before hatching, deposited singly or in rows on leaves of host plant. Larvae - are small slug-like in appearance, ¼ inch long having a yellowish body and brownish colored head and legs. Pupae - yellowish-brown, turning bluish-black before adult emerges. Adult - hard-shelled beetle 3/16-inch long. Its wing covers and head are metallic bluish-black, legs and front segment of its thorax are reddish-orange.

Stage	Place	Time
Egg	*Upper surface on leaf	Early Spring
Larvae	Leaves of host plants	Spring
Pupae	Soil	Late spring, early summer
Adult	Leaves of host plants	**Early spring, Midsummer and winter

*On corn, eggs are found on lower surface of leaf
**Early spring adults and overwintering adults.

Overwinter - Adults.

30. CHERRY FRUIT FLIES
Western Cherry Fruit Fly *Rhagoletis indifferens*
Black Cherry Fruit Fly *Rhagoletis fausta*

Quarantines - State Interior (CCR 3414)
- State Exterior (CCR 3256)

Type of Pest – Insect
Order - Diptera (Flies)

Hosts - Cherry, wild cherry, pears, and plum. Black Cherry fruit fly prefers sour cherry to sweet cherry.

Nature of Injury – Adult flies feed by scraping surface of leaves/fruits and sucking liquid plant juices. The larvae feed inside the fruit producing misshapen, undersized cherries with one side shrunken or decayed and some turning red before maturity.

Life Cycle - Winter is passed as a pupa in the soil. Adult flies emerge during late spring. Females lay their eggs through small slits cut in the flesh of the fruit. Full-grown larva, drop to the ground and work its way below the surface where they change into the pupae in the soil. It passes the winter in the pupae stage.

Description-Larvae - yellowish-white legless maggots, pointed at the head, will be found in flesh of fruit. Pupae – are brown capsule-like case in the soil. Adult – are yellow margins on the thorax. White-banded Cherry Fruit Fly has four white cross bands on the abdomen. Both have blackish bands on the wings.

Stage	Place	Time
Egg	In pulp of fruit	May and June
Larvae	In pulp of fruit 12 to 21 days,	June
Pupae	In soil	10 months of year
Adult	Flying around host	June and July

Overwinter - pupae in soil.

Likely way of Introduction - Eggs and larvae in infested fruit.

Generations Per Year - One

31. COLORADO POTATO BEETLE
Leptinotarsa decemlineata

Quarantine - State Exterior (CCR 3264)

Type of Pest – Insect
Order - Coleoptera (Beetle)

Hosts - Potato is the preferred host. Other hosts include tomato, eggplant, tobacco, pepper, ground cherry, thorn apple, Jimson weed, henbane, horse nettle, belladonna, petunia, cabbage, thistle, mullein, etc.

Nature of Injury - Both adult beetle and larvae feed by chewing the leaves and terminal growth of the host plant especially potato. They can devour so much of a plant's above ground biomass that the plant dies. Consequently, development of tubers is prevented or the yield greatly reduced.

Life Cycle - Colorado potato beetle eggs are laid in bunches on the underside of the leaves. The eggs hatch in four to nine days. Larvae feed on host plant and grows rapidly, passing through four instar stages, which are similar in appearance except that each stage is larger than preceded one. The larvae become fully grown, in 10 to 21 days, drops to the ground and pupates in the soil. After five to ten days the adult beetle emerges from the pupa, crawls out of the ground, feed on plants for a few days and lay eggs for another generation.

Description – Egg - orange-yellow. Larvae - small, humpbacked, reddish in color with two rows of black spots on each side of the body. Pupae – are brownish.

Adult – are yellow with five longitudinal black lines on each wing cover and with black spots on the thorax.

Stage	Place	Time
Egg	Underside of leaf	Spring through summer
Larvae	Leaves and buds	Spring through summer
Pupae	Soil	Summer
Adult	Hibernate in soil	Summer through fall

Overwinter - Adult.

Likely Way of Introduction - All stages

Generations Per Year - Average two.

32. CORNSTALK BORERS
Southern Cornstalk Borer *Diatraea crambidoides*
Southwestern Corn Borer *Diatraea grandiosella*

Quarantine - State Exterior (CCR 3272)

Type of Pest – Insect
Order - Lepidoptera (Butterflies and Moths)

Hosts - The primary host is corn. Sorghum, Johnson grass, broomcorn and sugarcane are also known to be attacked.

Nature of Injury - Larvae feeds on leaves, then bore into the stalk and damage the circulatory system of the host plant. This may cause severe twisting and stunting of the stalk and weakens it, sometimes to the point of toppling over.

Southern Cornstalk Borer *Diatraea crambidoides*

Description – Egg - the flattened, creamy-white or yellowish, oval eggs are laid in rows or clusters, in a shingle-like manner, generally on the lower surface of the leaf. Larvae – are dirty white or yellowish in color with a brownish head and thoracic shield. The larva is covered with spots, each having a short dark bristle originating from it. These spots are pale during the winter, but quite conspicuous during the summer. The larva reaches a length of about 25 mm when fully grown. Pupae – are brown and naked, about 20 mm in length. It is contained within the stalk in a silk lined tunnel created by the preceding larval stage. Adult – the adults of both species are quite similar and field separation should not be attempted. The females are approximately 20 mm in length, and of a dirty white to pale yellow in color. The males are slightly smaller and darker in color.

Southwestern Corn Borer *Diatraea grandiosella*

Life Cycle

Stage	Place	Time
Egg	Underside the leaves	Spring through summer
Larvae	In stalks	All year
Pupae	Inside stalk	Spring through summer
Adult	Flying about host	Spring through summer

Overwinter - Larvae in stalk.

Likely Way of Introduction - Larvae and pupae.

Generations Per Year - One to three.

33. EUROPEAN BROWN GARDEN SNAIL
Helix aspersa

Restrictions – Other States

Type of Pest - Snail (Mollusk)
Order - Eupulmonata

Hosts - Ivy, tomato, strawberry, avocado, citrus, myrtle, eucalyptus.

Nature of Injury - Presence of snails is usually indicated by 'slime trails, dried mucus. Snails are active at night or on cool, foggy days and feed on a variety of plants and decaying materials. They chew irregular holes in leaves and young plant bark. In mild-winter areas, like Southern California, they are active throughout most of the year.

Breeding Habits - Adults lay about 80 white, spherical eggs in small holes of topsoil. Females may lay eggs up to six times a year. It takes about two years for snails to reach maturity.

Description – Adult - shell is about 1 ¼" in diameter. It is yellowish-brown, typically with four light to dark brown spiral bands frequently streaked with white. In hot weather, adults seal themselves off with a 'parchment-like' membrane and attach themselves to trees, fences, walls, etc.

Likely Way of Introduction - Adults, on host material.

34. EUROPEAN CORN BORER
Ostrinia nubilalis

Quarantines - State Exterior (CCR 3263)
- Federal Foreign (CFR 319.41)

Type of Pest – Insect
Order - Lepidoptera (Moths and Butterflies)

Hosts - Corn is the primary host. Broomcorn, sorghum and sudangrass are also major hosts. The pest has been found on 200 kinds of plants.

Nature of Injury - Stalks and tassels broken or bending over. Larvae feed on leaf blades and bore holes through stalks and cobs causing severe loss of crop.

Life Cycle- Eggs are laid overlapping one another like fish scales in masses of 15 to 20, or more, on the underside of the corn leaves and hatch in four to nine days. The tiny borers immediately crawl to protected places on the plants where they feed on immature leaves and tassels tissues. Eventually they bore into the stalks and ears. They mature in about a month, and after providing an exit for the adult moth, change to pupae inside the burrows. In 10 to 14 days, the adult moths emerge from the pupa cells and lay about 400 eggs. The moth lives from 10 to 24 days.

Description – Egg - whitish. Larvae - flesh colored with small, round, brown spots. Pupae - brown and smooth. Adult - female, pale yellowish-brown with irregular, darker bands running in wavy lines across the wings, male moth distinctly darker, having the wings heavily marked with olive brown.

Stage	Place	Time
Egg	Underside of leaf	Summer-one week
Larva	On stalk then inside stalks	Aug. To May (10 months)
Pupae	In cob or stalk	Spring
Adult	Vicinity of corn	Summer

Overwinter – Larvae/caterpillar

Likely way of introduction - Larvae in host.

Generations Per Year - One to two.

35. EUROPEAN PINE SHOOT MOTH
Rhyacionia buoliana

Quarantine - State Exterior (CCR 3275)

Type of Pest – Insect
Order - Lepidoptera

Hosts - All species and varieties of pine trees with or without roots and branches or twigs bearing terminal buds, needles, or shoots.

Nature of Injury - Larva bores through the needle sheath and mines the base of the needles, then moves to a bud for feeding. Severe infestations will cause the tree to die.

Life Cycle - Larva hibernates in the bud or under a moss of pitch on the bud. In the spring the larva emerges and starts to feed. In late May or early June larva pupates and two or three weeks later pupa emerges as an adult moth. Moths usually mate within 24 hours and females begin laying eggs from time of mating through the month of July. Eggs are deposited on twigs, buds, and needles. Eggs hatch within a week or two; larvae then feed and grow until time for hibernation.

Description – Eggs are small dish shaped and yellow, later turning orange then reddish-brown. Full-grown larvae are about 5/8-inches long. Pupae – reddish brown and about 3/8-inches long.

Stage	Place	Time
Egg	Twigs, buds, and needles	June and July
Larvae	Twigs, buds, and needles	July through May
Pupae	In buds	May and June
Adult	On trees	June and July

Overwintering Stage - Larvae

Most Likely Means of Introduction - Larvae

Generations Per Year – One

36. GRAPE PHYLLOXERA
Phylloxera vitifoliae

County Restriction

Type of Pest – Insect
Order - Homoptera (aphids, scales, whiteflies)

Hosts - Grapevines and cuttings, rooted or otherwise. Used equipment.

Nature of Injury - Causes galls on grape roots and leads to the slow death of the vine by constricting absorption of nutrients and water. Breakdown of roots is also hastened by the presence of fungi, and molds.

Life Cycle – Overwinter on roots as small nymphs. In spring these nymphs feed and mature. Adult females deposit eggs by asexual reproduction, giving rise to several generations throughout the summer and fall. At the end of September some of the crawlers begin to hibernate.

Description – Adults are similar in appearance to an aphid, 1 mm, oval body shape, yellowish green or brown body with six distinct rows of dark spots on the dorsal and lateral sides. Eggs – are initially golden yellow turning green later; oval; length 0.3 mm. Nymph – referred to as crawlers because they can move freely.

Stage	Place	Time
Egg	Soil	Spring
Nymph	Roots	Winter
Adult	Roots	Spring-Fall

Overwintering Stage – Nymph stage in temperatures below 60°F and all stages at temperatures above 60°F.

Most Likely Means of Introduction – All stages on nursery stock.

Generations Per Year – 5 to 8.

37. GYPSY MOTH
Lymantria dispar

Quarantines - Federal Domestic (CFR 301.45)

Type of Pest – Insect
Order - Lepidoptera (Moths and Butterflies)

There are two main types of the moth – Asian and European/North American. Dispersal pattern is the main difference between types of the gypsy moth. Adult females of Asian GM have longer and stronger wings that allow for

flight whereas females of European/North American GM are flightless.

Hosts - Nearly all deciduous and evergreen trees and shrubs are hosts. It attacks garden plants and is a serious pest of cranberries. The larva is known to feed on over 500 different species of plants. In addition to plant hosts, Outdoor Household Articles (OHA) such as lawn furniture, barbeque equipment, firewood and even recreational vehicles can harbor gypsy moth. Females lay eggs on almost any surface.

Nature of Injury - The larvae eat the leaves and associated defoliation retards the growth and otherwise weakens the trees. Repeated complete defoliation may kill the trees.

Life Cycle - Winter is passed in the egg stage. The eggs are laid in masses up to an inch long and averaging about 400 eggs. They are covered with hair. Gypsy moth larvae usually appear about May. They mature in late June or early July and seek shady places to pupate, such as trees or rocks. The moths emerge about a month later. Males are strong daytime fliers, but the females are heavy bodied and cannot fly. They lay their eggs close to the place where they emerge as adult moths.

Description – Egg - light brown masses covered with a hair coating (similar to Fruit Tree Leaf Roller eggs). Larvae – are brown and hairy with five pairs of blue tubercles along the back and followed by six pairs of red tubercles. Adult - male, dark brown in color; female, light buff color with irregular dark markings across.

Stage	Place	Time
Egg	Trees, stones, posts, etc.	July to May
Larvae	Foliage of food plant	May to July
Pupae	Sheltered places first	2 to 3wks in July
Adult	Male--Fly about host	July to September

Overwinter - Egg mass.

Likely Way of Introduction – Egg which occurs nine months of the year and is deposited on material likely to be transported.

Generations Per Year - One

38. HICKORY SHUCKWORM
Cydia (=Laspeyresia) caryana

Quarantine - State Exterior (CCR 3273)

Type of Pest – Insect
Order - Lepidoptera (Moths and Butterflies)

Hosts - Pecan and Hickory nuts.

Nature of Injury - Mining and tunneling, by the larvae, in the green shucks surrounding the nut, often resulting in the improper development of the nut kernels and prevents clean separation of the shucks from the nut. Larvae may also feed on the interior of green nuts prior to the hardening of the shell, causing further reduction of the crop.

Description – Egg - small, oval whitish in color; laid on exterior of maturing nut; hatches in 4 to 5 days. Larvae - typical moth larva, having both pro-legs and three pairs of true legs; creamy-white in color with a brownish head; growing to a length of 10 to 12 mm at maturity. Pupae - golden-brown in color about 10 mm in length. Adult - about 12 mm in length, with a wingspan of 15 to 20 mm; dark brown to smoky black in color, seeming iridescent blue or purple in certain light. Short yellow streaks appear on the leading edge of the front wings.

Stage	Place	Time
Egg	Exterior surface of nuts	Mid summer
Larvae	Feeding in husks of nuts	July to March
Pupae	In husk of nuts	February to April
Adult	Flying	Early spring to summer

Overwinter - Larvae in husk.

Most likely way of introduction - Larvae in husk

Generations per year - one to four

39. JAPANESE BEETLE
Popillia japonica

Quarantines - State Exterior (CCR 3280)
- Federal Domestic (CFR 301.48)

Type of Pest – Insect
Order - Coleoptera (Beetles)

Hosts - Leaves, blossoms, and fruit of more than 250 plants, shrubs, and trees.

Nature of Injury - The larvae/grubs feed on the roots of various plants and often cause serious damage to turf in lawns, parks, golf courses, pastures, and other turf areas. Adults feed on fruit and foliage. Peaches and stone fruits, especially, are badly damaged by adult feeding.

Life Cycle - Japanese beetles spend about 10 months as grubs in the soil. In late May or early June, the grubs stop feeding and go through a short resting, or pupae stage, after which they become beetles. The adults dig their way out of the soil. By early July, they are flying about in numbers and

feeding on trees and plants. During July and August, the females periodically go into the ground and lay eggs.

Description – Egg - white eggs in groups two to six inches deep in the soil. Larvae - whitish grub with brown head. Grubs have distinct legs. Adult - distinguishing marks are metallic green to greenish bronze with reddish wing covers (7/16 inch wing).

Stage	Place	Time
Egg	Soil	August to September
Larvae	Soil	September to June
Pupae	Soil	June and July
Adult	foliage/fruit	June to September

Overwinter - Larvae in soil, may take up to two years to develop in cold wet soils.

Likely Way of Introduction - Larvae feeding on roots, especially when crown gall is present.

Generations - One annually

40. KHAPRA BEETLE
Trogoderma granarium

Quarantine - Federal Foreign (CFR 319.75)

Type of Pest – Insect
Order - Coleoptera

Hosts - Stored grain products (wheat, barley, rice), peanuts.

Nature of Injury - Larvae feed on stored products, usually in the top 12 inches. Larva can persist for one to two years in a diapause-like state if food is scarce.

Life Cycle - Eggs hatch into larvae in five to seven days. Larvae are about 1/4 inch long when full grown and feed on stored products. Under optimum conditions, the larvae can become fully developed in four weeks, going through 2-11 molts, passing the cast skins in the stored product. The cast skins are often the first signs of infestation. Pupa is enclosed in the last larval skin. Adults emerge and mate almost immediately. Adults live one to two weeks and do not feed or fly. Females can lay up to 80 eggs.

Description - Eggs - are about 1/64 inch long, and white. Larvae - are yellowish-white upon hatching; they change to reddish-brown as they shed their skins. Mature larvae are 1/4" long. Pupae - are 1/4 inch long and are enclosed in the last larval skin. Adult – oval shaped, up to 1/8" long, brown too blackish with fine setae. Elytra have indistinct lighter brown patterns on them.

Stage	Place	Time
Egg	Host	Year round
Larvae	Host	Year round
Pupae	Host	Year round
Adult	Host	Year round

Overwinters - All stages.

Likely Way of Introduction - All Stages

Generations per year - Up to 10

41. MEDITERRANEAN FRUIT FLY
Ceratitis capitata

Quarantines – State Interior (CCR 3406)
- Federal Foreign (CFR 301.78)

Type of Pest – Insect
Order - Diptera (Flies)

Host - over 200 species of fruits, nuts, vegetables, and berries including citrus, kiwi, pepper, papaya, sapote, quince, persimmon, loquat, apple, fig, walnut (in husk), mango, olive, avocado, almond (in husk), cherry, peach, plum, pear, grape, and guava.

Nature of Injury - Feeding by larvae causes breakdown of interior fruit tissues. Females use their ovipositor to puncture the epidermal layer of fruits. The punctures admit decay organisms, resulting in subsequent breakdown of fruit. Premature fruit drop is common.

Life Cycle - Eggs are deposited in groups about 1 mm or deeper under the skin of the host fruit. Incubation takes two to three days. The larvae feed in groups within the pulp of maturing fruit. Three instars stages take 10 to 14 days to complete development. Pupation usually takes place in the soil under a tree, in a cylindrical, reddish-brown puparium.

Description – Egg - smooth, white, very slender and curved; about 1 mm. in length. Larvae - a whitish yellow headless maggot. Pupae - a reddish-brown elongate puparium. Adult - red and blue iridescent eyes, brown head, 3.5 to 5 mm long, thorax black with white and yellow markings, wings hyaline but with yellow and brown bands measuring 1/4 inch.

Stage	Place	Time
Egg	Under the skin of fruit or vegetable	All year
Larvae	In flesh of fruit or vegetable	All year
Pupae	In soil	All year
Adult	About fruit or vegetable	All year

Overwinter - All stages in warm climates.

- Pupa in cooler climates.

Likely Way of Introduction - Eggs and larvae in fruit.

Generations Per Year - Dependent upon temperature and other environmental factors.

42. MELON FRUIT FLY
Dacus (= Bactrocera) curcurbitae

Quarantines - State Interior (CCR 3425)
- Federal Domestic (CFR 301.97)

Type of Pest – Insect
Order - Diptera (Flies)

Hosts - Larvae feed in melons of all kinds and all squash, tomatoes, string beans, cow peas, egg plant, pumpkins, bitter gourd, some cucumbers, kohlrabi, and certain other fruits, such as mango, papaya, etc.

Nature of Injury - Eggs are laid in the host fruit or vegetable through a puncture made using the ovipositor. Upon hatching, larvae burrow through the host fruit causing interior breakdown of the flesh.

Life Cycle - Eggs and maggots are found within fruit or vegetable. When larvae/maggots are full grown they emerge from the fruit and burrow into the soil where they change into pupae. Adult flies emerge in a few days. Under hot conditions, the entire cycle from egg to adult is about 15 days.

Description – Egg - slender, white, elliptical. Larvae - pale yellowish white, cylindrical, tapering slightly toward the head end (no distinct head on maggots). Pupae - cylindrical, dull luteous to deep reddish yellow. Adult - reddish yellow fly or near housefly size. Wings banded with a large apical spot in each wing.

Stage	Place	Time
Egg	Under the skin of fruit or vegetable	All year
Larvae	In flesh of fruit or vegetable	All year
Pupae	In soil	All year
Adult	About fruit or vegetable	All year

Overwinter - Probably all stages.

Likely Way of Introduction - Larva stage in fruit or vegetables.

Generations – Varies, depending on temperature and environmental factors.

43. MEXICAN FRUIT FLY
Anastrepha ludens

Quarantines - State Interior (CCR 3417)
- Federal Domestic (CFR 301.64)

Type of Pest – Insect
Order - Diptera (Flies)

Hosts - Over 200 hosts. Nearly, all citrus and deciduous fruits. Sour limes, lemons and grapefruit are preferred host.

Nature of Injury - Eggs are laid below the surface of the fruit. The maggots upon hatching burrow through the fruit causing interior breakdown of the flesh. Full-grown larva drop to the ground and pupate in the soil, emerging later as adult flies.

Description – Egg - green color. Larvae - white, dirty white or yellowish-white and pointed at one end where the black mouth hooks are plainly visible, although the larva does not possess a distinct head. Larvae are legless. Pupae-brownish. Adult - yellowish-brown color. Longitudinal markings, somewhat lighter color, are found on the thorax with a small median spot of dark brown. The wings are transparent where they are not mottled and striped with yellowish-brown bands. The inverted "V" on the lower part of the outer half of the wing is not connected at the main pattern, distinguishing this species from others. The ovipositor sheath of the female is very long, slender and tube-like, longer than remaining body.

Stage	Place	Time
Egg	Under the skin of fruit or vegetable	All year
Larvae	In flesh of fruit or vegetable	All year
Pupae	In soil	All year
Adult	About fruit or vegetable	All year

Overwinter - All Life Stages.

Likely Way of Introduction - Eggs and larvae in Fruit.

Generations Per Year - Variable, dependent upon temperatures.

44. NUT TREE CASEBEARERS
Acrobasis spp.

Quarantine - State Exterior (CCR 3260)
- State Exterior (CCR 3273)

Type of Pest – Insect
Order - Lepidoptera (Butterflies and Moths)

Hosts - Pecan, Hickory, and Walnut

Nature of Injury - Larvae emerge from winter cases or hibernacula and feed voraciously upon unfolding buds and leaves. Since the larvae are not discriminating in feeding habit, they devour the blossom buds as well as the leaf buds. On badly infested trees, larvae consume foliage as fast as it is put forth.

Life Cycle - Adult moths emerge from May to July, depositing eggs almost immediately on underside of leaf, usually near junction of a vein with midrib. Average length of life of adult stage is about five days. When hatched, larvae soon construct slender cases about 18 mm. long, which are always attached to leaf petioles. The position of the larva pulls down two or more leaf tips and fastens them to its case, in order to feed without continually moving position of case. Mature larvae are about 14mm long. In autumn, just before leaves fall, larvae migrate to young buds where winter hibernacula are constructed.

Description – Larvae - reddish brown with black head. Adult - moth, brownish color.

Stage	Place	Time
Egg	Underside of leaf	Late spring
Larvae	Feeding on buds and leaves	Summer and fall
Pupae	By buds and larval case	Spring
Adult	Flying around host	Late spring

Overwinter - Larvae overwinter in hibernacula by buds.

Likely Way of Introduction - Larvae and pupae on nursery stock.

Generations - One generation a year.

45. OLIVE FRUIT FLY
Bactrocera oleae

Quarantine – State Interior (CCR 3431)

Type of Pest – Insect
Order – Diptera

Hosts – Fruits on wild, ornamental or commercial olive plants.

Nature of Injury – The larvae cause fruit drop and reduced yield. Serious infestation affects oil volume, alters its color and increases acidity.

Life Cycle – Eggs and larvae are found within the fruit. The first four generations of the fly pupate within the epidermis (outer skin). However, the fifth or last generation overwinters in the soil as a pupa. Adult flies overwinter close to the host plants.

Description – Larvae - yellowish-white, attaining a length of 5 to 6 mm and occur one per fruit. Adult – is about 5 mm long. The head is yellowish to light brown and the thorax is dark brown with three darker parallel lines. The abdomen is pale brown with three pairs of black bands. The clear wings have a dark spot at the apex.

Stage	Place	Time
Egg	Fruit	August
Larvae	Fruit	August
Pupae	Epidermis of Fruit/Soil	* September/Winter*
Adult	Host plants	Winter

Overwinters – Pupae or Adult.

Likely way of Introduction – Fruit

Generations per Year – 2 to 5.
*Last generation only.

46. ORIENTAL FRUIT FLY
Bactrocera dorsalis

Quarantines - State Interior (CCR 3423)
- Federal Foreign (CFR 301.93)

Type of Pest – Insect
Order - Diptera

Hosts – include more than 150 species of tropical and subtropical fruits and vegetables, e.g. citrus, stone and pome fruits, tomato, and avocado.

Nature of Injury - Larval feeding reduces interior of fruit to a rotten mass. Egg punctures admit decay organisms. Ripe fruit preferred.

Life Cycle - Eggs and larvae are found in fruits or vegetables. When full grown, larvae merge from the fruit/vegetable, drop and burrow into the soil where they pass the pupation period. Adult flies emerge in a few days. The entire cycle from egg to adult, is about 15 days, under warm conditions.

Description – Eggs - Slender, white elliptical about 1 mm long. Deposited under skin of fruit in groups of 3 to 30. Larvae - a headless maggot, creamy white, length 10 mm, 11 segments and feeds inside the fruit/vegetable. Larvae pass through three instars. The third instar larvae drop to the ground where they pupate. Pupae - Tan to dark brownish yellow, 5 mm long, pupation usually occurs a short distance under soil surface, but soil not necessary for survival. Adult – usually is a little larger than a housefly, mostly yellow with dark markings on thorax and abdomen. Wings clear. Female can produce more than 1,000 eggs.

Stage	Place	Time
Egg	Under fruit/vegetable skin	All year
Larvae	In flesh of fruit or vegetable	All year
Pupae	In soil	All year
Adult	About fruit or vegetable	All year

Overwinters - All stages.

Likely Way of Introduction - Egg and Larvae in fruits/vegetables.

Generations Per Year - Twelve to fifteen.

47. PECAN PHYLLOXERA
Phylloxera devastatrix

Quarantine - State Exterior (CCR 3260)

Type of Pest – Insect
Order - Homoptera (Scales, aphids, leafhoppers, mealybugs, whiteflies, etc.)

Hosts - Pecan

Nature of Injury - These insects are found within galls, produced by tree as a defensive reaction to the feeding pest. The formation of galls causes new growths and shoots to be weakened, malformed, and finally die. Severe infestation can destroy entire limbs.

Description - The insect overwinter in the egg stage in protected places on the branches. The nymphs appear in the spring, when the new buds unfold. The nymphs then insert their beaks into new growth, causing a gall to form that soon envelopes the insect. The nymph matures in the gall. After these eggs hatch, and the young insects mature into adults (winged forms), the gall splits open and releases the insects, usually in late May or June. This winged adult is very minute (being about only 1 mm long), oval or pear-shaped, and yellowish-green to yellowish-brown in color.

Stage	Place	Time
Egg	On bark or in galls	All year
Nymph	In galls	Spring to Fall
Adult	Flying, crawling, or in galls	Spring to Fall

Overwinter - As egg in protected area on bark.

Most likely way of introduction - All life stages can be introduced in galls, on nursery stock.

Generations per year - Several

48. PECAN WEEVIL
Curculio caryae

Quarantines - State Exterior (CCR 3273)

Type of Pest – Insect
Order - Coleoptera

Hosts - Pecan and hickory nuts.

Nature of Injury - The worst damage is a result of larval feeding on the “meats” of the nut. Adults feeding on plants also cause damages. Egg-laying females cause damage by boring into the nut with their snouts, creating a cavity in which to lay eggs. These holes may permit fungi and other plant pathogens to enter the nut. Infested nuts generally drop to the ground prematurely. When the crop is light, and the infestation heavy, the entire crop may be lost.

Description – Eggs – are small, white, deposited in maturing nuts, hatching in 7 to 10 days. Larvae - typical weevil larva; yellowish-white in color, legless, having a brown head; about 10 to 12 mm in length at maturity; and are naturally curved into a “c” shape. Pupae - white to yellow in color, about 9 mm in length; found in an earthen cell 4 to 12 inches below the surface of the soil. Adult - brownish or grayish, with scattered yellow hairs on ventral side; snout slender and curved, being much longer than the body in the female, about half as long in the male.

Stage	Place	Time
Egg	Surface of maturing nuts	Aug to early Sept.
Larvae	Feeding inside nut	Sept. to Nov.
Pupae	In soil, 4" to 12" deep	All year (1-2 years)
Adult	About trees	Late July to September

Overwinter - As pupae in the soil.

Most likely way of introduction – are eggs and larvae in nuts.

Generations Per Year – is one generation every two or three years.

49. PERSIMMON ROOT BORER
Sannina uroceriformis

Quarantines - State Exterior (CCR 3265)

Type of Pest – Insect
Order - Lepidoptera (Moths and Butterflies)

Hosts - Persimmon

Nature of Injury - The larvae tunnel on the taproot of the persimmon from 18 to 22 inches under the ground.

Life Cycle - Adults emerge in the Gulf States during April and May; in more temperate regions during June and July. The eggs are laid or dropped at the base of the trees, preferably young saplings. Pupal cases are constructed of grass and chips on the root and are connected with the larval tunnels. On saplings the pupal cases are frequently found above the ground.

Description – Larvae - whitish with a dark brown head and plate behind the head. The caterpillar has legs. Pupae - brown in color. Adult - looks like wasps. Forewings are dark in color from base to tip. Rear wings are dark at tip and transparent at base. Body scale tufts at tip of abdomen, fantail shape, but in three finger-like projections. Body is dark in color with one wide, reddish-orange band. Thorax, or the areas behind head, with a reddish-orange band around base of head, also a similar band about the base of the wings.

Stage	Place	Time
Egg A	t base of trees	April; for several months
Larvae	Tunnel in trees	All year
Pupae	Cocoon in tunnel	April and May
Adult	Fly (tree base -daytime)	Spring to Fall

Overwinter - Larvae

Likely way of introduction – are larvae in trees.

Generations Per Year - One every two or three years

50. PINK BOLLWORM
Pectinophora gossypiella

Quarantines - State Interior (CCR 3409)
- Federal Domestic (CFR 301.52)

Type of Pest – Insect
Order - Lepidoptera (Butterflies and Moths)

Hosts - Cotton and okra - possibly hollyhock and other malicious plants. Used cotton harvesting equipment and bagging.

Nature of Injury - The small pinkish caterpillars eat both lint and seeds of the cotton plant and reduce yield, weight, vitality, and oil content of the seeds. They also reduce the quantity and quality of the lint. Severe infestations cause squares and small bolls to shed.

Life Cycle - The female lays 100 to 200 tiny eggs. The young caterpillar bores into a square or boll where it feeds 10 to 14 days. When full-grown, it cuts a round hole through the boll and either change to a pupa within the boll or drops to the ground to pupate. Development from egg to adult takes 25 to 30 days in midsummer. There may be as many as four to six generations a year in areas with long growing seasons. Larvae that develop late in the season may pass the winter in seed, old bolls, and trash in the fields or at the gins, and in cracks in the soil.

Description – Egg - greenish white. Larvae – are pinkish white (pinkish on the upper part). Pupae - smooth, covered with fine pubescence, and brown in color. Adult - small, dark-brown moths.

Life Cycle –

Stage	Place	Time
Egg	All over plant	Spring to Fall
Larvae	Lint and seeds	All year
Pupae	In boll or soil	Spring to Fall
Adult	General area	Spring to Fall

Overwinter - Larvae in seed, old bolls, trash and soil.

Likely Way of Introduction - Larvae

Generations Per Year - Four to six.

51. PLUM CURCULIO
Conotrachelus nenuphar

Quarantines - State Exterior (CCR 3266)

Type of Pest – Insect
Order - Coleoptera (Beetle)

Hosts - Apple, apricot, cherry, nectarine, peach, pear, plum, prune, and quince.

Nature of Injury - The adults attack the fruit soon after it sets. The surface of the fruit is scarred or distorted by the round feeding holes and egg laying punctures of the Curculios. The burrowing of the larvae or grubs injures the inside.

Life Cycle - Eggs are laid in crescent shaped cuts, which the females make in the fruit. Eggs hatch in about a week. Larvae are yellowish-white; become full grown in about two weeks. Mature larva drops to the soil where it completes their development into adult beetle.

Description – Egg - pale green. Larvae - whitish, legless grub with brown head. Pupae - light brown. Adult - dark brown to blackish in color with grayish and whitish patches.

Most striking means of identification are four black humps on the wing covers.

Stage	Place	Time
Egg	In fruit	Spring
Larvae	In fruit	Spring and summer
Pupae	Ground	Summer
Adult	Ground, rubbish	Fall through spring

Overwinter - Adult.

Likely Way of Introduction - Larvae in fruit.

Generations per year - One

52. RED IMPORTED FIRE ANTS
Solenopsis invicta

Quarantine - State Interior (CCR 3432)
- Federal Domestic (CFR 301.81)

Type of Pest – Insect
Order - Hymenoptera

Nature of Injury - Stings animate objects and may cause death to small or newborn animals. They attack a wide variety of sprouting plants below ground especially bunch beans, cabbage, collards, eggplant, okra, and potato. Leaves and stalks of corn and potato vines can be chewed off. They girdle young citrus plants at bud union. Hardened ant mounds damage or break farm equipment.

Life Cycle - Sexually mature winged forms may be found at almost any time of year. A mating flight occurs in the spring. After mating, a mated female finds a protected crevice or makes an excavation one to four inches deep in soil, casts off her wings and lays 10 to 15 eggs. The queen feeds the first larvae from food in her body. The care for following broods is done by adults from the first laid eggs. As the colony grows, underground boring continues to a depth of up to three feet. In hot dry weather, mounds remain small or absent. Under cooler moist conditions, mounds develop to 10 inches above the soil level and 15 inches in diameter in marshy terrain. In heavy soil a hard crust covers the honeycombed mound with galleries ranging from almost nothing up to 1-1/4 inches in diameter. Mound construction is generally at night. Exits are usually plugged and invisible during day. The coneshaped area below the mound contains most of the colony. Lateral tunnels are constructed to various distances, some with openings over 100 feet from the mound.

Description – Eggs - smooth, shiny white, laid by the fertilized queen in galleries. Larvae - dirty white, legless, sparsely covered with recurved hair. Pupae - are shiny white about the size of adults. Adults – Males are slightly smaller than wingless workers. There is no division of work between castes - both do the care of young, foraging, mound building, and protecting the colony. Coloration of workers varies between colonies from light brown to nearly black. A broad orange band on the dorsum is distinct on workers of darker colonies, but obscure on light colored colonies. Males are uniformly black. The queen coloration is like the workers.

Stage	Place	Time
Egg	In soil chambers	Spring - fall
Larvae	" " "	" "
Pupae	" " "	" "
Adult	" " "	All year

Workers Foraging - excavating All year except hot summer

Overwinter - Adults in colonies.

Likely Way of Introduction - Plants, soil, plant litter.

Generations Per Year - The duration from the laying of the egg to emergence of adult varies from 25 to 30 days.

53. SUGARCANE BORER
Diatraea saccharalis

Quarantine - State Exterior (CCR 3272)

Type of Pest – Insect
Order - Lepidoptera (Butterflies and Moths)

Hosts - Various crops including sugarcane, corn, rice, and sorghum. Various wild grasses and pampas grass are also attacked.

Nature of Injury - Losses are primarily the result of larval feeding within the stalk. This results in “dead hearts”, dead tops broken stalks, reduction in weight and sucrose content of harvested cane (up to 20%),. Other losses spoilage of bored stalk due to secondary damage from fungi, and deterioration of bored seed cane. Severe damage from this pest extends to corn and rice in heavily infested areas.

Description – Egg - flat and elliptical, about 1.6 mm long; laid in clusters of about 25 eggs each; creamy white in color, turning yellowish-white with maturity. Larvae - all but the overwintering larvae are a deeper yellow with spots absent or only faintly evident; about 25 mm in length at maturity. Pupae - Found within the borer tunnel in the stalk; ranges from light to dark brown in color; reaching a length of 18 to 20 mm. Adult - straw colored moth having each forewing marked with a somewhat V-shaped design of black dots. The fore wings are usually slightly darker than

the hind wings. Size may vary but averages about 25 mm from tip to tip of the spread wings.

Stage	Place	Time
Egg	Underside of leaf	Spring through summer
Larvae	In host stalks	All year
Pupae	In host stalks	Spring through summer
Adult	Flying about host	Spring through summer

Overwinter - As larvae in host plant stalks.

Most likely way of Introduction - Larvae or pupae in stalks

Generations per year - One to three

54. SWEET POTATO WEEVIL
Cylas formicarius elegantulus

Quarantines - State Interior (CCR 3257)
- State Exterior (CCR 3429)

Type of Pest – Insect
Order - Coleoptera (Beetles)

Hosts - Sweet potato, *Ipomoea batatas*, and all closely related morning glories of the genus *Ipomoea* (ornamental or wild succulent types). *Convol vulus* spp., common morning glory field-weed, may be fed upon, but are not a host for breeding purposes.

Nature of Injury - The adult weevils injure the sweet potato plant by feeding on the leaves, vines, and roots. The larvae feed within the stems, roots, and potatoes. Small holes in groups on the surface of potatoes are either feeding marks or holes made by females in laying their eggs. Newly developed weevils make larger holes when they emerge from the sweet potatoes. Weevil damaged potatoes are cut open. The grub-made tunnels can be seen, often with larvae or pupae in them. Infested sweet potatoes have a bitter taste and are unfit for consumption.

Life Cycles - The weevil lays its eggs in holes made in the stems of sweet potato plants or directly in the potatoes. In about a week, the eggs hatch into small white larvae, which feed and grow in the vines or in the potatoes. The larvae reach their full growth in two or three weeks and pupate in the stem or potato. Adult weevils emerge in seven or eight days.

Description – Egg - dull white. Larvae - legless grub, white with brown head. Pupae - yellowish-white. Adult - body and snout metallic blue, legs and thorax reddish-brown, 1/4-inch long. The body markings are very characteristic.

Stage	Place	Time
Egg	Tuber and stem	All year
Larvae	Tuber and stem	All year
Pupae	Cavity in root	All year
Adult	Leaves and stem	All year

Overwinter - All stages.

Likely Way of Introduction - All stages.

Generations Per Year - Every four to six weeks during growing season.

55. WALNUT HUSK FLIES
Rhagoletis boycei
Rhagoletis sauvis
*Rhagoletis juglandis**

Quarantines - State Exterior (CCR 3273)

Type of Pest – Insect
Order - Diptera (Flies)

Host - Walnut (R. completa also attacks peach)

Nature of Injury - Moist decay of the inner husk tissue where the larvae fed causes a staining or blackening of the shell. This coloration is probably caused by tannin released from the infested tissue. This stain cannot be removed by bleaching and the infested nuts are classed as culls.

Life Cycle - Adult flies begin to emerge from the soil beneath infested trees from July until October. About 10 to 15 days after they emerge from the soil they begin to lay eggs. One female may deposit from 200 to 400 eggs in her lifetime. The eggs are deposited in groups of about 15 in a small cavities made on green husk tissues. The eggs hatch in 5 to 10 days. The larvae begin to tunnel through the inner husk. The larvae become full-grown in about one month, emerge from the husk and drop to the soil where they burrow several inches into the soil and pupate. There is usually only one generation of husk flies per year. Only about 70 percent of the flies emerge at the end of the first year. The rest require two, three, or four years to emerge.

Description – Egg - small curved and pearly white. Larvae - whitish and semi-transparent, pointed at the head end. Pupae - barrel-shaped, straw colored and resembles a grain of wheat. Adult - about housefly size, varying in color from tawny to blackish with dark bands on the wings.

Stage	Place	Time
Egg	Cavity in husk	July to mid-October
Larvae	Inner walnut husk	July to September
Pupae	Soil	September to July
Adult	About husk	July to mid-October

Over winter - Pupae stage in soil.

Likely way of introduction - eggs and larvae in unhusked walnuts.

Generations per year - One

*Description applies to all species listed.

56. WESTERN GRAPE-LEAF SKELETONIZER
Harrisiana brillians

County Ordinance

Type of Pest – Insect

Order – Lepidoptera (Moths and Butterflies)

Hosts – Grape is the most significant host. Other hosts include Virginia creeper, Boston ivy, apricots, almonds, cherries and roses.

Nature of Injury – Larvae feed on leaves causing defoliation of vines.

Life Cycle – Eggs are laid in clustered groups of up to 300. Average count is 100. Eggs in a cluster group all hatch at the same time. The larvae begin to feed on underside of the leaf, lined up side by side in a circular row. Larvae progress through five instars stages.

Description – Egg - capsular-shaped, 0.4 mm wide and 0.6 mm long. Usually pale yellow but can be whitish. Larvae - unique body-ring colorations, consisting of two wide brown bands that mark the body into three: a forward, middle, and posterior sections. There are five narrow brown bands: two on the forward portion, one on the middle section between the wide brown bands, and two on the posterior. Body color between bands is pale brown. Pupae - spin silken cocoons in which to pupate. The cocoons, irregular in shape, dirty white in color are found in trash around the base of vines or under loose bark on the trunk and cordons. Adults – are bluish black to greenish black color. Body length is about 16 mm. Moths have comb-like bristles projecting from the antennae. However, the male's bristles are twice as long as the females.

Stage	Place	Time
Egg	Underside of leaf	Spring to September
Larvae	Underside of leaf	May/June to October
Pupae	Ground/vine	Winter
Adult	Vineyard	Spring to Fall

Overwintering Stage – Pupae

Most likely means of introduction – Infested Nursery stock

Generations per year – about three

57. BURROWING NEMATODE
Radopholus similis
"Spreading Decline"

Quarantines - State Exterior (CCR 3271)

Type of Pest – Endoparasitic Nematode

Hosts – Very extensive and includes Citrus, avocado, agnolia, banana, philodendron, anthurium, strelitzia (Bird of Paradise), ginger, Cyprus including nutgrass, bamboo, sweet potato, othos, are some of the more important hosts.

Symptoms - Citrus appears to be the most severely affected. The disease is called "Spreading Decline" because it spreads in a somewhat circular fashion from the area of infestation at the rate of about one and onehalf tree rows per year. The general appearance of infected plants is nonspecific. Symptoms are generally unthriftiness, stunting, sparseness of foliage, smallness of fruit, yellowness or off-color of leaves, dying back of leaves, and other symptoms that would be expected of root or crown injury. Brownish to blackish lesions on roots may be present and feeders may be girdled. Secondary decay of roots will follow.

Life Cycle - The nematode does not produce cysts and is killed fairly easily by soil fumigants

Inspection for Burrowing Nematode – Positive identification is done by recovering and identifying the nematode itself. This will require a microscope and trained nematologist. However, suspicion should be directed toward trees whose appearance and distribution correlate to the disease symptoms. The general presence of other nematodes in California, often tend to mask root symptoms. Inspections for this pest also result in the detection and rejection of shipments infested with other serious nematodes, such as the reniform nematode.

58. GOLDEN NEMATODE
Heterodera rostochiensis
Globodera rostochiensis
"Potato Nematode"

Quarantine - Federal Domestic (CFR 301.85)

Type of Pest - Cyst nematode.

Hosts - Potato, tomato, eggplant, snapdragon, and various solanaceous weeds.

Symptoms – Infested plants grow slowly and develop poorly. Infected potatoes form only one to three stems, with very small or no tuber formation. Other symptoms include wilting of the lower and then upper leaves followed by gradual wilting of the entire plant commencing about June.

Life Cycle – Viable eggs may remain in the cysts for seven or eight years until a favorable host plant is present. Not all the eggs hatch at one time. The nematode can move from one point to another in all stages of development with the aid of such materials as potato tubers, cyst-infested soil, agricultural equipment and human and animal feet. Cysts can also be moved by rain, water and wind.

Description - This cyst nematode's principal host is potato. It greatly reduces production in severely infected fields. Since it is limited to specific hosts, crop rotation or host free period are the best means of control or eradication in infected areas. This nematode is very widespread in the temperate zones of the world. At the present time the only known infestation in North America are in New York on Long Island and in two western counties of that state.

Inspection for Golden Nematode – The Nematode attacks both the roots and tubers. Soil clinging to tubers, roots and other plant material is removed or washed off with water and processed in a laboratory.

Control – the most effective measures for control are crop rotation, treating the soil with nematicides and use of nematode-resistant potato varieties.

59. RENIFORM NEMATODE
Rotylenchulus reniformis

Quarantine - State Exterior (CCR 3271)

Type of Pest – Endoparasitic Nematode.

Hosts – over 140 plant species; a large number of cultivated plants and fruit trees including but not limited to, banana, citrus, coffee, cotton, jackfruit, mango, okra, papaya, pineapple, potato, rice, soybean, sugarcane, sweet potato and tea.

Symptoms - Infestation results in discoloration of the roots, drying and shedding of leaves and small malformed seeds with poor quality. The nematode is an important factor in the incidence of Fusarium and Verticillium wilts of cotton.

Life Cycle – Eggs hatch in about eight days; larvae develop into adults in about nine more days; larvae develop through three molts to preadult stage without feeding. All larval stages and males are found in the soil. The nematode is capable of surviving in air-dried soils for extended periods of time.

Inspection for Reniform Nematode – After the larvae's final molt, the young female adult as the infective stage, seeks to penetrate host roots. Feeding occurs on cortical tissue, phloem and pericycle. The nematode prefers fine textured soils with a relatively high content of silt and/or clay. Inspections for this pest also result in detection and rejection of shipments infested with other serious nematodes, such as the burrowing nematode.

60. HYDRILLA
Hydrilla verticillata

Quarantine - State Interior (CCR 3410)
- State Exterior (CCR 3281)

Type of Pest - Aquatic Weed

Hydrilla is an aquatic weed that can restrict water flow and render recreational lakes and ponds unusable by its thick growth.

The weed was probably first introduced from South America into Florida about 1960. It was sold as an aquarium plant. Hydrilla has appeared in several states including Alabama, California, Georgia and Texas.

Identifying Characteristics –
(1) Submerged, bottom-rooted perennial herb with long branching stems which may break loose and form floating mats.
(2) Lower leaves opposite and small, middle and upper leaves in whorls of 2 to 8 and somewhat larger.
(3) Leaves sessile, linear-lanceolate, 10-20 mm, long and 2-5 mm wide with sharply toothed margins. There may be a prominent red midrib.
(4) Glands protrude along the midrib on the bottom inside of the leaves (a feature absent in *Elodea* species).
(5) Turions form in some leaf axils, tubers develop on the ends of subterranean rootstocks.

Analogous Species:
(1) Brazilian Elodea, *Elodea densa*. This species of *Elodea* has a smooth, soft leaf texture and green midribs. Similar characteristics also distinguish *Elodea canadensis* from Hydrilla.
(2) The water-milfoils, *Myriophyllum* sp. The submerged leaves of this species are pinnately divided into capillary lobes. Leaves are smooth margined.

61. WITCHWEED
Striga asiatica

Quarantine - Federal Domestic (CFR 301.80)

Type of Pest - Parasitic herbaceous annual plant

Hosts - Corn, sugarcane, sorghum, Sudan grass, millet, grasses, and others.

Description - The plants are normally 8 or 9 inches high, seldom over 12 inches and of a bright green color. Leaves are alternate, slender, and slightly hairy on both sides. Aerial stems appear somewhat square caused by four ridges running lengthwise, while the underground parts are round. Roots entwine with those of the host plant, are white to purple in color with small scale-like leaves. Small suction cup-like swellings on root terminals are attached to the host. The flowers are usually orange-red, occasionally yellow to pink. Each flower has an irregular two-lipped corolla.

Life Cycle - Germination begins like an ordinary plant but soon attach, itself to the host for water and nutrients. The vegetative parts that appear above ground turn green and begin manufacturing chlorophyll and food. It becomes semi-parasitic, deriving some water and minerals from the host. An unknown secretion from hosts is believed necessary to start seed germination otherwise the seed remains dormant for years. New seeds become ready three to four months after germination. Each plant produces 50,000 to 500,000 minute seeds.

Inspection for Witchweed - Examine host plant for white and purplish root systems and the bell-shaped attachments. Bright green secondary growths with square-shaped aerial stems should be suspected. Seeds are visible under a microscope.

RELATED LINKS
CDFA Plant Pest Ratings
♦ Invertebrates
♦ Pathogens/Diseases
i. Bacteria
ii. Fungi
iii. Nematodes
iv. Viruses, virus-complexes
♦ Vertebrates
♦ Weeds
i. Noxious Weeds
ii. Weed Policy

Invasive Species Search
National Agricultural Pest Information System

Review Questions on next page.

5.3 REVIEW QUESTIONS

1. A shipment of feed grain infested with white horse nettle seed should be rejected under the authority of provisions of the?

   A. California Code of Regulations (CCR)
   B. California Food and Agricultural Code (FAC)
   C. Plant Pest Act
   D. California Seed Law

2. Philodendron plants shipped to California from Michigan and accompanied by an origin certificate stating that they were grown in Florida:

   A. Must be rejected unless they bear a valid Florida Burrowing and Reniform Nematode certificate
   B. Are admissible provided they have been fumigated with Methyl Bromide at origin
   C. Are in violation of the Burrowing and Reniform Nematode Quarantine and must be rejected unless they have been found free of nematodes by laboratory sampling
   D. Do not need to be sampled if they bear a valid Burrowing and Reniform Nematode certificate

3. A commercial shipment of plants established in soil from Maryland, a state covered under the Japanese Beetle Exterior Quarantine, should be accompanied by a:

   A. A federal "Shipping Point Inspection" certificate
   B. Certificate signed by the county agent at the point of origin
   C. Certificate executed by an inspector of USDA's Plant Protection Service
   D. Certificate issued by an authorized state official issued at origin that the plants were treated for Japanese beetle by a method prescribed by the Secretary (CDFA)

4. Which of the following applies to a shipment of plants from Hawaii?

   A. Subject to terminal inspection only
   B. Entry permitted under permit from the state of Hawaii
   C. No restriction at the present time
   D. Must be certified as to freedom from Burrowing and Reniform Nematode

5. The best time to inspect vegetable seed for seed borne diseases is:

   A. During the growing season
   B. Immediately after harvest and before the seed has been cleaned
   C. In the laboratory after cleaning and processing
   D. After the seed has been in storage for six months, as disease may cause a musty odor to the seed

6. In accordance with "Procedure for Handling Plant Quarantine Shipments" (Memorandum of Understanding), which of the following would not be a valid reason for rejection:

   A. A shipment that is infested with an insect pest of limited distribution
   B. A shipment that is infected with a serious plant disease new to California
   C. A shipment that you have reasonable cause to presume to be infected with a disease under eradication
   D. A shipment that you have reasonable cause to presume to be infected with a weed pest under eradication

7. A shipment of gerbils arriving in California from New Jersey should be rejected under:

   A. California Fish & Game Regulations
   B. California Public Health Regulations
   C. USDA Regulations
   D. The Lacy Act

8. A laboratory desiring a permit to receive and handle plant quarantine material should make application by letter through their County Agricultural Commissioner to CDFA. The initial inspection for approval of the laboratory will be made by a:

   A. Representative of the County Agricultural Commissioner, USDA, and CDFA
   B. Representative of the County Agricultural Commissioner and USDA
   C. Representative of the USDA and CDFA
   D. Representative of the County Agricultural Commissioner and CDFA

9. Inspecting a shipment of tomato plants from Kansas, you would be most apt to find the larvae of the Colorado potato beetle:

   A. In soil about the roots
   B. On the leaves and stems of the plants
   C. Boring inside the plants
   D. Feeding on the roots

10. The County Agricultural Commissioner may refuse to issue a phytosanitary certificate:

    A. At no time
    B. When the exporter refuses to pay for the inspection services
    C. Anytime the commodity cannot meet the importing country's entry requirements
    D. Only when the exporter has a bad reputation

11. A chestnut tree from New York State bearing an origin certificate should be:

    A. Held for Secretary's permit
    B. Refused admittance and destroyed or shipped out of state
    C. Treated with Methyl Bromide and released
    D. Inspected and if findings are negative, released

12. Walnut trees from Iowa, officially certified at origin as coming from an area free from "Brooming" disease of walnuts, should be:

    A. Rejected and destroyed or immediately shipped out of state
    B. Treated in accordance with the approved treatment contained in the nut tree pests' quarantine
    C. Held pending the issuance of a permit by the Secretary
    D. Inspected, and if findings are negative, released

13. On a shipment of unfumigated sweet potato tubers from Texas, you would require a:

    A. Federal "Shipping Point Inspection" certificate
    B. Certificate signed by an inspector of the Federal Plant Quarantine branch stating that the sweet potatoes were grown, packed and stored in an area free from sweet potato weevil
    C. Certificate, signed by the official of the state of origin, stating that the sweet potatoes were screened and shipped in new or clean sacks
    D. Certificate, signed by the official of the state of origin, stating that the sweet potatoes were grown, packed and stored in an area where sweet potato weevil is not known to occur

14. When a known treatment can be safely given, but treatment facilities do not exist in the county of destination, the owner or bailee of an infested shipment should be:

    A. Required to return the shipment to origin or destroy it
    B. Allowed to recondition the shipment and to retain that portion not heavily infested
    C. Required to return the shipment to origin after permission is received from official at origin
    D. Given the option of shipping to the nearest point where material may be safely treated, returning to origin, or destroying

15. When any person that aggrieves an action or order relating to Plant Quarantine issued by a Commissioner, and that person has appealed the order to the Secretary of Food & Agriculture, the Secretary shall hear such appeal within:

    A. 10 days
    B. 15 days
    C. 30 days
    D. 60 days

16. The following commodities are covered in the Chestnut Bark-Oak Wilt Exterior Quarantine except:

    A. Chestnut trees for propagation.
    B. Chestnuts.
    C. Chestnut cuttings or scions.
    D. Chinquapin lumber.

17. A shipment of cactus plants originating in a county in New Mexico not infested with Ozonium Root Rot and not accompanied by official certificate should be:

    A. Held for Secretary's permit.
    B. Treated with formaldehyde and released.
    C. Refused admittance and destroyed or shipped out of state.
    D. Inspected and released if inspection findings are negative.

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18. A commercial shipment of harvested broomcorn from New Mexico should be:

    A. Inspected and released if found free from insects and disease.
    B. Released after inspection reveals negative findings and a Cornstalk Borer and Sugarcane Borer Quarantine certificate covers shipment, issued by the origin state.
    C. Certified from the state of origin, evidencing freedom from the European corn borer.
    D. Destroyed as broomcorn is prohibited from New Mexico.

19. Citrus seed is admissible to California under provisions of the California Citrus Pests Exterior Quarantine when:

    A. Treated for Citrus Canker.
    B. Under permit issued by the Secretary.
    C. Accompanied by an origin certificate.
    D. Inspected and found free of pests.

20. Provisions of the Sweet Potato Weevil Exterior Quarantine restrict all but one of the following. Indicate the exception:

    A. Hothouse grown Sweet Potato draws.
    B. Sweet Potato tubers from the northern states.
    C. Morning glory plants from the infested area in Texas.
    D. Morning glory plants from the non-infested areas in Texas.

21. Oak trees originating in Tennessee should be:

    A. Held for Secretary's permit.
    B. Refused admittance and destroyed or shipped out of state.
    C. Treated with Methyl Bromide and released.
    D. Inspected and released if inspection findings are negative.

22. Which would be considered an approved chamber for conducting quarantine fumigation:

    A. A permanent chamber approved by the California Department of Food & Agriculture.
    B. A permanent chamber approved by the County Agricultural Commissioner.
    C. A tarpaulin enclosure certified by a Pest Control Operator. (PCO)
    D. All of the above.

23. Live specimens of the Red Imported Fire Ant (RIFA) arrive from Alabama. Which of the provisions listed below would be the proper authority to reject them?

    A. The California Department of Food and Agricultural Code (FAC)
    B. Imported Fire Ant Federal Domestic Quarantine.
    C. The California Code of Regulations.
    D. Rules and Regulations of the Secretary.

24. A shipment of Pecan trees without nuts of Texas origin arriving by express from Washington State should be:

    A. Rejected and destroyed or shipped out of state.
    B. Released if certified or fumigated or hot water treated in Washington State and that the trees were officially certified grown in Texas in Ozonium Root Rot free premises.
    C. Released if accompanied by a Texas Ozonium Root Rot Certificate.
    D. Inspected and released if no live pests are found.

25. Under provisions of the Federal Gypsy Moth Quarantine, dormant bare-root apple trees from infested areas:

    A. Are prohibited movement from the quarantine area.
    B. May be moved from the quarantined area without restriction if visibly free from serious pests.
    C. Are permitted interstate movement from quarantined area if accompanied by a federal certificate.
    D. May be moved interstate without restriction under permit from the destination state official.

26. Uncertified Peach trees originating in Pennsylvania should be:

    A. Held pending application for a USDA permit.
    B. Refused admittance and destroyed or shipped out of state.
    C. Treated with a 2% formaldehyde solution and released.
    D. Inspected and if findings are negative, released.

27. California grown Persimmon trees, which are shipped into Oregon and are then reshipped from Oregon into California should be:

    A. Released if found to be free of pests.
    B. Released if accompanied by a fumigation certificate.
    C. Rejected regardless of certification.
    D. Admitted if accompanied by an official Oregon certificate evidencing California origin and reshipment the same season.

28. The authority to make quarantine inspection is found in the:

    A. Border Station Manual of Instructions.
    B. Quarantine Handbook.
    C. California Food & Agricultural Code (FAC)
    D. California Code of Regulations (CCR)

29. Uncertified peach cuttings from Alfalfa County, Oklahoma should be:

    A. Held pending application for a USDA permit.
    B. Refused admittance.
    C. Treated with a 2% formaldehyde solution and released.
    D. Inspected and if inspection findings are negative, released.

30. The Agricultural Commissioner may not accept shipments of Sugar beets from Arizona for processing in his county unless the beets are:

    A. Screened at origin to remove moist clods of soil.
    B. Accompanied by an Ozonium Root Rot certificate.
    C. Moving under a USDA compliance agreement.
    D. Fumigated at origin with Methyl Bromide.

31. Mechanical Cotton picking machines may enter California from the quarantine area:

    A. After inspection if inspection findings are negative.
    B. If certified as steam cleaned.
    C. If certified as having been operated only in a noninfested area.
    D. If accompanied by an official certificate of fumigation.

32. Authority and obligations to make "such inspections as may be necessary" of crops producing seed for export is presented in California Food and Agricultural Code Section 5205. The seed fields are inspected to satisfy the requirements of?

    A. United States Department of Agriculture
    B. California Department of Food and Agriculture
    C. County Agricultural Commissioners
    D. The state or country of destination.

33. Any treatment which may be required by the "Quarantine and pest control" portion of the California Food & Agricultural Code shall be at the expense of the:

    A. County
    B. CDFA
    C. Owner
    D. State of origin

34. Any lot of seed screenings or cleanings from crop seed containing the seed of any pest, if not disposed of as provided in Section 7576 of the Food & Agricultural Code, is subject to seizure on complaint to a court of competent jurisdiction by the:

    A. Unit Chief, Pesticide Enforcement.
    B. Board of Supervisors.
    C. District Attorney.
    D. Secretary of Food & Agriculture, or the Agricultural Commissioner.

35. Under the provisions of the Citrus Pests Quarantine, citrus trees, plants and buds grown in the area under quarantine are:

    A. Admissible if destined for planting in non-citrus producing areas, subject to destination inspection.
    B. Prohibited entry except for experimental shipments, shipped by or at the request of the USDA.
    C. Admissible under certificate of origin.
    D. Prohibited entry unless moving under bond in transit to a California Port for immediate export.

36. Seed screenings are permitted to move without restriction:

    A. Until such time as inspected and found infested.
    B. When being returned to the premise where the seed originated.
    C. For the purpose of destruction and processing.
    D. After processing to render seed of any pest incapable of propagation.

37. A "Host-free District" or "Host-free Period" for the host of a particular pest may be declared by the:

    A. C.A.C.
    B. California State Governor
    C. Secretary of CDFA
    D. California Legislature.

38. The first time a shipment of plant material to Florida is rejected due to European Brown Garden Snail, the shipper is suspended for:

    A. Ten days
    B. Thirty days
    C. Sixty days
    D. Six months

39. According to the California Food & Agricultural Code, if there is no Commissioner in the county when agricultural commodities are received, the person transporting, receiving or importing the agricultural commodities shall notify?

    A. Secretary, CDFA
    B. California State Governor,
    C. C.A.C. of the adjoining county.
    D. President, State Board of Agriculture.

40. USDA has established conditions under which plant material may be imported into the United States. Some species of plants are held under Postentry quarantine. The regulatory agencies involved in California are:

    A. County Department of Agriculture and the USDA.
    B. USDA and the California Department of Food & Agriculture.
    C. USDA, CDFA, and the County Department of Agriculture.
    D. None of the above.

41. A shipment of Persimmon trees from Georgia should be:

    A. Released if inspection reveals no live insects.
    B. Released if defoliated.
    C. Rejected and destroyed or shipped out of state.
    D. Released if defoliated and certified fumigated at origin.

42. Insects in the adult stage have:

    A. Four pairs of jointed legs.
    B. Two definite body regions--head and abdomen.
    C. One pair of antennae.
    D. An external skeleton that is often shed with seasonal change.

43. A Federal Phytosanitary Certificate would not be issued on plant material exported to:

    A. Austria.
    B. Mexico.
    C. Canada.
    D. Guam.

44. In California, the responsibility of approving growing grounds for post-entry quarantine (importation of foreign nursery stock and growing under quarantine) rests primarily with:

    A. The Secretary of Food & Agriculture.
    B. USDA.
    C. The State Plant Pathologist.
    D. The County Agricultural Commissioners.

45. The County Agricultural Commissioner shall report to the Secretary of Food & Agriculture on what is being done to quarantine against pests in their county:

    A. Annually
    B. Biennially
    C. Monthly
    D. Weekly

46. Cotton lint, linters and waste, as covered in the Cotton Pest Exterior Quarantine, are admissible under all but one of the following conditions:

    A. Accompanied by a Secretary's permit.
    B. Treated before shipment to California.
    C. Covered by an origin certificate.
    D. When arriving in bales compressed to a density of at least 22 lbs. per cubic foot.

47. Chinquapin nuts are prohibited movement from certain other states into California by the:

    A. Chestnut Bark-Oak Wilt Disease Exterior Quarantine.
    B. Eastern Filbert Blight Exterior Quarantine.
    C. Nut Tree Pests Exterior Quarantine.
    D. Elm Tree Disease Exterior Quarantine.

48. Under the California Food & Agriculture Code, which of the following is specifically given permission, subject to certain provision, to import into California parasitic and predaceous insects for use in control of insect pests:

    A. The Governor of California.
    B. The California Association of County Agricultural Commissioners.
    C. The Regents of University of California.
    D. The United State Conservation Service.

49. Walnut trees without nuts shipped from Idaho to California would be restricted under:

    A. Walnut Pests Exterior quarantine
    B. Ozonium root rot Exterior Quarantine
    C. Western Filbert Blight Exterior Quarantine
    D. Nut tree Pests Exterior Quarantine

50. Quince fruits originating in an area under quarantine for Plum Curculio are:

    A. Prohibited entry into California.
    B. Admitted if certified as having been grown, stored, packed and shipped from a free area.
    C. Admitted under certificate of proper cold storage treatment.
    D. Admitted after inspection if inspection findings are negative.

51. Chestnuts grown in Ohio and shipped to a California destination should be:

    A. Held, and consignee instructed to apply for permit from the Secretary.
    B. Treated with hot water and released.
    C. Rejected and destroyed or immediately shipped out of state.
    D. Inspected and released if in original, unopened containers and findings are negative.

52. On a shipment of Irish potatoes from Idaho contaminated with soil, you would require a:

    A. Federal “Shipping Point Inspection” certificate.
    B. Certification signed by a county agent, stating that they were grown packed and stored in an area free from Colorado potato beetle.
    C. Certification signed by an inspector of the Federal Plant Quarantine Branch evidencing storage in an area free from Colorado Potato Beetle.
    D. Certification signed by the official of the state of origin stating that the potatoes were grown, packed and stored in an area free from Colorado Potato Beetle.

53. The Plum Curculio Quarantine provides that apples may enter California from the area under quarantine if they are:

    A. Officially certified as having been given a specified “Controlled Atmosphere” storage treatment.
    B. Individually inspected and found to be free of pests.
    C. Certified as being produced in orchards that practice conventional pest control.
    D. Officially certified as fumigated with Ethylene Dibromide.

54. Inspecting a shipment in soil, arriving during the month of March, you would look for Japanese beetle larvae:

    A. In soil about the roots.
    B. On the leaves and stems of the plants.
    C. In the stems of the plants.
    D. Both above and below portions of the plant.

55. A shipment of Irish potatoes from the area infested with Colorado potato beetle should be:

    A. Rejected unless indicated by an origin certificate to be from an area free from Colorado potato beetle
    B. Released without certification if inspection shows freedom from soil and debris.
    C. Rejected unless accompanied by a screening certificate.
    D. Released if accompanied by a shipping point certificate.

56. Plum trees originating in an area defined in the Peach Mosaic Disease Exterior Quarantine as the quarantined area are:

    A. Prohibited entry into California.
    B. Admitted under a certificate of treatment.
    C. Admitted under inspection, if inspection findings are negative.
    D. Admitted under certificate of origin.

57. Chestnuts (nuts) from Italy, arriving in California in original unopened containers, should be:

    A. Rejected and required to be shipped immediately out of state or destroyed.
    B. Fumigated for Chestnut Weevil regardless of inspection findings.
    C. Released if inspection for pests is negative.
    D. Held for certification of treatment at the port of importation by the USDA.

58. Citrus plants from Florida completely defoliated at origin should be:

    A. Refused admittance.
    B. Examined and, if inspection reveals no pests, released.
    C. Held for a certificate of origin.
    D. Fumigated with the approved White Fly dosage.

59. Under the quarantine provisions of the Food & Agricultural Code, it is a misdemeanor to:

    A. Move hay containing the mature seed of a secondary noxious weed.
    B. Move seed containing seed of a primary noxious weed.
    C. Move unprocessed seed screenings that have not been inspected.
    D. Move a rail car from out of state with cottonseed.

60. Cottonseed and seed cotton from the infested states or areas listed in the Cotton Pests Exterior Quarantine are:

    A. Admissible when certified by a state official at point of origin.
    B. Prohibited entry.
    C. Admitted if accompanied by an official permit or fumigation certificate.
    D. Released if inspection findings are negative.

61. A shipment of corn plants from the quarantined area should have which of the following certificates to comply with the Federal Domestic Witchweed Quarantine:

    A. Federal Shipping Point inspection certificate
    B. Certificate signed by the county agent at point of origin
    C. County fumigation certificate.
    D. Certificate executed by an inspector of the Plant Protection Division, USDA.

62. What type of inspection is given to vehicles entering California?

    A. The type that reveals all plant material contained in a car.
    B. The type that reveals most plant material contained in a car.
    C. The type and kind that does not inconvenience any traveler.
    D. The type and degree of inspection that is based on the pest hazard present.

63. Cotton lint, linters, and waste as covered in the Cotton Pests Exterior Quarantine are exempt from the certificate requirements when:

    A. Accompanied by a Secretary's permit.
    B. Fumigated before shipment to California.
    C. Covered by an origin certificate.
    D. When arriving in bales compressed to a density of at least 22 lbs. per cubic foot.

64. Fumigation chambers must be certified annually to ensure that they are safe, efficacious, properly calibrated and in proper working order. If the certification of a chamber has expired, which of the following cannot be done:

    A. Issue a Phytosanitary certificate for commodity export.
    B. Fumigate walnuts to kill insect pests.
    C. Fumigate raisins to prevent fungus growth.
    D. All of the above.

65. Organic apples for juicing may enter a county that has an apple maggot ordinance when:

    A. The origin commissioner has inspected the fruit for larvae.
    B. Accompanied by a certificate issued by an authorized federal/state shipping point inspector.
    C. The grower is in compliance with the California Organic Foods Act.
    D. None of the above.

66. The movement of Citrus Nursery Stock within the county of production, is not regulated by the Citrus Tristeza Virus Quarantine in the following county:

    A. Los Angeles
    B. San Diego
    C. Fresno
    D. Merced

67. A shipment is officially "rejected" only:

    A. When returned out of state
    B. When returned out of state, destroyed, or treated
    C. When found in violation of any quarantine provision
    D. When a Quarantine Inspector issues a "Notice of Rejection", regardless of any other action taken

68. The following document is normally used to authorize the movement of exposed host fruit to a processing facility:

    A. "Certificate of Quarantine Compliance"
    B. Federal "Certificate"
    C. Federal "Limited Permit"
    D. Project "Compliance Agreement"

69. Quarantine inspectors may demand proof of ownership of any plant material.

    A. Whenever an eradication area has been established.
    B. If in lots of 25 lbs. or more and marked for commercial purposes.
    C. Only if an inspection warrant has been issued.
    D. Marked for commercial purposes and the inspector has reasonable cause to presume is in violation of any quarantine provision.

70. Plant products are usually certified as meeting the import requirements of foreign countries using:

    A. Certificate of Quarantine Compliance.
    B. Letter of credit and condition.
    C. Phytosanitary certificate.
    D. Validated Import Permit.

71. The second time a shipment of plant material to Florida is rejected due to European Brown Garden Snail, the shipper is suspended for:

    A. Thirty days
    B. Sixty days
    C. Six months
    D. One year

72. An inspector may, in a summary manner, seize and destroy any host or possible carrier of a pest:

    A. When there is reasonable cause to believe it is infested with a pest
    B. Following the procedures for abating a public nuisance
    C. Only when an eradication area has been proclaimed
    D. Only after giving notice to the person in possession

73. Which one of the following states do not quarantine for European Brown Garden Snail:

    A. Tennessee
    B. Washington
    C. Louisiana
    D. Georgia

74. A shipment of plant material brought into California will have all but one of the following upon it:

    A. Statement of contents
    B. Name of the country, state or territory where contents were grown
    C. Declared value of shipment
    D. Name and address of shipper

75. Which of the following applies to plant material from Hawaii:

    A. Cut flowers are certified with a USDA Limited Permit stamp
    B. Cut flowers are exempt from certifying requirements
    C. Nursery stock is certified with a USDA Limited Permit stamp
    D. Nursery stock is subject to inspection only

76. Under certain conditions a prohibited mammal(s) can be brought into California. A permit(s) from the following must be obtained:

    A. California State Department of Health Services
    B. California State Department of Fish & Game
    C. California State Department of Food & Agriculture
    D. All of the above

77. Which of the following fruits or vegetables are quarantined when originating in Arizona:

    A. Apple
    B. Citrus
    C. Corn
    D. Persimmon

78. A California quarantine is a:

    A. Regulation or proclamation adopted and enforced administratively.
    B. Guide for operation in enforcement of the California Code of Regulations. (CCR)
    C. Guide for operation in enforcement of the California Food & Agricultural Code. (FAC)
    D. Public notice and issued for dissemination of information.

79. When rejecting grain found infested with the seed of a pest, under authority of Section 6341-6344 of the California Food and Agricultural Code (FAC), which of the following would not apply?

    A. Return it to point of shipment within 48 hours
    B. Given approved treatment under the supervision of the Secretary or the Commissioner, and after such treatment the shipment may be released
    C. The shipment may be stored for a period of time in an approved place under such conditions as the Secretary or Commissioner may require
    D. Shipment may be permitted to be stored in an approved manner only when waiting to be returned to point of shipment

80. It is the County Agricultural Inspector's responsibility to certify commodity fumigations. Which of the following are not necessary to successfully complete this task:

    A. Inspect chamber safety to assure respirators, sign checklist and applicators are in proper working order and being used
    B. Observe and monitor duration, pulp temperature, gas measurement, gas introduction, and gas evacuation
    C. Monitor worker exposure levels while gas is introduced, while gas is evacuated, and while commodity is being off loaded
    D. Terminate fumigation if any unsafe work practice or mechanical failure is observed

81. A rose cutting from Japan held at a Post Office and recognized as not inspected should be:

    A. Either returned to origin or destroyed as elected by the shipper
    B. Immediately destroyed
    C. Held while a California state rejection notice is issued giving options of having the cutting fumigated, returned to origin, or destroyed
    D. Called to the attention of the Postmaster and returned to an office where USDA Plant Quarantine inspectors are assigned.

82. Quarantine Proclamations are:

    A. Interior Quarantines
    B. Exterior Quarantines
    C. Secretary's Memorandums
    D. Federal Domestic Quarantines

83. Federal Domestic Quarantines are enforced in California under authority vested in:

    A. Section 6301 of the California Agricultural Code
    B. Section 2319(b) of the California Political Code
    C. Section 3151 of the California Administrative Code
    D. Federal Plant Quarantine Act of 1912 (amended)

84. The California Code of Regulations is a:

    A. Statutory enactment by the State Legislature
    B. Group of memoranda written by the Governor
    C. A codified group of administrative rules
    D. A codified group of plant quarantines only

85. California Plant Quarantines are levied against:

    A. States
    B. Pests
    C. Properties
    D. People

86. In order to become legally effective, a Quarantine Regulation (interior quarantine) must be:

    A. Established by the Secretary and proclaimed by the Governor
    B. Established by the Secretary
    C. Approved by the Agricultural Board
    D. Approved by the Western Plant Board

87. In order to become legally effective, a Quarantine Proclamation (exterior quarantine) must be:

    A. Established by the Secretary and proclaimed by the Governor
    B. Established by the Secretary
    C. Approved by the Agricultural Board
    D. Approved by the Western Plant Board

88. When the Agricultural Code states that the Secretary shall perform an Act, it means:

    A. It is permitted that s/he perform the Act
    B. It is mandatory that s/he perform the Act
    C. It is a moral obligation on her/his part to perform the act
    D. It is up to the Legislature to incorporate the secretary's rulings into the statutes

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90. Any person in whom the enforcement of any provision of the code is vested:

    A. Must see to it that the District Attorney enforces those provisions
    B. Shall act in an advisory capacity to the sheriff
    C. Has the power of a public officer
    D. Has the power of a public officer in the enforcement of the code.

91. Cherry fruit flies overwinter in the:

    A. Larvae stage
    B. Pupae stage
    C. Adult stage
    D. All stages

92. Blueberry maggot is most apt to be intercepted at which stage?

    A. Adult
    B. Pupae
    C. Larvae
    D. Egg

93. Plum curculio is most apt to be intercepted in the:

    A. Adult stage
    B. Pupae stage
    C. Larvae state
    D. Egg stage

94. Pecan leaf case bearer and nut case bearer are most likely to be intercepted on:

    A. Logs
    B. Nuts
    C. Nursery stock
    D. Containers

95. The area under quarantine for the persimmon root borer is:

    A. Southern states only
    B. Eastern states only
    C. All states, districts, and territories of the U.S.
    D. All states east of Texas, Oklahoma, Kansas, Nebraska, North Dakota, and South Dakota

96. Lethal yellowing of palm is caused by:

    A. A virus
    B. An insect vector
    C. Bacteria
    D. Mycoplasma-like organisms

97. Brooming disease of walnut is not known to attack:

    A. English walnut
    B. Butternut
    C. Black walnut
    D. Pecan

98. Japanese plum trees from Tennessee should be:

    A. Held pending application for Secretary's permit
    B. Inspected and, if findings are negative, released
    C. Refused admittance and destroyed or shipped out of state
    D. Passed if certification is in order

99. Almond trees originating in Pennsylvania should be:

    A. Held pending application for Secretary's permit
    B. Refused admittance and destroyed or shipped out of state
    C. Treated with a 2 percent formaldehyde solution and released
    D. Inspected and, if findings are negative, released

100. Shipment of bare-rooted peach nursery stock, originating in the State of Oregon and unaccompanied by an origin certificate should be:

A. Held pending application for Secretary's permit
B. Refused admittance and shipped out of the state
C. Treated with a 2 percent formaldehyde solution and released
D. Inspected and, if findings are negative, released

101. You would pass a shipment of peach trees from Georgia if it were accompanied by a?

A. Nursery inspection certificate
B. "Shipping Point Inspection" certificate
C. Certificate attesting to approved treatment
D. Certificate signed by the state of origin official that they were produced in an area free from peach rosette

102. Which one of the following states is not under quarantine for Peach Rosette disease?

A. Arkansas
B. Oklahoma
C. Texas
D. Tennessee

103. Marianna plum trees from South Carolina should be

A. Held pending application for Secretary's permit
B. Inspected and, if findings are negative, released
C. Refused admittance and destroyed or shipped out of state
D. Passed if certification is in order

104. Which one of the following is most descriptive of the area quarantined for Chestnut Bark disease?

A. Pacific Northwest
B. All states and districts of the U.S. except Arizona
C. The southern states
D. Atlantic seaboard states

105. Golden Nematode primarily attacks which of the following:

A. Tomatoes, squash, potatoes
B. Potatoes and squash
C. Potatoes and tomatoes
D. Tomatoes and sweet potatoes

106. Which one of the following would be refused entry under the Ozonium Root Rot quarantine?

A. Nursery stock free from roots and soil
B. Mangels and sugar beets
C. Aquatic plants
D. Orchid plants growing in osmuda fiber

107. Which one of the following states is not under quarantine for Cedar-Apple Rust?

A. Alaska
B. New York
C. Oklahoma
D. Wyoming

108. Under the Black Stem Rust quarantine which one of the following is not a regulated product:

A. Mahonia
B. Mahoberberis
C. Mahonia cuttings for decorative purposes
D. Berberis

109. During the inspection of an automobile trunk the driver declares two Chestnut trees from Georgia. A certificate stating that the trees are from an area free from Chestnut Bark disease. You should:

A. Inspect and pass if findings are negative
B. Reject and destroy or ship out of state
C. Fumigate with methyl bromide and pass
D. Tell the tourist he should have known better

110. Which one of the following is most descriptive of the area under quarantine for Oak Wilt:

A. All states east of the Rocky Mountains
B. All states and districts of the U.S. except Arizona
C. Mid-western states
D. Eastern states

111. Before writing a phytosanitary certificate on a commodity, you should refer to:

A. The Plant Quarantine Manual
B. Shipping Point Guide
C. Q.C. Circular
D. Export Certification manual or Excerpt

112. To meet the requirements for an approved feed grain mill, the size of the screens used for grinding can be no larger then:

A. Number 3 screen
B. Number 5 screen
C. Number 1 screen
D. No requirements

113. Which of the following would be least apt to carry the Cedar-Apple Rust:

A. Junipers
B. Apple trees
C. Apple tree cuttings
D. Fresh fruits apple fruits from a commercial packinghouse

114. Chestnuts grown in China and mailed in the original unopened container from Canada, should be:

A. Held for Secretary's permit
B. Refused admittance and destroyed or shipped out of state
C. Treated with methyl bromide and released
D. Inspected and released if inspection findings are negative

115. The Gypsy Moth remains in the egg stage:

A. Nine months of the year
B. Two months of the year
C. Four months of the year
D. Six months of the year

116. The most likely means of introduction of the Gypsy Moth would be in the:

A. Egg masses attached to outdoor furniture
B. Larvae stage on plants
C. Pupae stage in the soil
D. Adult stage on indoor decorative greens

117. Which one of the following would not be quarantined on account of Oak Wilt:

A. Chestnut tree
B. Chinquapin tree
C. Acorns
D. Tanbark oak tree

118. When writing a phytosanitary certificate you should make sure the commodity meets all of the requirements as listed on:

A. Letter of credit
B. Import permit
C. Letter from inspector
D. Letter from export broker

119. The controlling unit to see that the grower keeps all conditions of the post entry agreement is:

A. County Agricultural Commissioner
B. State Pest Exclusion
C. State Plant Pathologist
D. USDA

120. European corn borer over winter in which life stage?

A. Egg
B. Larvae
C. Pupae
D. Adult

121. Most interceptions are normally made of live European corn borer in the month of:

A. January
B. October
C. June
D. August

122. Most interceptions of European corn borer are made in which life stage?

A. Egg
B. Larvae
C. Pupae
D. Adult

123. European Corn Borer has a host range of:

A. Over 200 plants.
B. Sorghum.
C. Over 30 plants.
D. Sorghum, polygonum, and plants of the aster family.

124. Camelthorn would most likely be a contaminant of which crop seed:

A. Corn
B. Tomato
C. Alfalfa
D. Artichoke

125. Which is prohibited from importation by California Food & Ag Code regulations:

A. European Ferret
B. Gerbil
C. Mongoose
D. Coatimundi

126. Halogeton (*Halogeton glomeratus*) has been found infesting which general area of California:

A. Northwestern coastal
B. Central Valley
C. Eastern desert
D. Southern coastal

127. Which of the following is prohibited entry into California under provisions of CCR 3254:

A. Cotton plants
B. Seed cotton
C. Cottonseed
D. Linters

128. A "standard density" bale of cotton will be compressed to over:

A. 13 lbs. density
B. 18 lbs. density
C. 22 lbs. density
D. 28 lbs. density

129. A "high density" (HD) bale of cotton will be compressed to over:

A. 13 lbs. density
B. 18 lbs. density
C. 22 lbs. density
D. 28 lbs. density

130. A shipment of standard density baled cotton should be:

A. Accompanied by Secretary's permit
B. Accompanied by USDA fumigation certificate
C. Inspected and released if inspection findings are negative
D. Rejected and shipped out of state

131. A load of cottonseed from the Pink Bollworm regulated area:

A. May enter by rail only
B. May not enter California
C. May enter when accompanied by an official certificate
D. May enter without restrictions if in new clean sacks

132. Which member of the Sturnidae family can be imported into California without a permit?

A. European starling
B. Hill mynah
C. Crested mynah
D. Common mynah

133. The Japanese beetle overwinter in:

A. All stages
B. Larvae stage
C. Pupae stage
D. Adult stage

134. The Colorado potato beetle is a native of:

A. France
B. South America
C. Germany
D. United States

135. The Sweet Potato Weevil is not known to attack:

A. Sweet Potato plants
B. Sweet Potato tubers
C. Morning Glory plants
D. Irish Potato tubers

136. The Japanese beetle feeds on:

A. Very few plants
B. Fruit only
C. More than 250 hosts
D. Roots only

137. The Sweet Potato Weevil overwinter in the:

A. Egg stage
B. Larvae stage
C. Pupae stage
D. All stages

138. The Colorado potato beetle over winter in:

A. All stages.
B. Larvae stage.
C. Pupae stage.
D. Adult stage.

139. The Cereal Leaf Beetle quarantine CCR 3277 does not restrict movement of one of the following:

A. Shelled corn
B. Barley
C. Wheat
D. Hay

140. What was the first plant quarantine to be established in California?

A. One on citrus for citrus pests
B. Grape Phylloxera quarantine
C. Cotton pests quarantine
D. European corn borer quarantine

141. Japanese Beetle is known to attack:

A. Members of at least three or more plant families
B. Certain plants of the *Solanum* genus only
C. Plants belonging to the genus *Vicia* only
D. *Ipomoeas* plants only

142. Piranha belongs to the class:

A. Mammalia
B. Osteiichthyes
C. Amphibia
D. Reptilia

143. Sweet Potato Weevil is known to attack:

A. Members of at least three or more plant families
B. Deciduous fruits only
C. Certain *Ipomoeas* plants only
D. Certain plants of the *Solanum* genus

144. Which of the following agencies is responsible for publishing the list of animals prohibited from importation into California?

A. U.S. Bureau of Sport Fisheries and Wildlife
B. California Department of Food and Agriculture
C. U.S. Public Health Service
D. California Department of Fish and Game

145. A shipment of plants from Maryland established in soil should be accompanied by a:

A. Federal "Shipping Point Inspection" certificate
B. Certificate signed by the county agent at point of origin
C. Certificate executed by an inspector of USDAAPHIS that the plants were grown, packed, and stored in an area free from Japanese beetle
D. Certificate signed by the state official that the plants were grown, packed, and stored in an area free from Japanese beetle

146. The Citrus Pests exterior quarantine names as its quarantined area:

A. All states east of the Rocky Mountains
B. All states in the U.S.
C. All states, districts, and territories of the U.S.
D. All states, districts, and territories of the U.S. except the State of Arizona

147. Phytosanitary certificates are issued as a:

A. Condition of entry into a foreign country
B. Condition of cleanliness required by California
C. Requirement of the U.S. Government
D. Guarantee to get the commodity into the foreign country

148. Phytosanitary certificates should not be issued for:

A. Canned fruit, vegetables, or products thereof
B. Prepared condiments
C. Coffee
D. All of the above

149. The greatest percentage of exotic pests enter California via:

A. Private vehicles
B. Airfreight
C. Trucks
D. Ships

150. Khapra Beetle does its damage in the:

A. All stages
B. Adult stage
C. Larvae stage
D. Pupae stage

151. Which one of the following states is not known to be infested with the Cereal Leaf Beetle?

A. Michigan
B. Colorado
C. Tennessee
D. Kansas

152. *Bufo marinus*, Marine Toad is prohibited in California. If found at a pet store who would be responsible for confiscating it:

A. County Agricultural Commissioner
B. County Agricultural Inspector
C. State Plant Quarantine Officer
D. Department of Fish and Game

153. The Red-Whiskered Bulbul feeds primarily on:

A. Citrus and soft fruits
B. Grain
C. Leafy vegetables
D. Eggs of other birds

154. Witchweed is commonly known as:

A. An Insect
B. A Fungus disease
C. A Nematode
D. A Parasite

155. Khapra Beetle overwinter in:

A. All stages.
B. The larvae stage.
C. The pupae stage.
D. The adult stage.

156. Which of the following commodities is most likely to carry Khapra Beetle?

A. Baled rags
B. Cotton lint
C. Fresh harvested grain
D. Used grain sacks

157. The inspection of the growing plants while under post entry is the responsibility of:

A. County Agricultural Commissioner
B. Pest Detection/Emergency Projects
C. State Plant Pathologist
D. USDA

158. Papaya fruit from Mexico is:

A. Prohibited
B. Subject to inspection only
C. Fumigated under USDA supervision
D. Admissible to East Coast ports only

159. Khapra Beetle has many unusual characteristics, one of which is:

A. Survival under water
B. Resisting all eradication attempts
C. Crawling through brick walls
D. Spreading great distances by natural flight

160. Which one of the following applies to Witchweed:

A. Native of the U.S.
B. Recently introduced into the U.S.
C. Attacks plants other than corn and related grasses.
D. Needs an alternative host in order to complete its life cycle.

161. Red Imported Fire Ant (RIFA) is which of the following:

A. Native insect
B. Imported from South America
C. Imported from Africa
D. Imported from the Mediterranean area

162. Florida restricts the movement of plants into their state because of:

A. Burrowing nematode
B. Giant African snail
C. Various virus diseases
D. Brown Garden Snail

163. Before the final approval of a feed mill is made, you should:

A. Check the mill operation for six hours to make sure everything is working properly
B. Hold a training meeting with mill personnel
C. Approve the mill if all equipment is in good condition
D. Send to the Sacramento Seed Laboratory, a sample of finished mill product for germination testing

164. Which of the following causes Spreading Decline?

A. Insect with a complete life cycle
B. A saprophytic disease
C. Endoparasitic nematode
D. Parasitic seed plant

165. Which of the following causes Quick Decline?

A. Burrowing nematode
B. Citrus Canker
C. Southern root rot
D. Tristeza

166. Burrowing Nematode attacks:

A. Citrus trees only
B. Avocado trees only
C. Deciduous trees only
D. Ornamental plants, citrus and avocado trees

167. Southern Cornstalk Borer belongs to the order:

A. Homoptera
B. Hymenoptera
C. Lepidoptera
D. Coleoptera

168. The Southern Cornstalk Borer and Southwestern Corn Borer overwinter as:

A. Adults in soil
B. Full-grown larvae in old corn stalks
C. Pupae in the soil
D. Egg masses on rocks, boards and debris

169. In order to establish and maintain agricultural inspection in a USPS Processing & Distribution Center (P&DC) (formerly known as a Sectional Center), the Plant Manager is required to furnish:

A. Help to open and rewrap packages
B. Tables or benches, lighting and other equipment for inspecting plant materials
C. Suitable space to perform the inspections
D. Not required to furnish anything

170. A commercial shipment of harvested Broomcorn from Arizona should be:

A. Inspected and released if found free from insects and diseases
B. Released after inspection reveals negative findings and shipment is covered by a Cornstalk Borers and Sugarcane borer quarantine certificate issued by the origin state
C. Certificate from the state or origin affirming that such produce is a product of said state wherein no European corn borer is known to exist
D. Certificate issued by the USDA, evidencing shipment free from European corn borer

171. Which one of the following would not be under quarantine for the Southwestern Corn Borer?

A. Corn on the cob
B. Corncobs
C. Corn stalks
D. Broomcorn

172. The Walnut Husk Fly overwinter in which of the following stages:

A. Egg
B. Larva
C. Pupa
D. Adult

173. Butternut Curculio is:

A. An insect
B. Fungus disease
C. Nematode
D. Mite

174. During inspection of host material the Black Walnut Curculio would be most apt to be found in?

A. Soil
B. Husk of the nut
C. Nut itself
D. Tender shoots

175. Black Walnut Curculio overwinters in what stage?

A. Egg
B. Larvae
C. Pupae
D. Adult

176. To find the name of the county in which a city is, in any state is located, it would be better to consult:

A. A road map
B. An atlas
C. A Postal Guide
D. The list of county commissioners

177. Primates: all genera of monkeys and apes must have a permit issued by one of the following in order to be imported into California:

A. Department of Fish and Game
B. Department of Food and Agriculture
C. Zoological garden
D. State Department of Public Health

178. You are inspecting plant material at a USPS Processing & Distribution Center (P&DC) and find a foreign parcel containing plant material. There is no evidence that the contents have been inspected and released by the USDA. You should:

A. Inspect and release if findings are negative
B. Hold and notify the Pest Exclusion Unit in Sacramento
C. Reject the shipment and return to shipper
D. Forward the package to the nearest USDA field office

179. In which of the following would a commissioner have possible need for hold notice action?

A. Any property found infested with a pest of common occurrence
B. Fields of grain infested with a "A" rated weed where there is a need to control the movement of the infested grain from the field
C. A shipment of plants is found in violation of the California Exterior Quarantine
D. All of the above

180. A laboratory desiring a continuing permit should make application by letter through their county agricultural commissioner to Pest Exclusion. The initial inspection for approval of the laboratory will be made by:

A. Representatives of the County Agricultural Commissioner, USDA, and Pest Exclusion.
B. Representatives of the County Agricultural Commissioner and USDA.
C. Representatives of the USDA and Pest Exclusion.
D. Representatives of the County Agricultural Commissioner and Pest Exclusion.

181. The following states are quarantined for Colorado potato beetle quarantine except:

A. Nevada
B. Texas
C. Florida
D. Colorado

182. Sugarcane gummosis is caused by?

A. Virus
B. Fungus
C. Insect
D. Bacterium

183. Gypsy moth overwinters in what stage:

A. Egg
B. Larva
C. Pupa
D. Adult

184. Which of the following is not exempt under the West Indian sugarcane root borer quarantine?

A. Sand
B. Privately owned indoor house plants
C. Seed
D. Carrots, if free from soil

185. Ozonium root rot is caused by a:

A. Virus
B. Bacteria
C. Nematode
D. Fungus

186. Which of the following weeds would be of concern during the inspection of fish a boat from Florida?

A. Witchweed
B. Hydrilla
C. Quackgrass
D. Elodea

187. Which of the following is an “A” rated weed?

A. Field bindweed
B. Canada thistle
C. Russian knapweed
D. Perennial snowthistle

188. Which of the following is a reason that an animal would be restricted under Section 671, Title 14 of the California Code of Regulations?

A. Welfare of the animal
B. Health concerns
C. Breeding regulations
D. Detriment to the flora and/or fauna

189. When entering from an area infested with red imported fire ant, which of the following articles would not require certification?

A. Soil
B. Houseplants frown in the house and not for sale
C. Grass sod
D. Plants with roots and soils

190. Mediterranean fruit fly attacks:

A. Citrus and pome fruits only
B. Citrus and mangos only
C. More than 200 fruit and vegetable crops
D. Only crops which are grown in the Mediterranean region

191. Plum curculio is most likely to be introduced at what stage?

A. Adult
B. Pupa
C. Egg
D. All stages

192. Which of the following is most descriptive of Chrysanthemum White Rust Interior Quarantine?

A. Several Southern California Counties
B. The Sierra Nevada area
C. Several Monterey Bay area counties
D. Most of the Sacramento Valley

193. Ozonium Root Rot?

A. Louisiana
B. Colorado
C. Arkansas
D. Texas

194. Nut Tree Casebearers overwinter in which life stage?

A. Egg
B. Larva
C. Pupa
D. Adult

195. Which of the following commodities is not restricted by the Nut Tree Pest Exterior Quarantine?

A. Pecan trees
B. Walnut trees
C. Walnut budwood
D. Pecan nuts

196. Cereal Leaf Beetle has how many generations per year?

A. One
B. Two
C. Four
D. Variable, depending on the weather

197. Red Suture is a disease of?

A. Apple trees
B. Peach trees
C. Strawberry plants
D. Citrus

198. *Anastrpha ludens* is the scientific name of?

A. Mediterranean Fruit Fly
B. Mexican Fruit Fly
C. Oriental Fruit Fly
D. Melon Fruit Fly

199. Hydrilla is a(n)

A. Aquatic weed
B. Fungal disease
C. Insect pest
D. Nematode

200. The following commodities are covered by the Federal Domestic Pink Bollworm quarantine, except:

A. Cotton seed
B. Hollyhock
C. Okra
D. Kenaf

201. European Pine Shoot Moth has how many generations per year?

A. One
B. Two
C. Four
D. Variable, depending on the weather Section