Texas Citrus Nursery Stock Certification Manual

TEXAS DEPARTMENT OF AGRICULTURE

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http://www.TexasAgriculture.gov

AGRICULTURE AND CONSUMER PROTECTION DIVISION

Environmental and Biosecurity Programs

Citrus Program

A. General

I. Overview

A. **Purpose**. This manual is intended to facilitate compliance with requirements and restrictions in Title 4 Chapter 21Citrus of the Texas Administrative Code that relate to the production and movement of citrus plants, with particular emphasis on requirements specific to the Citrus Zone. In particular it is intended for the following persons:

1. Persons who propagate, grow or move citrus nursery stock in or into the Citrus Zone, which consists of Brooks, Cameron, Hidalgo, Jim Hogg, Kenedy, Starr, Willacy, and Zapata counties. Requirements and restrictions in this manual apply to all citrus nursery stock propagated for the purpose of sale, commercial uses or noncommercial distribution within the Citrus Zone.

2. Persons outside of the Citrus Zone of Texas who operate a certified citrus greenhouse for production of citrus nursery stock not intended for movement into the Citrus Zone.

B. **Goal**. The goal of this manual is to provide a convenient means for accessing TDA regulatory requirements. This is done to enhance protection of Texas' commercial citrus fruit industry, citrus nursery industry, and dooryard citrus from citrus greening (also known as *Huanglongbing*, *HLB, or yellow dragon disease*) as well as other pests and diseases, including many that are not currently found in Texas.

C. **Scope**. The manual includes startup and operation al procedures, requirements and restrictions having to do with commercial and noncommercial production and growing facilities, foundation groves and increase blocks related to citrus nursery stock in or for movement into the Citrus Zone. The manual's coverage includes certified citrus nurseries outside of the citrus zone. Citrus nursery stock covered by this manual is required to be grown in a certified facility until it is moved directly to a grove for immediate planting; or moved to a physically separate, exclusively retail area at the location; or moved from the production location. This manual does not cover facilities only involved in the retail sale of citrus plants that were produced and moved according to TDA regulations.

D. **Authority (see §21.43).** The department publishes this manual as a guide to regulations in Chapter 21 (see Rule §21.43).

E. **Availability.** The latest version of this manual is available on the department's website at: www.TexasAgriculture.gov. A printed copy of the manual is available upon request from the department's Valley Regional Office, 900-B East Expressway 83, San Juan, Texas 78588, (956) 787-8866 or 1-800-TELL-TDA.

II. Scope of the Citrus Nursery Stock Certification Program

A. The Citrus Nursery Stock Certification Program (the Program) applies to all citrus nursery stock propagated for sale or distribution within or into the Citrus Zone, excluding stock at facilities only involved in the retail sale of citrus plants that were produced and moved in compliance with Program requirements.

B. Citrus nursery stock covered under the Program is required to be grown in a certified facility until:

1. moved directly to a grove for immediate planting; or
2. moved to a physically separate, exclusively retail area at the location; or
3. moved from the production location.

III. Citrus Greening Quarantine

A. Any citrus nursery stock, orange jasmine or other article that is a regulated article under the department's Citrus Greening Quarantine (4 TAC 19 Subchapter X) and that is intended for movement, distribution or sale inside, into or out of a quarantined area is subject to the department's Citrus Greening Quarantine.

B. For a complete list of articles that are regulated under TDA's Citrus Greening Quarantine, see Appendix Subsection X of this manual.

C. For information about what areas in Texas are quarantined under TDA's Citrus Greening Quarantine, see Appendix Subsection W of this manual.

D. For information about symptoms of citrus greening, see Appendix VIII of this manual.

B. Certified Citrus Nursery Facilities

I. Structure Requirements

A. Any facility for plants involved in the propagation and growing of citrus nursery stock must be totally enclosed, with all doors, temperature regulation systems, blowers, door and vent closure mechanisms, sides, tops, other parts, other hardware, and joints built, maintained and operated to standards sufficient to exclude insects. The facility should comply with the requirements for interstate movement from Citrus Greening (CG) Quarantined Areas to All U.S. States, as specified in the "Interstate Movement of Citrus and Other Rutaceous Plants for Planting from Areas Quarantined for Citrus Canker, Citrus Greening, or Asian Citrus Psyllid" as published by the United States Department of Agriculture, Animal and Plant Health Inspection Service, Plant Protection and Quarantine; a link to the current version of that document can be found at: http://www.aphis.usda.gov/plant_health/plant_pest_info/citrus/. The specific structural requirements include the following.

1. Exterior walls and top. Any combination of solid surfaces and screening may be used, as long as the structure excludes insects.




2. Doors and doorways.

a. All doorways shall have a positive pressure air curtain, positive pressure double doors, or other mechanisms sufficient to prevent the entrance of any insects, both during operation of the door and while the door is closed.



b. All doors shall fit against the floor and door frame, so that no insect can enter.

3. Other openings. Except for doors, all exterior openings for cooling pads, fans, vents or other parts of a structure to be operated under a certificate of registration must be covered with screening.

4. Screen mesh size. The mesh size for any screening used in walls, doors, vent covers, or other parts of a structure to be operated under a certificate of registration shall not exceed 0.3 square millimeters (e.g., 0.547 x 0.547 mm or 0.5 x 0.6 mm).

II. Citrus Nursery Certification

A. Any person who propagates citrus nursery stock for the purpose of commercial or noncommercial use within the citrus zone must hold a current certificate for a certified citrus nursery. Any person who propagates citrus nursery stock for the purpose of sale within the citrus zone must also hold a current nursery/floral license, in accordance with Chapter 22 (relating to Nursery Products and Floral Items), which can be accessed online at http://tinyurl.com/pk424a8 .

B. **Application process**.

1. An application for citrus nursery certification and a schedule of registration fees can be obtained from the department's website at: www.TexasAgriculture.gov.

2. An applicant should submit a completed application form and application fee according to directions on the form.

3. **Application fee**. See Chapter L Fees of this manual.

C. **Certification fee**. See Chapter L Fees of this manual.

D. **Public display of certificate for a certified citrus nursery.** The current certified citrus nursery certificate shall be kept on display at the certified citrus nursery in a location where it is readily visible to the public.

E. **Changes in a production certified greenhouse**.

1. Before a facility covered under a certificate for a certified citrus nursery is modified in a way that, either during or after the modification, affects the walls, screening, doors or insect-exclusionary ventilation, the certificate holder must either:

a. enter into a compliance agreement with the department, outlining safeguarding conditions to maintain the facility insect free; or

b. remove all regulated materials from the facility and irrevocably surrender the certificate to the department.

2. If the size of the facility changes, the nursery shall submit an application indicating the change. Once an applicant has met certification requirements, an annual certification fee must be remitted to the department.

III. Sanitation Requirements

A. All articles, equipment, plant material, supplies and personnel that enter or remain in a propagation facility shall be subject to sanitation requirements approved by the department.

B. Personnel.

1. Nursery employees who work with citrus produced outside of the approved structure shall not return to work within the approved structure until the following day.

2. Prior to entering the nursery everyone must decontaminate with an approved personal decontamination product and wear a clean garment that should be provided by the nursery. If gloves are worn, they must be disposable gloves or decontaminated each day and kept on site.

3. All persons entering an approved structure or soil storage area shall walk through a sanitizing foot bath containing a decontaminant that is approved by the Department such as copper sulfate.

C. Equipment.

1. All equipment entering or leaving the nursery must be clean of all plant material, soil and decontaminated in accordance with department procedures using approved decontamination products.

2. Budding knives, clippers and other cutting implements shall be sterilized between different groups of propagations. Procedure:

i. To minimize the mechanical spread of disease-causing organisms between budwood source trees, a solution of a 20% household bleach (sodium hypochlorite), by volume, shall be used to sterilize tools.

ii. Sterilizing solution shall be made up fresh each day.

iii. Dip clippers, knives or pruning tools in the bleach solution for a few seconds.

iv. Other materials and methods of sterilization have been found ineffective with hard-to-kill plant viruses.

v. DO NOT use alcohol or open flame as a virus killer.

vi. Note: Research has shown that viroids can frequently be spread from infected plants to healthy plants on clippers, budding knives, and other mechanical equipment used in pruning and budding. Exocortis is a viroid disease detrimental to certain rootstock/scion combinations. Rootstock especially susceptible are Poncirus trifoliata, most citranges (Carrizo & Troyer), some citrumelos (Swingle not severely affected), Rangpur lime, and sweet lime.

3. All equipment, if possible, should be kept on site.

D. Materials.

1. All soil, peat, sawdust, mulch, manure or other plant-growing or potting media entering the approved site for the production of citrus nursery stock must be free of pests or pathogens of citrus.

2. All pots, cans, or other containers used to produce commercial citrus nursery stock must be stored in such a manner to prevent contact with the ground or contamination by flooding, rain-soil-splatter or ground water runoff.

3. Growing containers and benches shall be cleaned and decontaminated between crops of citrus nursery stock.

4. Non-certified citrus nursery stock cannot be grown in or introduced into the same greenhouse or structure with certified citrus nursery stock.

5. Any citrus nursery stock or budwood source tree found infected or exposed to plant pest or disease infestation shall be immediately treated or removed from the certified citrus greenhouse.

6. If a citrus nursery site is found to be infested with citrus infesting nematodes or other dangerous soil-borne citrus pathogens, the citrus nursery stock, plant material, media and containers for growing citrus nursery stock:

a. Must be kept at least 18 inches above the floor; and

b. Must be prevented from having contact with soil from the location, unless the soil and infested water from the location have been sterilized, handled and stored in a manner approved by the department.

E. The nursery site.

1. Prevent encroachment at the nursery location of plants in the Rutaceous subfamilies Aurantioideae, Rutoideae, and Toddalioideae, plants and the use of non-certified material, which would endanger the nursery site of becoming infested with injurious pests or diseases of citrus.

2. Follow established sanitation procedures to prevent nematode, Diaprepes, psyllid, aphid or other common plant pest infestation of the nursery site.

3. Nursery areas and perimeter shall remain weed free.

F. Special Requirements for a Foundation Grove.

1. At a minimum, the following measures shall be taken to prevent disease contamination from internal or external sources.

a. If one or more foundation block trees become infected with a disease listed in Appendix VII (Quarantined Pests and Diseases) or a vector of such disease, the affected tree(s) must be removed immediately.

b. Tools and equipment used to cut or prune foundation block trees shall be used only in the foundation block and shall be disinfected before use on any other tree, unless:

i. it is impractical to restrict equipment use only to the foundation block; and

ii. such equipment has been treated with an antimicrobial pesticide labeled to control citrus graft transmitted pathogens and/or guidelines prescribed by the department.

c. Irrigation of the foundation block shall be performed in such a manner as to minimize the risk of transmission of diseases through the irrigation system.

IV. Rootstock

A. All rootstock seed planted for propagation must have undergone a thermal treatment or other treatment approved by the department to reduce the risk of citrus infesting pathogens, including Phytophthora.

B. All planting, growing and budding of rootstock or other propagative material, including seeds, shall be in a certified insect exclusionary facility.

C. Rootstock produced any way other than from seed:

1. shall have been taken from a tree tested within the previous year, using methods approved by the department, and found free of diseases found in Appendix VII Quarantined Pests and Diseases; and

2. the source tree shall have been maintained continuously in a facility with current certification.

V. Citrus Propagation Requirements

A. Citrus nursery stock grown or sold within, or sold into, the citrus zone must be grown in a certified citrus nursery under the provisions of this subchapter.

B. Citrus nursery stock sold within or into, the citrus zone must be propagated directly from certified budwood from source trees that are compliant with the provisions of §21.36 of this title (relating to Increase Trees and Increase Blocks).

C. Citrus nursery stock propagated for experimental use;

1. Shall be inspected and tested at a minimum once prior to 12 months post-budding and every 12 months thereafter for citrus tristeza and citrus greening or any other pest of regulatory concern;

a. The department will collect samples for testing according to the sampling plan in "Survey Protocol in Exclusionary Facilities for the Interstate Movement of Citrus and Other Rutaceous Plants for Planting from Areas Quarantined for Citrus Greening, Asian Citrus Psyllid, and Citrus Canker" developed by the CPHST Plant Epidemiology and Risk Analysis Laboratory of the Plant Protection and Quarantine branch of USDA-APHIS. This sampling plan is available at the department's website at www.TexasAgriculture.gov.

b. The cost of the laboratory analysis of the samples shall be borne by the owner of the citrus nursery or research entity.

2. Shall not be offered for sale; and

3. May not be commingled with certified citrus nursery stock intended for sale or any other citrus nursery stock.

D. All citrus nursery stock and propagative plants shall remain within the approved structure at all times or be moved under protective cover to exclude insects, until distributed for sale or use.

E. Citrus nursery stock may be moved directly from one approved structure into another approved structure, provided the plants are protected and covered with material designed to prevent exposure to psyllids at all times during transit as specified here:

1. Inside an enclosed solid-walled container. The mesh size for any screening used in walls, doors, vent covers, or other parts of the container shall not exceed 0.3 square millimeters (e.g., 0.547 x 0.547 mm or 0.5 x 0.6 mm). The container shall be kept closed at all times that it is outside of an certified insect exclusionary structure and shall be moved directly between the certified insect exclusionary structures.

F. Certified citrus nursery stock may not be commingled with non-certified citrus nursery stock or any other citrus plant material.

C. CITRUS NURSERY STOCK PROPAGATION IN AREAS OF TEXAS OUTSIDE THE CITRUS ZONE

I. Citrus Nursery Stock Propagation within Areas of Texas Outside of the Citrus Zone

A. Propagation of citrus in accordance with the citrus nursery stock facility certification requirements as defined in this manual and in Subchapter D of Chapter 21 (relating to Citrus Nursery Stock Certification Program) is not required for the following movement of citrus plants:

1. To a location outside of the citrus zone from a location outside the citrus zone and outside of a citrus greening quarantined area;

2. To a location within a citrus greening quarantined area from a location within the same quarantined area; or

3. To a location within a citrus greening quarantined area that is outside of the citrus zone from a location outside of the citrus zone and outside of a citrus greening quarantined area.

B. Movement of citrus plants to a location outside of the citrus zone from a location inside a citrus greening quarantined area that is also located outside of the citrus zone must be compliant with Subchapter D of Chapter 21 and USDA requirements. Citrus nursery plants must be either:

1. Propagated with certified citrus budwood;

2. Propagated in accordance with Rule §21.38 (relating to Recordkeeping Requirements); or

3. Propagated from noncommercial citrus varieties, as provided in Rule §21.39 (relating to Designated Commercial Fruit Production Varieties), and tested in accordance with the "Survey Protocol in Exclusionary Facilities for the Interstate Movement of Citrus and Other Rutaceous Plants for Planting from Areas Quarantined for Citrus Greening, Asian Citrus Psyllid, and Citrus Canker" developed by the CPHST Plant Epidemiology and Risk Analysis Laboratory of the Plant Protection and Quarantine branch of USDA-APHIS.

4. Citrus plants grown in counties or areas quarantined for citrus greening outside of the Citrus Zone are subject to the same treatment requirements as specified in Rule §19.622 (relating to Mandatory Treatment of Citrus Nursery Plants in the Citrus Zone).

II. Nursery Floral Requirements

A. Any person who produces citrus nursery stock for the purpose of sale or distribution must hold a valid nursery floral certificate, in accordance with Chapter 22 (relating to Nursery Products and Floral Items).

B. A nursery floral certificate application and a schedule of fees can be obtained from the department website at: www.TexasAgriculture.gov.

III. Sanitation Requirements

A. Sanitation requirements must be in accordance with Sanitation Requirements in Chapter B Section IV of this manual.

IV. Labeling

A. Citrus plants offered for sale or distribution shall be labeled in accordance with Labeling Requirements in Chapter H Section I of this manual.

B. Citrus plants that meet the designation of certified citrus nursery stock shall be labeled in accordance with Labeling Requirements in Chapter H of this manual.

V. Treatment Requirements

A. Citrus plants that meet the designation of certified citrus nursery stock shall be treated in accordance with Rule §19.622 (relating to Mandatory Treatment of Citrus Nursery Plants in the Citrus Zone).

VI. Movement of Citrus Plants into the Citrus Zone or Out of an Area Quarantined for Citrus Greening

A. Requirements for shipment of citrus plants from the areas of Texas outside the citrus zone into the citrus zone:

1. Citrus plants must be produced in a nursery that is certified by the department in accordance with Chapter 21 Subchapter D (relating to Citrus Nursery Stock Certification Program), meet all applicable requirements of Chapter 21 which provide that citrus nursery stock moved into the citrus zone must be propagated directly from certified citrus budwood, as well as all applicable requirements of Chapter 19, having to do with Quarantines and Noxious and Invasive Plants;

2. Citrus plants must be maintained free of Asian citrus psyllids and other quarantined pests and diseases;

3. Citrus plants must be transported from a certified citrus nursery directly into the citrus zone, according to requirements in this section;

4. Citrus plants must be treated as prescribed in the USDA Treatment Manual (USDA Treatment Manual, D301;76(b), Table 5-8-1).

a. Specifically, quarantined articles must be treated with an USDA-approved soil drench or in-ground granular systemic insecticide (an appropriately labeled formulation of dinotefuran or imidacloprid), followed by a foliar spray (an appropriately labeled formulation of bifenthrin, chlorpyrifos, deltamethrin, fenpropathrin, or imidacloprid/cyfluthrin) prior to shipment.

b. The mandatory soil drench or in-ground granular systemic insecticide treatment shall be applied to each regulated article either:

i. 20 - 40 days prior to movement of the article; or

ii. up to date of movement only if the article was previously treated 20 - 90 days prior.

c. The mandatory foliar spray shall be applied no more than 10 days prior to movement.

d. All treatments must be applied according to the EPA label, including, but not limited to, application directions, restricted entry interval (REI), preharvest interval (PHI) and Worker Protection Standards (WPS); and

e. Tag or label. Citrus plants must have attached to each article or to the container in which the article is planted, a waterproof tag or label clearly identifying in permanent lettering the application date of the soil drench or in-ground granular systemic insecticide mandated in this section as "TREATMENT DATE: MM/DD/YYYY." The date format may be provided in another format such as 01AUG2015 or AUG012015 that identifies the date of the required pre-shipment soil drench or soil incorporated treatment.

B. Requirements for shipment from a certified citrus nursery outside of the citrus zone to a certified or non-certified (retail) citrus nursery located inside the citrus zone:

1. The shipment shall be in sealed insect exclusionary containers; the containers shall not leave the originating certified citrus nursery until sealed; and

2. The shipment must be loaded at the originating certified citrus nursery in a manner that prevents introduction of psyllids or other pests. The shipping compartment shall be kept closed at all times, except when regulated articles are entering or exiting the compartment. After having been loaded into the vehicle, the shipment must be moved immediately and directly to the destination, without other stops except as necessitated by traffic, fuel or an emergency.

3. For the shipment from a certified citrus nursery outside the citrus zone to a location inside the citrus zone that is not a certified citrus nursery, the following shipping option is allowed:

a. The plants will be treated with a kaolin-based particle film coating and the coating has not been compromised by movement, weather, etc. Treatment must be made no more than 7 days prior to date of shipping.

b. Trees must be moved immediately and directly from the certified citrus nursery to the destination without stops, except as necessitated by such necessary considerations such as traffic, fuel, or an emergency.

C. Conditions for shipment of certified citrus nursery stock out of an area quarantined for citrus greening include:

D. All the conditions listed in this section; and,

E. All conditions required by USDA-APHIS Plant Protection and Quarantine for movement of plants that are regulated articles out of a citrus greening quarantined area.

D. FOUNDATION BLOCKS

I. Designation of a Foundation Block

A. Foundation block status will be considered upon written request to the department. The request must include:

1. A physical description of the proposed site, including location, size, and a map of the land to be used--a copy of the deed or lease to the property must be available upon request by the department;

2. A description of the environmental controls and security measures as outlined in subsection (b) of this section;

3. Identification of the certified laboratory available to perform tests to diagnose diseases listed in this section; and

4. The name and address of the person responsible for the overall operation of the foundation block.

B. A foundation block shall meet the following standards:

1. The soil must support good growth of commonly used citrus rootstock;

2. Adequate environmental controls shall be in place to prevent loss of the block due to adverse environmental conditions such as damaging heat, cold, or wind;

3. Adequate security shall be maintained to protect the budwood from contamination or theft; and

4. Plants must be kept exclusively in an approved structure at a certified citrus nursery as described in this manual and in Subchapter D of Chapter 21 (relating to Citrus Nursery Stock Certification Program).

C. Approved foundation blocks under the jurisdiction of the Texas A&M University Kingsville Citrus Center are designated as foundation blocks for the state of Texas to provide certified budwood for the production of certified citrus nursery stock and certified increase trees.

II. Establishment of a Foundation Block

A. The trees in a foundation block shall be established using:

1. Certified budwood or budwood from certified increase block that has been tested by a certified laboratory no more than 90 days prior to the date budwood is cut and found to be free of tristeza virus, citrus greening disease, exocortis viroid, cachexia

viroid, psorosis virus, citrus tatterleaf virus, concave gum, and any other pests of regulatory concern; or

2. Budwood imported directly from the California Citrus Clonal Protection Program, the Bureau of Citrus Budwood Registration of the Florida Department of Agriculture and Consumer Services or the USDA-ARS National Clonal Germplasm Repository for Citrus, when accompanied by documentation certifying that the budwood is free of the diseases listed in paragraph (1) of this subsection.

B. Budwood used to establish a foundation block shall originate from trees that exhibit desirable horticultural characteristics for the specified varieties:

1. in accordance with the Citrus Industry Volume I, edited by Reuther, Webber and Batchelor, published by the University of California Division of Agricultural Sciences in 1967;

2. that were developed since publication of The Citrus Industry in accordance with other recognized scientific reviewed publications containing variety release articles; or

3. as determined by review of specific variety information by the director of the Texas A&M University-Kingsville Citrus Center.

C. Each tree planted in a foundation block, shall be assigned a unique source tree identification number consisting of block abbreviation, variety abbreviation, block number, row number, and tree number. A sign, stake, tag or other permanent and waterproof marker shall be used to associate each tree with its unique number.

D. Foundation block trees shall be examined during first fruiting and annually thereafter by a panel of experts designated by the department to verify horticultural characteristics. Any tree not exhibiting desirable horticultural characteristics for the specified variety shall be immediately removed from use as a budwood source.

III. Establishment of a Foundation Block

A. Trees in a foundation block must be tested by a certified laboratory to verify that foundation block trees continue to be free of diseases listed Appendix VII of this manual (relating to Quarantined Pests and Diseases). A list of approved testing procedures and testing schedules will be made available to the foundation block manager by the department.

B. At a minimum, the following measures shall be taken to prevent disease contamination from internal or external sources.

1. If one or more foundation block trees become infected with a disease listed in Appendix VII (Quarantined Pests and Diseases) or a vector of such disease, the affected tree(s) must be removed immediately.

2. Tools and equipment used to cut or prune foundation block trees shall be used only in the foundation block and shall be disinfected before use on any other tree, unless:

a. it is impractical to restrict equipment use only to the foundation block; and

b. such equipment has been treated with an antimicrobial pesticide labeled to control citrus graft transmitted pathogens and/or guidelines prescribed by the department.

3. Irrigation of the foundation block shall be performed in such a manner as to minimize the risk of transmission of diseases through the irrigation system.

C. A foundation block must be completely contained in a certified citrus nursery in accordance with this manual and Subchapter D Chapter 21 (relating to Citrus Nursery Stock Certification Program).

IV. Maintaining Foundation Block Status

A. Trees in a foundation block must be tested by a certified laboratory to verify that foundation block trees continue to be free of diseases listed in §21.2 of this title (relating to Quarantine Pests and Diseases). A list of approved testing procedures and testing schedules will be made available to the foundation block manager by the department.

B. At a minimum, the following measures shall be taken to prevent disease contamination from internal or external sources.

1. If one or more foundation block trees become infected with a disease listed in §21.2 of this title, or a vector of such disease, the affected tree(s) must be removed immediately.

2. Tools and equipment used to cut or prune foundation block trees shall be used only in the foundation block and shall be disinfected before use on any other tree, unless:

a. it is impractical to restrict equipment use only to the foundation block; and

b. such equipment has been treated with an antimicrobial pesticide labeled to control citrus graft transmitted pathogens and/or guidelines prescribed by the department.

3. Irrigation of the foundation block shall be performed in such a manner as to minimize the risk of transmission of diseases through the irrigation system.

4. A foundation block must be completely contained in a certified citrus nursery in accordance with requirements in this manual relating to the Citrus Nursery Stock Certification Program.

V. Labeling and Handling of Budwood Produced in Foundation Block

A. At the time of sale, each budwood piece or bundle of certified budwood must be labeled to identify the variety of the budwood, number of buds, and source tree identification number, and safeguarded from exposure to the diseases listed in Appendix VI (Quarantined Pests and Diseases).

VI. Foundation Block and Certified Budwood Fees

A. See Chapter L Section II of this manual (having to do with Foundation Block and Certified Budwood Fees)

VII. Plan for Certified Budwood if Foundation Block is Unavailable

A. If no foundation block is able to provide an adequate supply of certified budwood, the department may:

1. Issue a permit to a nursery to import budwood, including into the citrus zone, from any state or from outside the Unites States, in accordance with Rule §21.40 (relating to Importing Out-of-State Budwood);

2. Issue a permit to a nursery to obtain budwood from increase trees maintained by certified citrus nurseries; or

3. Issue a permit to a nursery to implement alternative measures after consultation with a panel of experts appointed by the department.

E. Increase Trees and Increase Blocks

I. Increase Trees and Increase Blocks

A. Increase Tree Requirements. Increase trees or increase blocks shall meet all of the following requirements.

1. Budwood for propagating increase trees shall be obtained from a source tree.

2. Increase trees shall be propagated and grown in a certified citrus nursery as specified in this manual and in Subchapter D of Chapter 21 (relating to Citrus Nursery Stock Certification Program).

3. Increase trees shall be budded on nursery rootstock which has not been budded previously. If re-budding is necessary, buds from the same source as the original shall be used.

B. Increase Tree Structures. Increase trees must be held exclusively in an approved structure designated for increase trees or housed with other certified citrus nursery stock being grown in the approved structure, provided the two groups of plants are kept identifiably separate.

1. At no time shall any uncertified citrus nursery stock be inside the approved structure.

2. Increase trees may be grown in containers or planted in the ground.




3. Increase trees of different varieties and selections shall be kept distinctly apart and clearly identified to avoid the mixing of increase trees originating from different source trees.

C. Labeling of Increase Trees.

1. Each lot of increase trees produced from the same lot of budwood from a specific foundation block tree shall be labeled for traceability with a unique identification number. The permanent label or tag shall include the variety, source tree identification number, and the month and year of budding.

2. Each lot of increase trees must be of the same cultivar, originating from the same foundation block source tree(s) and budded in the same month and year.

3. An increase tree identification map shall be maintained on site. The map shall be made available during an inspection or upon request by the department. The map must include the location of each group of increase trees by selection in the approved structure, the name of the selection, the number of trees in each lot, source tree identification number, and the month and year of budding.

D. Duration of Use of Increase Trees. Increase trees of budwood to produce certified citrus may be used as a source of certified budwood to produce certified citrus nursery stock for a period not to exceed 48 consecutive months. The 48 month duration begins on the first day of the month following the month in which the trees were budded.

1. Within the citrus zone: Citrus trees propagated from budwood that originated from increase trees shall not serve as a future source of certified budwood.

2. Outside of the Citrus Zone: Increase trees of noncommercial citrus varieties as defined in Appendix VI of this manual and in §21.39 of Chapter 21 (relating to Designated Commercial Fruit Production Varieties) may be used as a source of budwood to produce certified citrus nursery stock provided the trees meet the requirements of this section.

E. Routine Inspection.

1. Testing and inspection of increase trees for pests and diseases. Increase trees shall be inspected and tested at a minimum of once prior to 12 months post-budding and at an interval not to exceed 12 months for citrus tristeza and citrus greening or any other pest of regulatory concern.

a. The department shall collect samples for testing according to the sampling plan, "Survey Protocol in Exclusionary Facilities for the Interstate Movement of Citrus and Other Rutaceous Plants for Planting from Areas Quarantined for Citrus Greening, Asian Citrus Psyllid, and Citrus Canker," developed by the CPHST Plant Epidemiology and Risk Analysis Laboratory of the Plant Protection and Quarantine branch of USDA-APHIS. This sampling plan is available at the department's website at: www.TexasAgriculture.gov.

b. The cost of the laboratory analysis of the samples shall be borne by the owner of the nursery. The department will inspect trees for citrus canker and other pests of regulatory concern during facility inspection.

2. The increase block must be routinely inspected and treated to prevent pests and diseases. The department may issue a seizure order if a pest or disease is found. If an Asian citrus psyllid or other disease vector is found, the contents of the structure are subject to a seizure order based on risk assessment. The department may consult with

a panel of experts for additional mitigation measures necessary to ensure the integrity of increase trees.

F. Disposition of increase trees. Upon discontinuing use of an increase tree, the increase tree must be removed from the increase block and may be sold, planted, or destroyed.

G. The department shall, as deemed appropriate, inspect the foundation grove, foundation grove records, increase block, and increase block records.

F. MONITORING FOR PESTS & DISEASES

I. Inspect your nursery for pests and diseases

A. Walk around or through each group of *regulated articles* or other *quarantined articles*, visually scanning for plants that look unhealthy or that show specific symptoms of pests or disease.

B. Look for symptoms typical of citrus greening. Symptoms (and the citrus greening bacteria) may be only in one branch or twig. Important symptoms or *HLB* include:

1. Asymmetrical yellow and green blotchy mottling of leaves, with blotches that do not cross the *midvein* of the leaf (a key characteristic to look for); or
2. Yellow shoots (One or more), or
3. Asymmetrical fruit.
4. **NOTE**: For more symptoms of citrus greening, see Appendix VIII Symptoms of Citrus Greening.

C. Visually scan for other common symptoms of disease:

1. Leaf spots or discolored or malformed foliage (may indicate a disease or may be produced by mites or sucking insects),
2. Powdery or sooty deposit on plant surface.
3. Unseasonal dropping of foliage,
4. Plant wilted or droopy (although well-irrigated),
5. Twig or stem dieback, or
6. Mushrooms, microbial fruiting structures or mycelia growing on the plant or its media. or
7. Plant death.

D. Examine some plants closely, observing common signs of insect or mite infestation:

1. Visible insects or mites,
2. Pale stippling on leaves (if present, look for mites or sucking insects),
3. Dark speckles of excrement on underside of leaves,
4. Cast nymphal skins on bottoms of leaves,
5. Webbing that isn't obviously part of a spider web,
6. Deformed stems or leaves,
7. Galls (hollow or basically solid), or
8. Sticky sugary residue (perhaps accompanied by *sooty mold*) on leaves and other plant parts.

G. LABELING REQUIREMENTS FOR CITRUS PLANTS

I. Statewide

A. "Produced in Texas" Label or Tag.

1. Each regulated article sold, distributed or transported within this state or grown for the purpose of sale or distribution shall have attached to the article, or to the container in which the article is planted, a waterproof tag or label upon which is legibly printed in permanent lettering the words "Produced in Texas" or "Produced in TX" and the Texas Nursery/Floral Registration Certificate number of the business location where the regulated article was produced for sale or distribution.

2. Exemptions.

a. *Commercial citrus*. Within the Texas citrus zone, commercial citrus production areas where trees are immediately field planted in groves and cultivated for commercial fruit production are exempt from the requirements of 4 TAC 21 Subchapter A Citrus Quarantines.

b. *Identification Plan*. In lieu of identification tags during production, a nursery may develop a regulated article identification plan, as approved by the department, that defines procedures and methods used to identify the regulated articles under production at the location. Identification tags, as provided in this section, will be required once the regulated articles are sold or distributed.

c. *Retail buyers and end users*. Retail buyers and end users are exempt from requirements for this label or tag.

II. Certified Citrus Nursery

A. Citrus plants being grown in a certified citrus nursery must be labeled, meeting the following labeling requirements.

1. A tag, sign or other identifier shall be placed at the beginning and end of each lot or row, as applicable, of certified citrus nursery trees during production which clearly identifies the variety and source tree identification number.

2. If a row contains trees propagated from more than one source tree, the different selections shall be clearly separated and identified at the beginning and end of each lot or series of trees showing the variety and source tree identification number.

3. If trees are grown in containers, each container or group of container-grown trees shall be identified with the variety and source tree identification number and separated from other trees in the nursery to avoid mixing nursery trees originating from different source trees.

4. In lieu of identification tags during production, a nursery may develop an identification plan, as approved by the department that defines procedures and methods used to identify the certified citrus nursery stock under production at the

location. Identification tags, as provided in this section, will be required once the certified citrus nursery stock is sold or distributed.

B. In addition to labeling requirements in Section I of this Chapter of this manual and in Rule §21.8 (relating to Labeling Requirements and Non-Rebuttable Presumption), each citrus plant offered for sale or distribution shall have attached to the article, or to the container in which the article is planted, a waterproof tag or label upon which is legibly printed in permanent lettering the words "Certified Citrus Nursery Stock," the date of propagation, the date the tree was last treated with a pesticide prior to distribution, and adequate identifying information to permit trace-back to the certified facility where the article was propagated and grown.

C. Exemptions.

1. Within the citrus zone, commercial citrus production areas where citrus trees that are immediately field planted in groves for commercial fruit production are exempt from the labeling requirements of this section.

2. Retail buyers and end users are exempt from the requirements of this section.

III. Citrus Greening Quarantined Areas

A. In addition to statewide requirements, any citrus nursery stock sold, moved or distributed into or within an area quarantined for citrus greening must have attached to the article or to the container of the article, a permanent and weatherproof tag or label in a clear and legible format no less than 14-point font bearing the exact words:

1. "PROHIBITED FOR MOVEMENT OUTSIDE OF QUARANTINED AREA Penalty for Violation, Texas Department of Agriculture: *TexasAgriculture.gov";* and

2. "TREATMENT DATE: MM/DD/YYYY." The date format may be provided in another format such as 01AUG2015 or AUG012015 that identifies the date of the required pre-shipment soil drench or soil incorporated treatment.

B. Citrus nursery stock that is not in or intended for movement into a citrus greening quarantined area shall not be labeled as described in “A” (above).

C. Citrus nursery stock propagated in a certified citrus nursery in accordance with Subchapter D of this chapter, is exempt from the labeling requirements in subsection (b) of this section when the citrus nursery stock:

D. is sold, moved or distributed to another certified citrus nursery; or

E. is intended for planting for commercial fruit production.

IV. Budwood

A. At the time of sale, each budwood piece or bundle of certified budwood must be labeled to identify the variety of the budwood, number of buds, and source tree identification number, and safeguarded from exposure to the diseases listed in Appendix VI Quarantined Pests and Diseases.

H. PESTICIDE TREATMENTS

I. General.

A. Citrus nursery stock propagated in a certified citrus nursery that is sold, distributed, or moved from a certified citrus nursery shall be treated as specified in Chapter 19 Subchapter X Citrus Greening Quarantine Rule §19.622 (relating to Mandatory Treatment of Citrus Nursery Plants in the Citrus Zone).

I. RECORD KEEPING

I. Movement of Quarantined Articles

A. Legible and complete records sufficient to document compliance with all requirements regarding movement into Texas, into the Citrus Zone, within Texas, or with respect to quarantine restrictions, of quarantined articles (including citrus nursery stock and plants that are quarantined articles, budwood and seed; see Rule §21.6) shall be kept, maintained, accessible, and made available for inspection during normal business hours by TDA or USDA for a time period no less than two years, including any specific recordkeeping requirements specified below:

II. Required Record Keeping for Citrus Plants Intended for Sale, Distribution or Transportation

A. *Required record keeping data* for regulated articles shall include the following:

1. the identifying number of each *lot* of the *regulated articles*;

2. the name, address, and telephone number of the *producer* of the regulated articles;

3. *if in transit*, the *name*, *address*, and *telephone number* of the person to whom the *regulated articles* are to be delivered;

4. the *genus* or widely recognized *common name* of the *regulated article(s)* and

5. the number of individual *regulated articles* distributed or transported.

6. An invoice, receipt, or other document(s) containing the required record keeping data must accompany each shipment of *regulated articles*.

7. ***NOTE****:*

   a. Record keeping requirements apply both to commercial buyers, sellers, leasers, and lessees of *regulated articles*.

   b. *Retail buyers* of *regulated articles* are not covered by record keeping requirements

8. Record keeping requirements for **sellers/distributors** of regulated articles.

   a. A seller/distributor of regulated articles shall provide a copy of the document or documents required for shipments to each person, other than a retail buyer, receiving all or a portion of a lot of *regulated articles*.

   b. The seller/distributor is not required to provide record keeping documents to *retail buyers* of *regulated articles*.

   c. The *seller* shall maintain copies of the required documentation for at least **two (2) years** following sale or other distribution of the *regulated articles*.

9. Record keeping requirements for **buyers** of regulated articles.

a. A person, other than a retail buyer, shall not accept a distribution of *regulated articles* from any person unless accompanied by the required documentation.

b. The *buyer/recipient* shall maintain copies of the required documentation for at least **two (2) years** following sale or other distribution of the *regulated article*.

c. A person required to maintain records under these requirements shall, upon written request of the department, deliver copies of the records by mail, facsimile, commercial carrier, hand-delivery, or other means during normal business hours.

d. Copies of recordkeeping documents are not required to be maintained by the end user (grower or homeowner).

III. Certified Citrus Nursery Recordkeeping Requirements

A. The following records of certified budwood **purchases** must be maintained by a certified citrus nursery for a minimum of **four (4) years**:

1. Name and nursery floral certificate number of budwood producer/seller;
2. Date of each purchase; and
3. Variety name and number of buds purchased, per source tree, including identification number of each source tree.

B. The following records of certified citrus nursery stock **sales or distribution** must be maintained by a certified citrus nursery for a minimum of **four years**:

1. Date of sale or distribution;
2. Name, address, and (if applicable) nursery floral registration certificate number of receiver; and
3. Number of trees sold or distributed, per variety name and budwood source tree identification number.

C. Recordkeeping for mandatory treatments. For each mandatory treatment applied pursuant to Rule §19.622 (relating to Mandatory Treatment of Citrus Nursery Plants in the Citrus Zone), records shall be maintained by the nursery for **four (4) years** following the last treatment date for a given lot of regulated articles. Required records for each mandatory treatment shall include, but are not limited to:

1. The lot numbers of plants treated;
2. The pesticides applied, including application dates;
3. EPA registration number of each product used;
4. Application rate and method of treatment; and
5. Name of applicator).

D. Recordkeeping for required labeling and for movement of quarantined articles into the citrus zone. Legible and complete records sufficient to document compliance with labeling requirements shall be kept, maintained, accessible, and made available for inspection during normal business hours for a time period no less than **four (4) years**.

E. Documentation of negative results of tests of rootstock seed and rootstock shall be maintained for at least four years following distribution of all plants propagated from the source tree and shall be available for inspection during normal hours of operation.

F. The nursery shall make available all required records to the department upon request for inspection.

IV. Budwood Recordkeeping

A. The original propagation record identifying the source tree of budwood must be maintained as required in Rule 4 TAC 21.9 (relating to Record keeping; Rebuttable Presumption; and Seizure) and made available to the department upon request to verify the tree was produced in Texas.

B.

1. The following records of certified budwood purchases and certified citrus nursery stock sales must be maintained for a minimum of four years on forms promulgated by the department at nurseries that purchase certified budwood:

    a. Specific records of each purchase including:

        i. date of purchase;

        ii. variety(ies) purchased; and

        iii. number of buds purchased from each source tree;

    b. Number of certified citrus nursery stock successfully budded from each budwood variety purchased;

    c. Location of certified citrus nursery trees, until the trees are planted or sold; and

    d. Records of sales of certified citrus nursery trees.

2. Sellers of certified citrus trees must maintain records to adequately verify the origin or source of such trees.

V. Foundation Block Recordkeeping

A. The following records of foundation block operations must be maintained for a minimum of four years at the foundation block and made available for inspection by the department.

1. A map of trees showing block and row numbers and locations of each variety;

2. Results of tests conducted by a certified laboratory verifying that all foundation block trees are free of tristeza virus, citrus greening disease, exocortis viroid, cachexia viroid, psorosis virus, citrus tatterleaf virus, concave gum, and any other diseases of regulatory concern [see Rule §21.31(a)(1) (relating to Establishment of a Foundation Block)]; and

3. Records of budwood sources used to establish foundation block trees along with certificates and/or test results obtained to verify that the budwood was free of tristeza

virus, citrus greening disease, exocortis viroid, cachexia viroid, psorosis virus, citrus tatterleaf virus, concave gum, and any other diseases of regulatory concern [see Rule §21.31(a)(1) (relating to Establishment of a Foundation Block)].

B. The following records of certified budwood sales or distribution must be on forms prescribed by the department, and maintained at the foundation block:

1. Origin of budwood sold, by source tree lot number;
2. Number of buds sold daily, summarized by month; and
3. Records of each sale, including:
   a. name, address and nursery floral registration certificate number of buyer, if applicable;
   b. number of buds of each variety sold to each buyer;
   c. source tree lot number for each variety;
   d. date of sale; and
   e. name, address, and nursery floral registration number of foundation block.

C. The following records of increase block trees must be maintained for a minimum of four years at the nursery location and made available for inspection by the department:

1. A map of increase trees showing block and row numbers and locations of each variety;
2. Results of tests conducted by a certified laboratory on the increase trees for citrus greening and tristeza;
3. Records identifying the budwood and rootstock sources used to establish increase trees;
4. The month and year of initial budding of each increase tree by tree identification number and variety;
5. The number of buds taken per month from each lot of each variety of increase tree; and
6. Records of disposition of increase trees.

D. Records of certified budwood sales shall be provided to the department with payment of budwood fees, as required by §21.34 of this title (relating to Foundation Block and Certified Budwood Fees), must include:

1. Origin of budwood sold by increase tree identification number;
2. Number of buds sold or cut daily, summarized by month; and
3. Records of each sale, including:
   a. name, address and the department nursery floral registration certificate number of buyer if applicable;
   b. number of buds of each variety sold to each buyer;

c. source tree lot number for each variety; and

d. date of sale.

J. MOVEMENT OF QUARANTINED ARTICLES

I. General

A. The term "quarantined article" refers to different articles in different regulations. In Chapter 21 Citrus regulations and in this manual (except where context clearly may indicate otherwise), the term refers to all articles defined as quarantined articles in Chapter N (Appendix), Subchapter V (Definitions) of this manual.

B. The following are exempt from requirements in Chapter 21, Subchapter A, Citrus Quarantines:

1. Commercial citrus fruit, and

2. Citrus seed that has been treated as prescribed in the USDA Treatment Manual to prevent pest transmission.

II. Movement into Texas

A. **Citrus Nursery Stock and other Quarantined Articles**. All areas outside of Texas are quarantined with respect to quarantined articles, and except as described in B (Budwood) and C (Food Items) below, Citrus Nursery Stock and other Quarantined Articles shall not be transported into Texas from other states.

B. Budwood of citrus varieties not existing in, or not available as certified budwood in Texas may be shipped into Texas, including into the citrus zone, from any state or from outside the United States provided the following conditions are met before the citrus budwood is allowed to enter Texas:

1. The budwood shall be tested no more than 90 days prior to shipping to Texas using methods and facilities approved by the department. Such tests must produce negative results for all quarantined pests and diseases (see Appendix VI). Documentation of negative results of these tests must be included with the shipment;

2. The budwood shall be assigned by the department to a federal or state agency approved by the department for the purpose of conducting confirmation tests to determine if the budwood is free from all known viruses and infectious diseases before it is released to the buyer;

3. A permit from the department shall be issued for all budwood from other states or countries, and together with a copy of the certificate required by paragraphs (5) and (6) of this section, shall be attached to the shipment;

4. Before any citrus budwood will be allowed to enter Texas from an area under a federal quarantine related to citrus or from outside the continental United States, it must meet the requirements of the United States Department of Agriculture (USDA), Animal and Plant Health Inspection Service (APHIS), Plant Protection and Quarantine. Such clearance certificate shall be approved by the department before the entrance of the budwood shipment into Texas; and

5. In addition to the requirements outlined in paragraphs (1), (2), and (3) of this section, shipments originating in a state other than Texas must be accompanied by a certificate from the origin state's department of agriculture specifying that the budwood is free of pests and diseases listed in §21.2 of this title. A copy of the certificate shall be sent to the department for approval and subsequent issuance of a permit before the shipment will be allowed into Texas.

6. Budwood originating from the California Citrus Clonal Protection Program (CCCPP), the Florida Department of Agriculture and Consumer Services (FDACS) Bureau of Citrus Budwood Registration, or the USDA-ARS National Clonal Germplasm Repository for Citrus and Dates (USDA-ARS-NCGR) are exempt from the requirements in paragraphs (1) and (2) of this section, but must be accompanied by a certificate from the CCCPP, FDACS, or the USDA-ARS-NCGR specifying that the budwood is free of pests and diseases listed in §21.2 of this title.

III. Movement from Texas

A. Movement of quarantined articles, citrus seed and citrus fruit from Texas and from or between citrus greening quarantined areas within Texas is regulated by the USDA. For more information call USDA-APHIS-PPQ at 512-916-5241.

IV. Movement into the Citrus Zone

A. Quarantined articles from areas of Texas outside of the citrus zone shall not be transported into the citrus zone except:

1. if approved by the department under the conditions of a compliance agreement or special permit issued by the department for research, for testing of official regulatory samples, or for use in the production of parasites, predators or pathogens of a quarantined pest or other purpose deemed necessary by the department; or

2. if the citrus nursery tree is propagated, treated and transported in accordance with Section VI of Chapter C of this manual and Rule §21.84 (relating to Movement of Citrus Plants into the citrus zone or Out of an Area Quarantined for Citrus Greening).

K. Fees

I. Citrus Nursery Certification Fees

A. An application for citrus nursery certification and a schedule of registration fees can be obtained from the department's website at: www.TexasAgriculture.gov.

B. An applicant should submit a completed application form and application fee according to directions on the form.

C. **Application fee.** An application fee will be charged on the basis of **$100** for facilities with an enclosed insect exclusionary area of up to 25,000 square feet, plus **$50** for each additional 25,000 square feet or fraction thereof. In case reinspection is necessary, a fee equal to the application fee will be charged.

D. **Certification fee.** An annual certification fee will be charged on the basis of **$575** for facilities with an enclosed insect exclusionary area of up to 25,000 square feet, plus **$175** for each additional 25,000 square feet or fraction thereof. The department may require additional fees as needed, to comply with statutory requirements for cost recovery. Applicants or certified citrus nurseries will be notified of any additional fees 30 days prior to a fee due date.

1. Payment of certification fee.

   a. Payment of the fee for renewal of a certificate for a certified citrus nursery is late if the fee has not been received by the department by the due date.

   b. If payment of a certification fee is 30 or more days late, all citrus nursery stock at the location may be subject to a stop-sale order until full payment has been received.

E. **Changes in a production greenhouse.** If the size of the facility changes, the nursery shall submit an application indicating the change. Once an applicant has met certification requirements, an annual certification fee must be remitted to the department.

II. Foundation Block and Certified Budwood Fees

A. An applicant for a foundation block shall pay a non-refundable application fee of **$500** to the department.

B. Any person that sells certified citrus budwood shall pay to the department a fee of **$0.06** for each bud sold.

C. Certified budwood fees shall be paid to the department by the 15th day of the month following the end of each calendar quarter for budwood sold during the previous calendar quarter and accompanied by budwood sale records as required in Chapter I Section V of this manual and in Rule §21.38(d) (relating to Recordkeeping Requirements).

III. Increase Tree Fees

A. Increase tree application fee. Application for designation of increase trees shall be made on a form prescribed by the department and available on the department's website at: TexasAgriculture.gov.

1. No application or certification fees shall be required if:

   a. Increase trees are to be held in an insect exclusionary structure that is certified by the department; or

   b. The total area of the new structure where increase trees are to be held, plus the area of the approved structures at the facility is at or below the 25,000 square footage increment threshold for fee increase.

2. Application and certification fees shall be required if the total area of the new structure, plus the area of the approved structures at the facility exceeds the threshold limit.

3. Amount and payment of application fees shall be according to Chapter K Section I of this manual and to Rule §21.62 (relating to Citrus Nursery Certification).

IV. Nursery Floral Certificate Fee

A. A nursery floral certificate application and a schedule of fees can be obtained from the department website at: www.TexasAgriculture.gov.

L. STATE CERTIFIED CLEAN STOCK PROGRAM

I. Purpose and Scope of Program

A. For the purpose of meeting the United States Department of Agriculture (USDA), Animal and Plant Health Inspection Service (APHIS), Plant Protection and Quarantine (PPQ) requirements for movement of citrus plants out of an area quarantined for citrus greening by USDA and the department, and for interstate movement in accordance to USDA requirements, the Texas State Certified Clean Stock Program in Texas, consists of:

1. All citrus plants that have been propagated in accordance with subchapter D of this chapter (relating to the Nursery Stock Certification Program), or in a structure that meets the requirements of USDA-APHIS for interstate movement from an area quarantined for citrus greening; and

2. Propagated with certified budwood from a recognized and approved budwood source;

3. Propagated from budwood that originated from a certified increase tree;

4. Propagated in a continuous progression of certified trees from generation to generation wherein that the original trees were propagated using certified budwood and all progeny propagated and/or used as a source of budwood are identified in a manner to clearly trace the original source of budwood, the year the original budwood was purchased and labeled in accordance to §21.36(j) of this title (relating to Increase Trees and Increase Blocks); or

5. For noncommercial varieties for which certified budwood is not available and which are not to be moved into the Citrus Zone, budwood source trees must have been tested for citrus tristeza, citrus greening or any other pest of regulatory concern within 12 months prior to use for budwood. Nursery stock resulting from the budwood of these varieties shall be sampled and tested according to the USDA-APHIS Plant Protection and Quarantine requirements for movement of citrus plants out of a quarantined area. The department will inspect trees for citrus canker and other pests of regulatory concern during facility inspection.

B. Samples will be collected by the department for testing according to the sampling plan, "Survey Protocol in Exclusionary Facilities for the Interstate Movement of Citrus and Other Rutaceous Plants for Planting from Areas Quarantined for Citrus Greening, Asian Citrus Psyllid, and Citrus Canker," developed by the CPHST Plant Epidemiology and Risk Analysis Laboratory of the Plant Protection and Quarantine branch of USDA-APHIS. The cost of the laboratory analysis of the samples shall be borne by the owner of the citrus nursery.

M. Appendix

I. Contact TDA

Texas Department of Agriculture
Mail: P.O. Box 12847, Austin, TX 78711
Street: Stephen F. Austin Bldg., 1700 North Congress Ave., Austin, TX 78711
Main Contact Number: 1(800) 835-5832
Website: http://www.TexasAgriculture.gov

Plant Quality Program
Mail: Attn. Plant Quality Program, P.O. Box 12847, Austin, TX 78711
Street: Stephen F. Austin Bldg., 1700 North Congress Ave, Austin, TX 78701
Email: PlantQuality@TexasAgriculture.gov
Phone (800) 835-5832 (toll free), (512) 463-7660
Fax (888) 215-5385

Region 1: West Texas Regional Office
4502 Englewood Ave., Lubbock, TX 79414
Phone: (806) 799-8555
Fax: (800) 831-3746

Region 2: North Texas Regional Office
1720 Regal Row, Suite 118, Dallas, TX 75235
Phone (214) 631-0265
Fax: (888) 205-6335

Region 3: Gulf Coast Regional Office
Elias Ramirez State Office Building, 5425 Polk Street, Suite G-20, Houston, TX 77023
Phone (713) 921-8200
Fax (888) 223-5606

Region 4: South Central Texas Regional Office
8918 Tesoro Dr., Suite 120, San Antonio, TX 78217
Phone (210) 820-0288
Fax (888) 203-1235

Region 5: Valley Regional Office
900-B E. Expressway 83, San Juan, TX 78589
Phone (956) 787-8866
Fax (800) 909-8167

II. Legal Authority of Citrus Regulations

A. The statutory basis for regulations covered or referred to in this manual is found in the following chapters of the *Texas Agriculture Code* (the *Code*):

1. Chapter 19 Citrus Budwood and Citrus Nursery Stock Certification Programs (Title 2),

2. Chapter 71 General Control (Title 5) and

3. Chapter 73 Citrus Diseases and Pests (Title 5).

B. Relevant specific statutes include the following:

1. *The Code §19.0031*, which defines the Citrus Zone of Texas; and

2. *The Code §19.004*, which establishes the Citrus Budwood Certification Program; and

3. *The Code §19.0041*, which establishes the Citrus Nursery Stock Certification Program; and

4. *The Code §19.006*, which directs the department to adopt standards and rules relating to *the Code Chapter 19*; and

5. *The Code §19.007*, which relates to certification standards; and

6. *The Code §19.008*, which treats applying for foundation grove designation, budwood certification, and citrus nursery certification; and

7. *The Code §19.009*, which has to do with revocation of foundation grove designation, citrus budwood certification and citrus nursery certification; and

8. *The Code §19.010*, which has to do with fees; and

9. *The Code §19.011*, which empowers the department to asses an administrative penalty under *the Code Chapter 19*; and

10. *The Code §19.014*, which has to do with revocation of foundation grove designation, citrus budwood certification and citrus nursery certification; and

11. *The Code §71.009*, which provides *TDA* with the authority to adopt rules as necessary for the seizure, treatment, and destruction of plants, plant products, and other substances for the effective enforcement and administration of Chapter 71; and

12. *The Code §71.0091*, which establishes the Citrus Nursery Stock Certification Program, and

13. *The Code §71.010*, which provides for the appeal process to be followed for violation cases of these rules; and

14. *The Code §73.002*, which provides for the state to use all constitutional measures to protect the citrus industry from destruction by pests and diseases.

C. The regulatory basis for this manual is found in the following chapters of the *Texas Administrative Code (TAC)*:

1. Title 4, Chapter 19. Quarantines, Texas Administrative Code (4 TAC 19)

2. Title 4, Chapter 21. Citrus, Subchapter A, Texas Administrative Code (4 TAC 21A)

3. Title 4, Chapter 22. Nursery Products and Floral Items (4 TAC 22)

III. *Risk-Based* Scheduling of Inspections

A. *Risk-Based* Inspections of Nurseries

1. Frequency of inspection of nurseries by TDA is scheduled based on *risk*.

2. **The greatest risk** is posed by *propagative nurseries* because almost all *quarantined articles* available at *retail nurseries* originate at *propagative nurseries*.

3. **The second-greatest risk** is represented by *complaints*. Although *CHRP complaints* may not be frequent, scheduling of *Complaint inspections* is a *high priority* because *complaints* address identified problems that are causing public concern and because *TDA policy* is to handle *complaints* promptly.

4. **The third-greatest risk** is found in nurseries with a history of noncompliance; until such locations demonstrate that they will not be an ongoing source of problems, scheduling of inspections at such locations takes a *risk-based* priority over locations with an unblemished record over the previous 5-years.

5. **The lowest risk** comes is represented by retail nurseries with an established track record of compliance with regulations.

6. **Risk arising from a nursery being in or near an area quarantined for citrus greening** is overlaid on top of the other risk factors; that overlaid risk is compounded if *Asian citrus psyllid* (*ACP*) is present.

IV. Safety Recommendations

A. Inspection Site Safety.

1. To prevent exposure of TDA personnel to pesticides or other agricultural chemicals, before entering any field, greenhouse or other areas to examine plants, a TDA inspector may ask you whether any *pesticides* or *dangerous chemicals* had been used within the last 30 days. Provide this information, adding whether a *post-treatment restricted entry period* is in effect for any area that has received a pesticide application. If so:

    a. Be prepared to provide a copy of the pesticide label of the product applied, along with the following information:

        i. What places and materials are affected,

        ii. What materials were used and at what rate, and

        iii. If personal protective equipment is required to enter treated areas.

2. *Point out to the inspector* any signs that chemicals have been applied (e.g., chemical residues on leaves, loose granules scattered around, etc.). Volunteer what the residues/granules are and (if they are a pesticide) when they were applied.

3. Inform the inspector whether any *physical concerns* (construction, movement of vehicles, equipment, electrical wiring, etc.) might present a hazard the inspector should be aware of.

4. Inform the inspector of moving equipment, chemical residues on plants or other surfaces, uneven surfaces, or other hazardous condition may exist.

5. An inspector may not enter *any* area that appears unsafe.

B. **When personnel are working with chemicals**:

1. Use all the personal protective equipment (PPE) as required by the pesticide label of the product you are using. If not a pesticide, eye protection and gloves are recommended..

2. Check label precautions to determine any special concerns, protective clothing, or procedures.

3. If you get bleach or other chemical in an eye:

a. *Immediately* flood the affected eye with copious quantities of clean water for a minimum of 15 minutes. Continue eye wash until you receive medical advice or are confident the chemical is washed out.

b. Immediately consult a doctor for further advice.

c. Immediately notify your *Lead Inspector.*

4. If you get bleach or other chemicals on your skin, etc., remove any contaminated clothing and thoroughly wash the area with soap and water.

5. Do not use bleach or other chemicals except in areas with good ventilation.

6. When not in use, store any chemical in securely closed, clearly labeled container.

7. Do not mix bleach (or any other chemical) with other chemicals, except according to an accepted procedure. Some chemical reactions may be explosive or produce toxic gas or other dangerous products.

8. In case of a chemical spill or other safety problem, contact your safety officer.

C. **Reacting to an emergency**.

1. If you become injured or may have come into contact with any pesticides or other hazardous chemicals:

a. *Immediately* take all necessary steps to decontaminate yourself, stop any bleeding, etc., and

b. Immediately seek appropriate medical attention if you suffer ANY adverse reactions or if you think you think such reactions may develop.

c. Ask someone to drive you to medical attention, if that is practical, rather than driving yourself. If unable, or unsafe to drive, call 911 for medical transport.

i. Verbalize to that person what chemical you were exposed to or situation you were involved in, and any signs or symptoms you may be experiencing..

ii. Inform the person accompanying you or medical authorities you may speak to of any drugs, allergies, etc. that should not be administered to you.

d. If exposed to a pesticide or chemical, bring the label of the product to provide to medical authorities if at all possible.

e. If needed, call 911 for emergency medical assistance. If you are alone, give your location to the person on the phone.

V. Definitions

A. 4 TAC 19---Title 4 Chapter 19 Quarantines of the Texas Administrative Code.

B. 4 TAC 21--Title 4 Chapter 21 Citrus of the Texas Administrative Code.

C. **Asian citrus psyllid**—the insect *Diaphorina citri* Kuwayama, in any stage of development, the vector of citrus greening in the United States.

D. **Budwood**-- A portion of a stem or branch with vegetative buds used in propagation for budding or grafting; or more generally, any citrus cell, tissue, callus or cutting, except rootstock, intended for use in the vegetative propagation of a citrus plant.

E. **California Citrus Clonal Protection Program**-- A program established by the California Department of Food and Agriculture and operated within the University of California system to provide a source of disease-free budwood to the citrus industry.

F. **Certified budwood or certified citrus budwood**-- Budwood produced either in a foundation block or an increase block in accordance with requirements in Chapter 21.

G. **Certified citrus nursery**-- A citrus nursery enclosed in an insect exclusionary structure approved by the department and meeting the requirements of Subchapter D of Chapter 21 (relating to Citrus Nursery Stock Certification Program).

H. **Certified laboratory**-- A laboratory accredited to perform disease diagnostics by the National Plant Protection and Laboratory Accreditation Program of the USDA-APHIS Plant Protection and Quarantine.

I. **Certified citrus nursery facility**-- A certified citrus nursery containing one or multiple approved insect exclusionary structures at one location.

J. **Certified citrus nursery stock**—Citrus plants to be used in a commercial or noncommercial setting.

K. **Citrus or citrus plant or citrus tree**-- Any plant in genus *Citrus, Eremocitrus, Microcitrus, Poncirus, or Fortunella,* including any hybrid, grafted or other plant having parentage in any of those genera; also, *Murraya exotica* and *Murraya paniculata* (orange jasmine, orange jessamine or limonaria).

L. **Citrus grower**—A citrus producer growing and producing citrus nursery stock for commercial or retail marketing purposes.

M. **Citrus identification plan**-- A department approved plan for the identification and tracking of citrus plants produced for the purpose of sale or distribution.

N. **Citrus nursery-**--- A producer of citrus trees propagated through the budding or grafting of citrus trees using certified citrus budwood.

O. **Citrus nursery stock-**-- Citrus plants to be used in a commercial or noncommercial setting.

P. **Code**--The Texas Agriculture Code.

Q. **Commercial citrus fruit**--Citrus fruit that has been cleaned and processed in a commercial facility according to normal packinghouse procedures.

R. **Citrus Zone**— For the purposes of this manual, the following counties are considered the citrus zone within Texas: Brooks, Cameron, Hidalgo, Jim Hogg, Kenedy, Starr, Willacy, and Zapata.

S. **Commercial citrus fruit**--Citrus fruit that has been cleaned and processed in a commercial facility according to normal packinghouse procedures.

T. **CPHST**--Center for Plant Health Science and Technology.

U. **Department**--The Texas Department of Agriculture.

V. **Distribute**-- To supply, sell, deliver, lease, provide, or otherwise transfer possession or ownership of a regulated or quarantined article.`

W. **Foundation block**-- A functional unit, regulated by the department, consisting of one or more citrus trees that meet the requirements for foundation block trees in Subchapter C of this chapter (relating to Foundation Block, Increase Block and the Production of Certified Budwood).

X. **Increase block** -- A functional unit, certified and regulated by the department, consisting of one or more trees propagated using certified budwood from foundation block trees to rapidly multiply propagative material, that is grown in accordance with Subchapter C of this chapter (relating to Foundation Block, Increase Block, and the Production of Certified Budwood).

Y. **Lot**-- A group of trees of one or assorted cultivars that are kept together, tagged, or labeled for identification purposes and held separated from other trees.

Z. **Non-rebuttable presumption**-- A presumption that cannot be challenged with evidence.

AA. **Produce**-- To propagate a plant by any sexual or asexual means, including but not limited to by seed, rooted cutting, budding, grafting or tissue culture.

BB. **Propagative material**-- Any plant or part of a plant, including seed, or plant tissue intended for use in the propagation of citrus nursery stock or other plant that is identified as a quarantined article in §21.5 of this title (relating to Quarantined Articles).

CC. **Quarantined area**—a defined area that, under a given quarantine, is subject to restrictions and requirements designed to restrict or combat the quarantined pest.

DD. **Quarantined articles**--include the quarantined pests; any living or non-living rootstock, leaf, root, stem, limb, twig, fruit, seed, seedling or other part of any plant in the botanical family Rutaceae, subfamily Aurantioideae (including the genera *Aegle, Aeglopsis, Afraegle, Atalantia, Balsamocitrus, Bergera, Burkillanthus, Calodendrum, Choisya,* X *Citrofortunella, Citropsis, Citrus, Clausena, Clymenia, Eremocitrus, Feronia, Feroniella, Fortunella, Glycosmis, Hesperethusa, Limnocitrus, Limonia, Luvunga, Merope, Merrillia,* X

Microcitronella, Microcitrus, Micromelum, Monanthocitrus, Murraya, Naringi, Oxanthera, Pamburus, Paramignya, Pleiospermium, Poncirus, Severinia, Swinglea, Tetradium, Toddalia, Triphasia, Vepris, Wenzelia and *Zanthoxylum,* and any hybrid thereof); and any article carrying or capable of carrying the plant pests or diseases. Exceptions: Any article that would be covered under this definition, but that is intended only for consumption as food, is not a quarantined article with respect to ; if the article:

1. has been desiccated and ground, chopped or otherwise finely divided; or

2. consists of one or more detached leaves that prior to entering Texas have been treated in accordance with:

    a. The United States Department of Agriculture Animal and Plant Inspection Service (APHIS) treatment schedule T101-n-2 (methyl bromide fumigation treatment for external feeding insects on fresh herbs) at the times and rates specified in the treatment manual and safeguarded until export. This information can be found on page 5-2-28 of the treatment manual, located online at: http://www.aphis.usda.gov/import_export/plants/manuals/ports /downloads/treatment_pdf/05_02_t100schedules.pdf; or

    b. the irradiation requirement in 7 Code of Federal Regulations (CFR) Part 305.

EE. **Quarantined pest**—a dangerous insect or disease that is restricted or combatted under the requirements and restrictions of a given quarantine.

FF. **Rebuttable presumption**-- A disputable presumption or a presumption which may be challenged with evidence.

GG. **Regulated article**-- Any citrus plant grown for the purpose of sale or distribution.

HH. **Retail buyer**-- A person who receives a regulated article other than for the purpose of resale.

II. **Rootstock**-- A plant or plant part produced for use as the recipient understock in budding or grafting.

JJ. **Seize or Seizure**-- To take official control of a regulated or quarantined article either determined to have been transported or carried from a quarantined area in violation of a quarantine or determined to be infected with a disease or insect pest, at any stage of development, dangerous to a citrus plant, citrus plant product, or citrus substance, without regard to whether the citrus plant, citrus plant product, or citrus substance comes from an area known to be infested.

KK. **Source tree**-- A citrus tree propagated in a foundation block or increase block as a source of budwood or other propagative material.

LL. **Transport**-- Carry, move, or transfer by motor vehicle, boat or other conveyance licensed or otherwise authorized for use on a road, highway or waterway of the United States or an individual state.

MM. **USDA-APHIS**--United States Department of Agriculture, Animal and Plant Health Inspection Service.

NN. **Vegetative propagation**-- Any type of propagation that does not include sexual recombination, including but not limited to budding, cell culture, grafting, rooted cuttings, and air-layering.

VI. Designated Commercial Fruit Production Varieties

A. **Commercial Fruit Production Varieties**. For purposes of this manual, the following citrus tree varieties are designated as Commercial Fruit Production Varieties.

1. Grapefruits--"Rio Red;"
2. Valencia oranges--"Standard," "Olinda;"
3. Navel oranges--"N-33;" and
4. Other oranges--"Marrs;" "Pineapple."

B. **Noncommercial Citrus Varieties**. Citrus tree varieties not listed in subsection (A) of this section are designated as Noncommercial Citrus Varieties.

VII. Quarantined Pests and Diseases

Table 1. Quarantined Pests (under Chapter 21)	
Common Name	**Scientific Name**
African Psyllid	*Trioza erytreae*
Asian grey weevil	*Myllocerus undatus*
Avocado whitefly	*Trialeurodes floridensis*
Branch and twig borer	*Melalgus confertus*
Brown citrus aphid	*Toxoptera citricida*
Caribbean black scale	*Saissetia neglecta*
Citrus bud mite	*Eriophyes sheldoni*
Citrus grey mite	*Calacarus citrifolii*
Citrus root weevil	*Pachnaeus litus*
Citrus snow scale	*Unaspis citri*
Citrus thrips	*Scirtothrips citri*
Diaprepes root weevil	*Diaprepes abbreviatus*
False codling moth	*Thaumatotibia leucotreta*
Inconspicuous whitefly	*Bemesia inconspicua*
Orange sawyer	*Elaphidion inerne*
Orange spiny whitefly	*Aleurocanthus spiniferous*
Oystershell scale	*Lepidosaphes ulmi*
Plumeria whitefly	*Paraleurodes perseae*
Rufous scale	*Selenaspidus articulatus*
Six-spotted mite	*Eotetranychus sexmaculatus*

Yuma spider mite	*Eotetranychus yumensis*

Table 2. Quarantined Diseases (Under Chapter 21)	
Common Name	**Causal Organism**
Citrus Black Spot	Fungus (*Guignardia citricapra)*
Citrus Blight	Unknown
Citrus Canker	Bacterium (*Xanthomonas axonopodis*)
Citrus Greening (also called Huanglongbing, HLB, or Yellow Dragon Disease)	Bacterium (*Candidatus* Liberibacter *africanus*, or *Candidatus* Liberibacter *americanus,* or *Candidatus* Liberibacter *asiaticus*)
Citrus Leprosis	Citrus Leprosis Virus (CiLV)
Citrus Psorosis (Scaly Bark)	Citrus Psorosis Virus (CPsV) (genus *Ophiovirus*)
Citrus Scab	Fungus (*Elsinoe fawcetti*)
Citrus Tristeza	Citrus Tristeza Virus (CTV) (genus Closterovirus)
Citrus Variegated Chlorosis (CVC)	Bacterium (*Xylella fastidiosa*)
Stubborn Disease of Citrus	Mycoplasmalike pathogen (*Spiroplasma citri*)
Sweet Orange Scab	Fungus (*Elsinoe australis*)

VIII. Symptoms of Citrus Greening (AKA: Huanglongbing or HLB).

A. A plant newly infected with citrus greening will show no symptoms for several months or longer, depending on many factors. To further complicate the matter, symptoms of citrus greening are extremely variable, often being very similar to symptoms of nutritional deficiencies or other problems. Even so, the following symptoms commonly are evident and may help you identifying plants that need laboratory testing to confirm presence of the disease.

1. Yellow shoots.
2. Foliage symptoms.

   a. Yellowing of leaves. Yellowing along midrib and larger veins, spreading to produce a blotchy, mottled appearance (either green islands on a yellow background or yellow patched on dark green background (both advanced stages) or light green patches on a dark green background early stages)).

i. Yellowing of leaves may not show until after a yellow shoot develops.

b. On upper surface of leaves, lateral veins are raised (only look at lateral veins; don't look at midvein for this characteristic).

c. Thickening of leaves.

d. Leaves with corky veins (an advanced symptom) or chlorosis.

e. Leaves small, sparse, upright ("rabbit-like" appearance: similar to nutritional deficiency symptoms).

3. Symptoms of *HLB* vs. symptoms of nutritional deficiency.

a. Leaves with symptoms like *Zinc* deficiency, including green veins with chlorotic interveinal areas.

i. If symptoms suggesting Zinc deficiency are seen, inspect the leaves of the previous flush for blotchy mottle symptoms of HLB.

b. Different from nutrition-related symptoms, mottling of leaves usually crosses leaf veins (vs. occurring between or along leaf veins).

c. The changes usually are confined to one limb or sector of the tree, with the rest of the tree appearing normal; however, if infected at an early age, the yellowing may spread to the entire tree.

4. Fruit symptoms (more diagnostic visual symptoms, but not as good for recovery of pathogens):

a. Fruit on symptomatic twigs usually are lopsided, with a curved *columella* (the persistent, central axis of the fruit).

b. Fruit smaller than normal.

c. Shaded side remains green.

d. Normal coloring develops on unshaded side.

e. Fruit with a somewhat salty, bitter taste (unsalable); in contrast, fruit with similar symptoms caused by other citrus diseases usually are sweeter than normal.

f. Seeds generally aborted.

g. Fruit drop is heavy.

5. Other symptoms:

a. Twig dieback (in severe cases)

b. Heavy leaf abscission and fruit drop, followed by out of season flushing and bloom, can occur on infected trees and branches.

c. Young (1-2 year old) trees may die from the infection.

d. If *African* citrus psyllid is present, *pit galls* are found on leaves (currently Texas has the *Asian* citrus psyllid (ACP)). If *pit galls* on leaves are seen, contact TDA immediately.

IX. Citrus Greening Quarantined Areas in Texas

A. An interactive map that allows a person to determine whether they are in an area currently quarantined for citrus greening, along with a brief description of all areas in Texas that currently are quarantined for citrus greening can be found online on the department's website http://tinyurl.com/buguos6.

X. Regulated Articles Under Citrus Greening Quarantine

A. A regulated article under TDA's Citrus Greening Quarantine (4 TAC 19 Subchapter X) is any article described as a regulated article by Title 7, Code of Federal Regulations (CFR) §301.76-2.

B. The following are regulated articles under Title 7, Code of Federal Regulations (CFR) §301.76-2 (current as of September 23, 2015):

1. All plants and plant parts (including leaves), except fruit, of: *Aegle marmelos, Aeglopsis chevalieri, Afraegle gabonensis, A. paniculata, Amyris madrensis, Atalantia* spp. (including *Atalantia monophylla*), *Balsamocitrus dawei, Bergera* (=*Murraya*) *koenigii, Calodendrum capense, Choisya ternate, C. arizonica*, X *Citroncirus webberi, Citropsis articulata, Citropsis gilletiana, Citrus madurensis* (= X *Citrofortunella microcarpa*), *Citrus* spp., *Clausena anisum-olens, C. excavata, C. indica, C. lansium, Eremocitrus glauca, Eremocitrus* hybrid, *Esenbeckia berlandieri, Fortunella* spp., *Limonia acidissima, Merrillia caloxylon, Microcitrus australasica, M. australis, M. papuana, X Microcitronella spp., Murraya spp., Naringi crenulata, Pamburus missionis, Poncirus trifoliata, Severinia buxifolia, Swinglea glutinosa, Tetradium ruticarpum, Toddalia asiatica, Triphasia trifolia, Vepris (=Toddalia) lanceolata*, and *Zanthoxylum fagara*.

2. Propagative seed of the species listed in paragraph (1) of this section is considered a host of citrus greening but not a host of Asian citrus psyllid. Therefore, notwithstanding the other provisions of this subpart, the movement of propagative seed of these species from an area quarantined for citrus greening is prohibited, while the movement of such seed from an area quarantined only for Asian citrus psyllid, but not for citrus greening, is allowed without restriction.

3. Any other product, article, or means of conveyance may be designated a regulated article for Asian citrus psyllid or citrus greening, if an inspector determines that it presents a risk of spreading these pests, and after the inspector provides written notification to the person in possession of the product, article, or means of conveyance that it is subject to the restrictions of this subpart.

4. Plant parts of the species listed in paragraph (1) of this section may be exempted from the regulations in this subpart, provided that the parts have been processed such that an inspector determines they no longer present a risk of spreading Asian citrus psyllid or citrus greening.