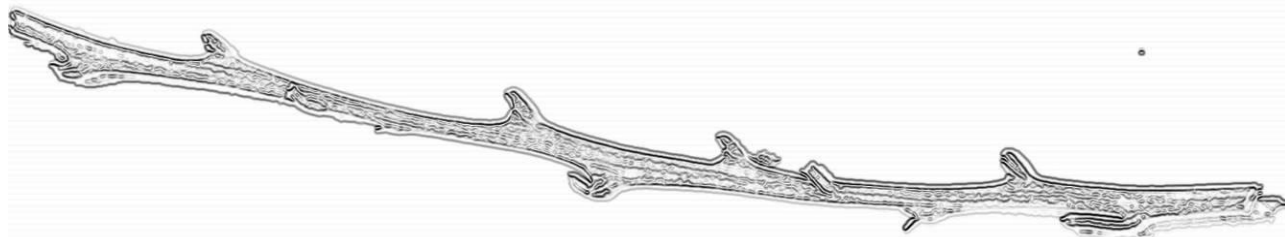


# DPI Division of Plant Industry

FLORIDA DEPARTMENT OF AGRICULTURE & CONSUMER SERVICES



## Citrus Nursery Stock Certification Manual

Procedure Manual Revised 2/14/2013

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# 1

## Introduction

This Procedure Manual explains the policy and procedures of the Citrus Nursery Stock Certification Program that are established in State Rule Chapter 5B-62, F.A.C. for the regulation of citrus nursery stock. The original policies of the Citrus Budwood Protection Program were worked out by the budwood committee of the Florida State Horticultural Society and Division of Plant Industry officials. Latest revisions to policy as specified in rule 5B-62, F.A.C. were established by a committee of nurserymen, growers, DPI regulators, and state and federal scientists.

### **The Citrus Budwood Technical Advisory Committee provides oversight to the Citrus Nursery Stock Certification Program.**

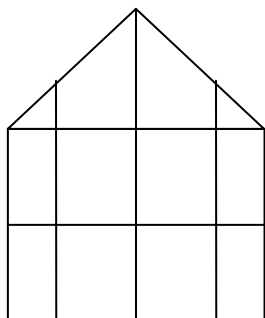
The policies in Rule 5B-62 govern citrus nursery regulations and the operation of the program. The purposes, methods and many of the procedures guiding the program are specified by this document.

This manual is written to help nurserymen and growers understand the workings of the budwood program. These are the written procedures that the Division of Plant Industry, Plant Protection Specialists and Environmental Specialists follow in performing their budwood inspections. The actual Rule Chapter 5B-62, F.A.C. should be read by anyone requiring additional information. The budwood office will be glad to answer questions regarding these procedures and Rule Chapter 5B-62, F.A.C.

IMPORTANT PHONE NUMBERS		Bureau Web site:
Budwood Office	863-298-3041	www.freshfromflorida.com/pi/budwood/index.html
Budwood Office FAX	863-298-3050	
Mailing Address		Rule Chapter 5B-62, F.A.C.  (Can be accessed from web site)
Bureau of Citrus Budwood Registration 3027 Lake Alfred Road (HWY 17) Winter Haven, FL 33881-1438		

### **NURSERY REQUIREMENTS NOT HANDLED BY THE BUDWOOD BUREAU**

<b>Bureau of Plant and Apiary Inspection</b>	
Call this number to locate your area Plant Inspector 352-395-4704	
<b>Mailing Address</b>	<b>Citrus Nursery Inspection</b>  <b>863-298-3038</b>
Division of Plant Industry Bureau of Plant and Apiary Inspection P.O. Box 147100 Gainesville, FL 32614-7100	



# Start

***Important:***

**These regulations apply to all citrus propagation including own use, commercial and/or dooryard production.**

***Prior to  
Nursery Start  
Up:***

**All Citrus Nurseries Must Register with the Division of Plant Industry, Bureau of Plant Inspection.**

An inspector with the Bureau of Plant and Apiary Inspection will be assigned to each citrus nursery. The inspector will be responsible for all nursery inspections and certifications in his assigned area or district. Each citrus nursery must be registered and receive a registration number that is assigned by the Bureau of Plant and Apiary Inspection. This nursery registration number is a different number than the Participant Number assigned by the budwood office for the Budwood Protection Program. A Certificate of Nursery Registration is issued and a registration fee is assessed annually based on nursery inventory.

***Prior to  
Nursery Start  
Up:***

**All Commercial Citrus Nurseries Must be Tested for Nematodes Prior To Planting.**  
**(Dooryard citrus nurseries are exempt from nematode testing)**



Nematode requirements are covered in Rule Chapter 5B-62, F.A.C.  
Please contact the Bureau of Plant and Apiary Inspection for Nematode Site Approval.  
Call 352-395-4704 to locate your area Plant Inspector.

***Prior to  
Nursery Start  
Up:***

**All Citrus Nursery Sites Must Be Approved Prior To Establishment**

**All New Citrus Nursery Sites Must Be At Least One Mile Away From Any Commercial Citrus Plantings.**

**Call (863) 298-3038 or for site approval**

Citrus Nursery Sites	
<ol style="list-style-type: none"> <li>1. Newly established citrus nursery sites must be a minimum of one mile away from commercial citrus. <ol style="list-style-type: none"> <li>a. Citrus nursery sites must be devoid of field citrus trees and citrus relatives for a distance of 100' from all greenhouse structures.</li> <li>b. Seed source trees cannot be planted within 100' of approved greenhouse structures. Existing field seed source trees can be kept within 100' of a nursery site, provided they are not infested with citrus canker or citrus greening and are treated to control Asian citrus psyllid.</li> </ol> </li> <li>2. Existing and new citrus nursery sites must be fenced and gated with a controlled entryway point. <ol style="list-style-type: none"> <li>a. Double fencing would be preferred with a cleared buffer between fence areas. <ol style="list-style-type: none"> <li>i. The outer gate should remain closed and locked during non-working hours.</li> <li>ii. The inter gate should remain closed and secured at all times.</li> </ol> </li> <li>b. Fence design should deter people from driving or walking unimpeded on to the approved site <ol style="list-style-type: none"> <li>i. Chain link fence should be a minimum height of 4 foot.</li> <li>ii. Barb wire fences should be a minimum height of 4 foot.</li> </ol> </li> <li>c. A secondary gate for access to a burn pile or emergency exit is permissible but decontamination would have to be provided for reentry.</li> <li>d. A one-way drive that incorporates one entry gate and a separate exit gate is also permitted.</li> <li>e. Decontamination stations must be provided at the point of entry for vehicles, equipment and persons. <ol style="list-style-type: none"> <li>i. The design of the nursery should have all fences and gates positioned so as to funnel all foot and vehicle traffic to a controllable entry. <ol style="list-style-type: none"> <li>1. A controllable entry is one that will not allow unauthorized persons or vehicles onto the property and insure all workers or authorized visitors properly decontaminate.</li> </ol> </li> </ol> </li> <li>f. A separate smaller walkthrough entry that incorporates a personnel decontamination spray station is required. <ol style="list-style-type: none"> <li>i. It is suggested that the sides of the walkthrough be shielded from the wind, thereby providing a more direct application of the decontaminating spray.</li> </ol> </li> </ol> </li> <li>3. It is strongly recommended that windbreaks of sufficient height and density be maintained for deterring wind-blown rain. <ol style="list-style-type: none"> <li>a. Windbreaks are strongly recommended. <ol style="list-style-type: none"> <li>i. Under certain circumstances having a windbreak may help having a quarantine removed if risk evaluation warrants it.</li> </ol> </li> <li>b. Check with IFAS for plant recommendation and spacing recommendations.</li> </ol> </li> <li>4. Inspection of nursery sites and surrounding areas will occur on a regular basis. <ol style="list-style-type: none"> <li>a. Rutaceous hosts (citrus &amp; citrus relatives) will be inspected for ½ mile around the site.</li> <li>b. The nursery will be inspected for structural integrity and sanitation.</li> <li>c. Trees will be inspected for the presence insects and diseases</li> <li>d. Budwood Program compliance (BCR's), chemical application records, and visitor logs will be monitored during these inspections.</li> </ol> </li> </ol>	<p><b>1 Mile separation from commercial citrus</b></p>  <p>All citrus nursery sites must be fenced with limited access</p>  <p>Decontamination</p> <p><b>Windbreaks</b></p> <p><b>Inspections</b></p>
Greenhouses must be inspected for program compliance before any citrus is grown	
<b>Prior to Nursery Start Up:</b>	<p><b>All Citrus Nursery Structures Must be Approved Prior To Planting.</b></p> <p><b>(Call 352-395-4704 for structure approval)</b></p>
<b>Important</b>	<p><b>All Citrus Nursery Stock including seedlings, trees and budwood must be grown in enclosed greenhouses separated from field citrus trees.</b></p>

## Nursery Structures

5. All propagation structures shall be enclosed with a covering to exclude insects. This includes all budwood sources, nursery trees and seedling production.

- a. Nursery stock must be grown in insect-proof structures with double entryways that incorporate positive pressure.
  - a. This structure cannot be opened at anytime except through the entryway consisting of a double set of doors utilizing positive pressure to force air out the outer door.
  - b. The double entry area must be enclosed so that positive pressure is obtained when the first set of doors is opened.
  - c. Fan(s) and/or an air curtain must be incorporated into the entryway to blow air out the outer doors when they are opened.
- b. An enclosed vestibule needs to be incorporated into the design to allow tree delivery and material transfer.
- c. Insect exclusion screen or non-permeable covering must cover the entire structure with no gaps that would allow insects through.
  - i. Screen size must be able to exclude the melon aphid.
  - b. All cooling pads and fans must be covered with insect screen.
    - i. Allowances have to be made for ventilation with larger screened areas designed into the ends of the houses to permit air exchange.
- d. It is recommended that the structures have solid, non-permeable covering.
  - a. Covering can be poly, fiberglass, polycarbonate or acrylic panels.
    - i. When poly is used, a double layer of poly is recommended with a blower fan to inflate the air space between the sheets.
      1. Poly must be securely attached to structure, an aluminum poly lock is recommended.
    - ii. Other types of corrugated panels must have a closure strip of foam-type material to seal the ends. Having sufficient overlap or sealing panel edges is recommending to exclude insects.
    - iii. Insect screen is permissible but not recommended as a roofing material due to inherit weakness and tendencies for small holes and tears to occur as well as increasing the wetness of the trees.
  - b. It is recommended that appropriate repair materials such as polypropylene tape, silicone caulk and a small amount of extra screening material be keep on hand at all times to make small repairs if the structure is damaged.
- e. The test for an insect-proof house is that no openings or gaps are visible that would allow insects the size of the melon aphid through.
  - a. Smaller gaps between structural members can be sealed with silicon caulk or other suitable materials.
  - b. The house must also be sealed where the structure meets the ground.
    - i. It is recommended that the side and gable walls be buried at least 6 inches into the ground to provide a barrier for insects and or animals.
- f. It is recommended that nurseries consult with a greenhouse manufacturer or contractor to obtain specific design plans. Ventilation, heating, shading and windloads are best addressed by the vendors offering the greenhouse components for sale.



Entry to greenhouses must be through a double entry area with air curtain or fans forcing air out



Air curtains over door



Screen size must be able to exclude the melon aphid

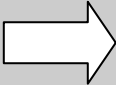


All cooling pads and fans must be covered with insect screen



Greenhouses sealed at ground level

## BUREAU OF CITRUS BUDWOOD REGISTRATION

<p><b><i>Prior to Nursery Start Up:</i></b></p>	<p><b>All Citrus Propagators</b> (all nurseries propagating citrus trees including own use, commercial and dooryard) <b>must also make application to the Bureau of Citrus Budwood Registration</b></p>
	<p>The purpose of the Citrus Budwood Protection Program is to minimize the spread of serious graft-transmissible pathogens of citrus by regulating the distribution, sale, and use of citrus propagation material.</p>
<p><b>Important</b></p> 	<p>It is unlawful for anyone to propagate or plant citrus nursery stock that is not produced in accordance with the regulations of the Citrus Nursery Stock Certification Program as outlined in Rule Chapter 5B-62, F.A.C. This includes growers who propagate trees for own use as well as nurseries that produce trees for the homeowner market. Topworking, cuttings, and air-layered citrus are also regulated by these regulations.</p>


## APPLICATION INSTRUCTIONS

The first form used in the Citrus Budwood Protection Program is the Application to Produce Citrus Nursery Stock (FDACS-08066, Rev. XX/10). This must be filled out by those dealing in citrus products for propagation. Upon receipt of the completed application, a participant number will be assigned to each participant. Once a nurseryman has a participant number, he may engage in all the registration activities of the program as described in Rule 5B-62, F.A.C.

### Submit an Application for the Budwood Program

Bureau of Citrus Budwood Registration  
3027 Lake Alfred Road (HWY 17)  
Winter Haven, FL 33881-1438



<p><b>Important</b></p>	<p><b>Citrus germplasm is prohibited from entering the State of Florida except under permit.</b></p>
	<p>The permitting process for domestic and foreign germplasm begins with an application (FDACS-08084, Rev. XX/10) to introduce citrus budwood. Once submitted to the Division of Plant Industry in Gainesville, Florida, the Citrus Budwood Technical Advisory Committee evaluates the request.</p> <p>If approved, each introduction undergoes shoot-tip micrografting to remove graft-transmissible pathogens followed by a customized program of indexing for known graft-transmissible pathogens of citrus. This process takes several years because the indexing strategy is largely based on biological indexing — the budding of the introduction onto pathogen-susceptible citrus varieties and observation for symptoms.</p> <p>Only limited slots are available each year in the Gainesville quarantine facility for introducing new citrus varieties.</p>

# 3

## **DECONTAMINATION & SANITATION**

### **PERSONNEL AND VISITORS**

Personnel and visitors shall decontaminate upon entering and leaving the site with an approved citrus canker decontamination spray material.

All visitors must sign a guest register and should not have visited another citrus grove or nursery on the same day.

Footbaths shall be used to decontaminate shoes of every person entering nursery and soil storage areas with an approved material such as copper sulfate. See the Florida Citrus Pest Management Guide for footbath materials and procedures.

Nursery employees who work outside the nursery shall not return to work within the nursery on the same day that they have had contact with field citrus.

### **CLOTHING**

Clean clothing must be worn each day. All uniforms and garments used in the nursery must be laundered. Onsite laundry facilities are recommended so clothing does not have to leave the nursery site. If gloves or hats are provided, they should be decontaminated each day and kept on site.

Personnel requiring sweat towels or cold weather clothing must make prior arrangements with management before bringing these items into the nursery so they can be disinfected and laundered at the nursery.

### **EQUIPMENT & SUPPLIES**

All equipment shall be cleaned and sprayed with an approved citrus canker decontamination spray material upon entering and leaving the site. All soil and plant material must be removed from equipment prior to bringing onto the nursery site.

Tools should remain at the nursery site and not used in other grove areas. All tools must be have a citrus canker decontaminant applied prior to entering the nursery site and be disinfected with 20% household bleach (sodium hypochlorite), by volume, between areas of the nursery. It is recommended that all tools and supplies needed to perform work be provided by the nursery and stored onsite.

All soil or other media entering the nursery must be accompanied by a nematode (BN) certificate.


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


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

All benches approved for nematode certification for commercial citrus nursery stock must be at least 18 inches above the ground. Measurement shall be from the bottom of the bench to the ground surface. Benches shall be cleaned and decontaminated between crops.

# 4

## **STERILIZING BUDDING KNIVES AND CLIPPERS**

<b>Important</b>	<b>Clippers must be sterilized between each individual source tree and each set of Increase Block trees.</b>
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.	
<ol style="list-style-type: none"> <li>1) To minimize the mechanical spread of this disease-causing organism between budwood source trees, a solution of a 20% household bleach (sodium hypochlorite), by volume, shall be used to sterilize tools.</li> <li>2) Sterilizing solution shall be made up fresh each day.</li> <li>3) Dip clippers, knives or pruning tools in the bleach solution for a few seconds.</li> <li>4) Other materials and methods of sterilization have been found ineffective with hard-to-kill plant viruses.</li> <li>5) DO NOT use alcohol or open flame as a virus killer.</li> </ol>	

<b>5</b>	<b><u>PATHOGENS</u></b>
<b>PATHOGEN STATUS</b>	
	<b>The following pathogens, and plants infected with or exposed to the pathogens, are declared to be endemic plant pests and nuisances:</b>
	<ol style="list-style-type: none"> <li>(a) Citrus psorosis virus and concave gum/blind pocket viruses;</li> <li>(b) Citrus viroids including exocortis and cachexia;</li> <li>(c) Severe strains of citrus tristeza virus;</li> <li>(d) Citrus tatterleaf virus;</li> <li>(e) Citrus leaf blotch virus;</li> <li>(f) Citrus canker;</li> <li>(g) Citrus greening;</li> </ol>
<b>All registered citrus nursery trees shall be propagated with budwood that has originated from sources tested for psorosis, cachexia (xyloporosis), tatterleaf, tristeza, exocortis, leaf blotch, citrus greening and inspected for canker.</b>	
<p>The Bureau of Citrus Budwood Registration conducts periodic pathogen indexing of registered source trees. Pathogen testing is on a recurring schedule as resources permit. The time of year of the testing will be dependent on the optimal time for pathogen detection, which varies contingent on the pathogen. Specific testing details can be found in the bureau's Citrus Budwood Testing Manual.</p>	
<p>Trees tested and found infected with pathogens shall be discontinued as a source of budwood and must be removed from the scion or increase blocks.</p>	
<p>Scion trees tested on an annual basis shall be charged an \$5 per tree annual testing fee.</p>	

<b>6</b>	<b><u>Propagating Material</u></b>
<b>Source Trees</b>	



<b>Important</b>	<b>Use only approved sources of propagating material.</b>
<p><b>Propagative material can only be taken from Registered or Certified Source Trees of the following categories:</b></p> <p><b>Foundation Tree - Scion Tree - Increase Block Tree - Seed Source Tree (seed only)</b></p> <p>(Each category of tree must meet the testing requirements and regulations established in Rule Chapter 5B-62, F.A.C.)</p>	
<b>Important</b>	<p>Source trees must be grown under protective cover</p> <p>(Seed source trees are exempt from enclosure)</p> <p>See page 21 for seed source tree requirements</p>

Three options for obtaining approved budwood:

- 1

Propagating material can be purchased from other nurseries who have approved source trees

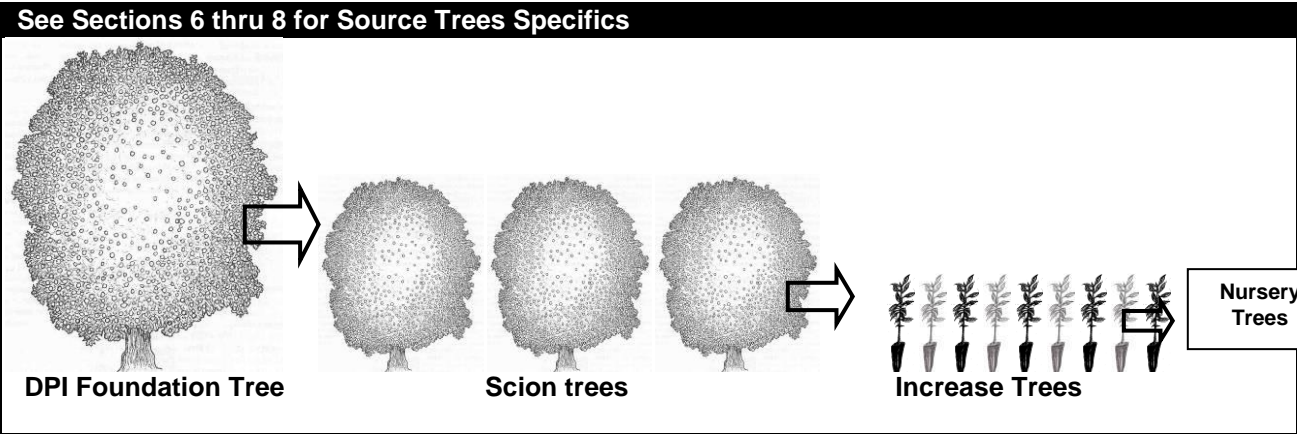
  - Scion trees
  - Increase trees
- 2

You may establish your own source trees at your nursery site using material purchased from the Division of Plant Industry foundation trees

  - Scion trees
  - Increase trees
- 3

Small quantities of budwood can be purchased from The Division of Plant Industry foundation trees

  - DPI foundation trees



7 Scion Tree Procedures

A scion tree is an individual tree grown from budwood originating from a budwood foundation tree, moved out of the nursery, and set in a uniform formation, and given a unique identification number all of which shall be under Department supervision.

## PRELIMINARY GUIDELINES

1	Budwood which is used to propagate trees for a scion block shall come from the Department's budwood foundation greenhouses (1st generation). This cutting must be witnessed and recorded by authorized personnel.
2	Previously unbudded seedlings shall be used for rootstocks, and if rebuds are required, they shall be cut from the original source tree.
3	A Source Tree Bud Cutting Report (FDACS-08172, Rev. XX/10) with the Budding Record filled out shall be submitted within 30 days of budding.
4	The trees shall be accurately tagged within the nursery. It is recommended that each tree be individually labeled when grown on a greenhouse bench.
A Division of Plant Industry inspector shall be present at the nursery site before any trees are moved to the scion block greenhouse location. The inspector will check all identification for accuracy and follow the trees to the scion block to witness planting. Trees moving to other districts shall be properly tagged and identified and accompanied by a Grower's Record of Registered Scion Tree Movement.	

## SCION TREE INSTRUCTIONS

1	All plans for setting up scion blocks must be approved by the Bureau of Citrus Budwood Registration.
2	At the greenhouse site to be planted, the growers are advised to plan ahead as to the direction they may wish to expand their scion block or extend their greenhouses in the future. Once row and tree numbers are assigned, they are difficult to change for that particular block. The starting point should be a corner, so future rows and trees can conform to the planting in ascending numerical order.
3	It is recommended that the block be planned so that each row will contain only one variety. When one clone comes close to filling a single row, an effort should be made to continue the row with that particular clone number.
4	Non-budwood source trees shall not be inter-set in scion blocks
5	The ground shall be accurately staked out and the holes may be dug prior to the inspector's arrival.
6	A stake shall be placed and maintained at the corner to show where the tree count starts.
7	The Budwood Office shall assign a scion block number for each block. . This number will start with your participant number followed by a consecutive number if you have multiple blocks.
8	Each scion tree will receive a unique identification number that shall always represent that tree even if the tree is moved. Each container must be labeled with the identification number that will be assigned by the DPI.
9	Scion trees also have an number identifying location. Thus, three scion trees, from VALENCIA-1-2-3, planted as the first three trees in the first rows from the starting point in scion block Number 1 would be numbered, VALENCIA-1-2-3-S-1-1-1, VALENCIA-1-2-3-S-1-1-2, VALENCIA-1-2-3-S-1-1-3.
10	Each of these trees will also receive a permanent ID# that is assigned later by the budwood office. The row & tree space identification is only used to quickly locate the tree, whereas, the ID# is used for all bud cutting, testing and program records.
11	Where additional rows are planted as an extension to an established greenhouse, a new scion block number shall not be assigned unless the new rows and/or trees cannot conform to the older planting in ascending numerical order. In these instances, a map shall be submitted showing a new starting point and designating new row and tree numbers.
12	Above-ground containers are to be lined up in straight rows and spaced apart at a reasonable distance. Keep foliage cut back so limbs from one tree do not mingle with adjacent trees. (Trees may be moved further apart within the row if space permits, as long as they maintain the same numerical order.)
13	If trees need to be repotted or moved at any time, a DPI Inspector must be present to verify that each tree has a tag containing the complete identification for that particular tree.
14	A per tree registration fee is charged annually. Trees on which fees are not paid within 30 days of billing shall be considered delinquent. Scion trees on which the fees are not paid shall be removed from the planting.
15	Scion trees become eligible for registration once fruit is inspected for trueness to type. Scion trees that are not registered maybe cut as certified (instead of registered).
16	A representative number of green/screenhouse trees must have bore fruit for evaluation prior to registration. It is recommended that a representative sample from each lot of trees be planted in an outside location for quicker fruit evaluation.
17	Scion trees shall be inspected prior to cutting budwood, as each tree will supply large amounts of budwood.

**Important**

**All Scion Tree movement and planting must be witnessed by a Division of Plant Industry inspector.**

## GROWER'S RECORD OF REGISTERED SCION TREE MOVEMENT (FDACS-08071)



In Ground Budwood Scion Planting



Containerized Budwood Block



Combination Planting

The movement of scion trees shall be witnessed by Division of Plant Industry inspectors who shall determine the following:

1	That the trees are properly identified (labeled) and they match the information on Budding Record of the Source Tree Bud Cutting Report (FDACS-08172, Rev. XX/10).
2	That the trees are taken from the correct row or bench in the nursery.
3	All trees are labeled at the time of movement with the identifying parent tree number, either individually or tied in bundles and identified by a single tag (if all the trees in that bundle are from a single source tree).
4	Division of Plant Industry inspectors may instruct nurserymen that they may prepare trees for movement (by cutting them loose in the ground) but they shall not be lifted out of the row (ground) except in the presence of witnessing personnel. Container trees shall not be moved until the inspector gives the OK.
5	Using the Grower's Record of Registered Scion Tree Movement, show:
6	Date when trees were moved;
7	Variety and clone number;
8	Rootstock;
9	Quantity of each;
10	Location of trees in the nursery, in which greenhouse and bench they were taken from;
11	Original BCR number;
12	Budding date;
13	Name and participant number of nursery where trees originated (Trees moved from);
14	Name and participant number of nursery planting the scion trees;
15	A copy of this report signed by the person witnessing the movement shall accompany the trees to their destination;
16	The original Grower's Record of Registered Scion Tree Movement shall be sent to the Budwood Registration Office without delay.

### SCION BLOCK PLANTING (Instructions for DPI inspector)

In many cases scion trees are moved under the supervision of one person and planted under supervision of another; therefore, the records must be accurate.

The planting of registered scion blocks shall be done in the presence of a Division of Plant Industry inspector. The following conditions must be met:

1	Trees shall bear identifying number of the budwood source tree.
2	Trees shall be accompanied by "Grower's Record of Registered Scion Tree Movement" (FDACS-08071, Rev. XX/10) signed by the inspectors who witnessed their movement.
3	Using "Supplemental Tree Map" plat the block as it is planted.
4	Complete the "Record of Planting" portion of the scion tree movement form and submit to the Budwood Office promptly.
5	Prepare access map for scion block planting. Be sure to send the access map and the scion block map to the budwood office without delay.
6	The budwood office shall assign the scion block number and prepare the office file for the scion block.
7	The Certificate of Source Tree Registration (FDACS-08072) shall be distributed to the nursery after annual registration fees are paid.

### ACCESS & TREE MAPS (Instructions for DPI inspector)

A tree map shall be made for each block, to help quickly locate where the first row starts and the direction the rows and trees run.	
1	Start by indicating the direction "north" at the top of the map.
2	Number rows and trees as they conform to the actual block. Always count missing trees and missing rows. Indicate the direction rows and trees run. Example: ROWS →
3	Indicate the variety and clone above the appropriate circles on the map.
4	Place brackets between the circles where one clone starts and another ends.
5	It may be helpful to draw landmarks such as other greenhouses, office, wells, barns, canals, etc., to understand how the block actually lies in respect to these physical objects.
An access map shall be made for each scion block planted so anyone unfamiliar with the block's location would be able to find it.	
1	In most cases, a simple road map starting from a recognizable landmark is sufficient. Maps should show adjacent highways and any other information necessary to approach the site. Be sure to show the direction "north" on the map. A photocopy of a county plat map is a good basic map.
2	Probably the best place to start an access map is at the junction of two highways. If such a map might not be clear to personnel unfamiliar with the area, include a simple explanatory statement. For example, "From the junction of U.S. 27 and Florida 538, go north 3.9 miles to graded county road, turn right (east). Block is .3 miles east of 27 on south side between greenhouse #1 and greenhouse #3".
3	It is not necessary that access maps be anything fancy, but they must supply essential information and must be accurate. You may know where the block and the trees are located, but these maps should be drawn so that anyone who can read a map can find them. Remember, these trees may be visited by inspection teams from other areas, by technical workers, or by nurserymen and growers. If a complete stranger can locate the block and trees, you have drawn a good map because this is its essential purpose. Bear in mind that roads may be changed and physical changes in landmarks may occur that make maps obsolete.

## REGISTERED SEED SOURCES

Budwood representing tested and standardized seed source trees of many varieties is available to Florida nurserymen and growers from the Division's Budwood Foundation greenhouses.

Seed source trees are not required to be in greenhouses. Planting of registered seed source blocks is handled as described herein for scion block planting. **See page 21 for seed source tree requirements**

Field seed source blocks will be identified with the SS- prefix.

# 8

## REGISTRATION OF SCION TREES

### REGISTRATION INSPECTION - SCION TREES (Instructions for DPI inspector)

When scion trees begin fruiting, the participant may call DPI to perform a registration inspection to verify trueness-to-type. DPI will automatically schedule the registration inspection of scion trees during the fruiting season once the trees turn 2 years of age.

Division of Plant Industry inspectors use the Certificate of Source Tree Registration and tree map:

- 1) Verify the identification of varieties within the scion block. The correct row / tree space and / or ID number shall correspond with the variety shown on the Certificate of Citrus Tree Registration. Most varieties can be determined by cutting available fruit or identified by leaf differences.
- 2) HOLD REGISTRATION OF ANY VARIETY WHEN THE IDENTIFICATION IS IN DOUBT. Wait at least a year or more until enough fruit is available to cut.
- 3) Trees that are approved for registration shall be vigorous with no obvious decline symptoms. When in doubt hold registration for another year.
- 4) Pay special attention to the rootstock for any growth characteristics that may be attributed to the rootstock.
- 5) Hold registration on trees with foot rot or severe cold damage until they appear to recover.
- 6) Check for unusual growth habit and off-type foliage and fruit as you walk down the rows.
- 7) Bud unions and trunks should be looked at for abnormalities, scaling, and foot rot.
- 8) Have the owner remove rootsprouts before registering any trees.
- 9) Do not hurry this work, keeping in mind that thousands of progeny trees may come from each tree that is approved for registration.

# 9

## INCREASE BLOCK PROCEDURES

Increase trees are specially designated nursery propagations for the purpose of rapidly multiplying the supply of propagation material for commercial nursery tree production.

### Important

**Increase Block Trees must be platted on the Source Tree Bud Cutting Report under the Budding Record.**

### Nursery Increase Block

**Label each Increase Block with the originating BCR #**



## INCREASE BUDWOOD SOURCE

1	Use budwood from the Division of Plant Industry's foundation source, (or)
2	Use budwood from registered scion block trees. These trees shall be approved by the budwood office before being designated for use.
3	Budwood cut for use in increase blocks shall be witnessed by DPI personnel or DPI authorized witness.
4	The increase block shall be promptly platted on a Source Tree Bud Cutting Report (FDACS-08172, Rev. XX/10) and submitted to the Bureau of Citrus Budwood Registration.
5	It is vital that the original BCR# be maintained, as future cutting will refer back to this number.

## INCREASE PROPAGATION GUIDELINES

1	All increase block trees must be grown in protected greenhouses.
2	Use unbudded seedlings as rootstock.
3	Locate Increase Blocks in rows separate from commercial nursery stock.
4	Different budwood selections shall be separated by minimum 24" in the row and clearly identified by permanent markers with legible tree numbers or by a physical barrier.
5	Increase Blocks grown on greenhouse benches shall maintain plants on separately identified benches. Trees on benches of mixed budwood sources shall be separately tagged for identification of each source tree and separated by at least 12".
6	Identify increase blocks by the originating the BCR#. Label or tag the bench with the BCR#.
7	Plants shall be regularly and frequently inspected and treated to control aphid and psyllid infestations in order to prevent pathogen infection.
8	Prior to cutting budwood, remove all rootsprouts. Also, remove any trees that may be visibly off-type or not growing vigorously and remove all seedlings not budded or having dead buds.
9	Rebudding shall be done in a timely manner.

## INCREASE BUDWOOD

### Important

**Increase Trees can only be used for 36 months from budding date.**

1	Approved increase blocks shall be used as source of propagation material for a period of up to 36 months from budding without further testing. It is important that insect control is maintained in increase blocks because they will lose registration status if insect infestations are found.
2	To maintain registration on nursery propagations from increase blocks, cutting of budwood shall be witnessed and supervised by a person authorized and trained by personnel from the Citrus Budwood Registration Bureau.
3	Bud Cutting Reports shall be issued for each cutting to reflect the total buds cut from all plants representing each separate clonal selection. See section 11 for Budwood Cutting Procedures.
4	When budwood is cut from increase trees the BCR# of the original Bud Cutting Report that established the block will be used to identify the origin of the propagations.
<b>Label the Increase Trees with the originating BCR #</b>	
5	The budwood office will verify the original BCR# to confirm the trees being cut from are proper increase sources.
6	Propagations of progeny nursery trees from increase blocks shall be permanently identified in the nursery row with tags or labels to maintain clonal identity.
7	Cutting budwood from increase blocks shall be closely supervised in order that only buds from the correct clonal selection are chosen. The close proximity of plant material from different clones increases the risk of cutting from the wrong plant. Identity tags and records shall be verified prior to cutting.

10

## **CERTIFICATE OF SOURCE TREE REGISTRATION**

The Certificate of Source Tree Registration (FDACS-08072, Rev. XX/10) is the owners record of registered or certified budwood program source trees.

1	This certificate serves as the grower's proof of registered/certified scion trees.
2	The form, Source Tree Bud Cutting Report, FDACS-08172, Rev. XX/10, shall take the place of the Certificate of Source Tree Registration for certifying increase trees. Increase blocks are valid for a period of 36 months with no payment of fees required.
3	The registration/certification of eligible trees is mandatory on the part of the grower in order to comply with the requirements of Rule Chapter 5B-62, F.A.C.
4	The certificate shall list all scion trees in the specific scion planting.
5	All trees on the certificate shall be identified by variety/clone.
6	Each scion tree will be assigned an unique identification number which the grower shall use for identification when budwood is cut. Increase trees are identified by the BCR number.
7	Pathogen test collections and result reporting will use the same ID number.
8	It is the owners responsibility to label all individual source trees so budwood cutting and test collection can be done accurately.
9	Trees can be identified with a hanging tag, stick-on label or marking pen.

### **Each individual scion tree should be labeled with the ID #**

10	All trees that are planted in the scion block shall require the payment of an annual fee for each tree including seed source trees.
11	The grower shall be billed or notified of fees due by the budwood office with an annual registration invoice.
12	Annual registration fees shall be paid beginning with the year planted and include all trees pending future registration.
13	Scion trees become eligible for registration after bearing enough fruit for identification purposes.
14	Prior to registration, budwood can be cut from these trees under the certified status.
15	Scion blocks not registered annually, after notification of fees due, shall be considered delinquent.
16	Delinquent trees shall be removed from the block so the only trees remaining will have either registered or certified status.

11

## **BUDWOOD CUTTING PROCEDURES**


**All Propagative material must be recorded on a Source Tree Bud Cutting Report and submitted to the Citrus Budwood Registration Office. Budwood Cutting Reports must be filled out by authorized witnesses that have been trained, and certified by the budwood office. Nurseries may contact the budwood office to arrange training and certification of their key personnel.**

## BUD CUTTING REPORTS

The Bud Cutting Report serves as a permanent record of the number and identity of buds cut from each source tree. THE ORIGINAL BUD CUTTING REPORT SHALL BE SENT TO THE BUDWOOD REGISTRATION OFFICE DAILY. The report shall show the variety, clone, tree ID#/BCR# and number of buds cut.

1	Bud Cutting Reports prepared in the budwood office identifying propagative material cut at budwood foundation greenhouses shall refer to both the variety and clone designation (primary identity EXAMPLE: Hamlin-1-4-1), and the specific foundation source tree from which the buds were removed (secondary identity EXAMPLE: 03104.08).
2	Where buds are to be cut from scion trees produced from foundation selections, only the variety and clone along with the scion tree identification number will be used (EXAMPLE: Hamlin-1-4-1 0021). This system of identification will enable all persons concerned to relate applicable horticultural information about the parent clone to the scion block source. The procedure outlined must be strictly adhered to as it will facilitate rapid and positive identification of propagations.

## HOW TO WITNESS BUDWOOD

1	Each scion block will have its own scion block number that has been preassigned by the Budwood Office.
2	Each scion block has its own file which shall contain:
	a. The access map
	b. The tree map
	c. The current Certificate of Source Tree Registration
3	Determine block location from Access Map.
4	In the greenhouse, locate the proper starting point using the <b>TREE MAP</b> (Row 1, Tree 1) Make sure you are at the right GREENHOUSE and ROW/BENCH, as indicated on the certificate.
5	Orient yourself as to the direction the rows run and which way the trees run in the row (i.e. north to south, etc... <b>DO NOT USE THE TREE MAP FOR WITNESSING!</b>
6	Locate the particular variety or clone you wish to cut on the <b>CERTIFICATE OF SOURCE TREE REGISTRATION</b> . (FDACS-08072., Rev. XX/10).
7	From increase blocks, cut increase budwood only from the sources that have not expired.
8	<b>IMPORTANT:</b> Cut registered budwood only from those trees that have a " <u>REG</u> " OR " <u>CERT</u> " (CERTIFIED) in the column listed <b>STATUS</b> on the CERTIFICATE OF SOURCE TREE REGISTRATION. Only those trees that are registered will have a " <u>REG</u> " OR " <u>CERT</u> " in that column.



**ONLY CUT BUDWOOD FROM A SOURCE THAT HAS:**

**REG = Registered or CERT = Certified**

See page 24 for an example of a Bud Cutting Report

## PREPARING PRIOR TO CUTTING BUDWOOD

1	Each scion tree is treated as an individual. Each unique source of increase trees is clumped together.
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2	Check overall health and vigor of the tree. Do not cut from declining trees, or trees with leaf variegation, excessive chimeras, or off-type foliage or fruit.
3	Remove any rootsprouts prior to cutting budwood. Look around the trunk and at the edges of the tree canopy for sprouts
4	Approve trees prior to allowing budcutters to cut any wood.
5	<b>Supervise the sterilizing of clippers.</b> Dip the cutting tools (clippers, lopper, etc..) in the sterilizing solution 2-3 seconds. Re-dip the tools for each tree. The recommended sterilizing solution: <b>20% HOUSEHOLD BLEACH.</b> - use 1 part household bleach to every 4 parts of water - shake or stir to mix well - <b>make fresh daily</b>


**NOTE:** Exocortis viroid survives over a week on steel blades

- **DO NOT** use alcohol or flame! Heating contaminated blades in a flame, dipping in 95% alcohol, or use of canker sprays **FAILS** to inactivate viruses and viroids..
- The corrosive action of the bleach on tools can be reduced by rinsing the blade in a mixture of water, vinegar (25%) and emulsifiable oil (2%).

## COUNTING AND BAGGING THE BUDWOOD

1	Count the buds removed from each scion tree. Write this figure on the SOURCE TREE BUD CUTTING REPORT.
	a. Increase budwood can be mixed together from all the trees originating from one source.
2	Always count the maximum number of buds on each stick. Count every bud that might possibly be used.
3	Large quantities of budwood may be estimated by:
	a. Counting 500 buds, divide by number of sticks counted to obtain average buds per stick.
	b. Count total number of sticks cut, multiply by average buds per stick to obtain total average buds cut.
	c. Occasionally recount 500 buds to assure estimates are accurate.
4	Make up a tag with complete identification of variety/clone and tree ID number <b>EXACTLY</b> as it appears on the CERTIFICATE OF SOURCE TREE REGISTRATION. Write the number of buds cut on the back of the tag.
5	Write the BCR# on the tag. The BCR# will come in handy later if the budwood qualifies for an increase block.
6	Bag budwood from each tree separately and secure it with the tag. When cutting budwood from an Increase Block, keep each clonal selection separate.

## COMPLETING SOURCE TREE BUD CUTTING REPORT

1	The Source Tree Bud Cutting Report (FDACS-08172) must be filled out using the current year's Certificate of Source Tree Registration.
2	Copy all the information directly from the Certificate of Source Tree Registration for the exact variety, clone, and ID.
3	Indicate how the propagations will be used, under the "Cutting Information". Check (✓) the appropriate end use of the trees being propagated.
4	Record the number of buds cut for each source tree. If the buds are to be used for rebudding, check (✓) the "rebuds" column.
5	In the ROOTSTOCK column, write the rootstock that the particular buds will be budded on.
6	When budwood is to be transferred from one participant to another, the person making the Bud Cutting Report shall indicate the recipient of the budwood in the space provided. In an instance where budeyes are to be transferred from one participant multiple recipient, separate Bud Cutting Reports shall be submitted for the transfer to each participant.
7	Be sure to sign and date the Source Tree Bud Cutting Report.
8	Completed budwood cutting reports (original) are to be submitted to the budwood office the same day they are prepared. 

12

## **BUD RECORD (THE NURSERY PLAT)**



The right hand side of the Source Tree Bud Cutting Report serves as the Bud Record or Nursery Plat for propagations. The purpose of the Budding Record portion of the Source Tree Bud Cutting Report is to maintain the identity of each bud line and the rootstock on which it was propagated so that it may be verified for use in a scion block, increase block planting, or for commercial propagations.

- 1) Nurseries must keep budding records for all propagations in the citrus nursery. Traditionally budding records have been called a nursery plat.
- 2) The Budding Record on the Bud Cutting Report fulfills record keeping requirements of the program and has been found to be a quick and easy method of recording propagations to trace them back to specific source trees.
- 3) Within 30 days after budding trees, the nurseryman or grower shall furnish the Citrus Budwood Registration Office with a copy of the Source Tree Bud Cutting (Budding Record Location). It is the nurseryman's responsibility to complete and submit the plat to the budwood office.
- 4) Indicating the "rootstock" used on the Bud Cutting Report is vital, as these records help track industry trends in new plantings and between different varietal types.
- 5) If rebudding source trees is necessary, buds must be obtained from the exact source trees from which the original wood was cut to maintain registration. Rebuds do not require a nursery plat.
- 6) PLEASE REMEMBER TO KEEP PROPAGATIONS CLEARLY IDENTIFIED WITH PERMANENT ID TAGS OR MARKERS.

## 13

## **GROWING CITRUS NURSERY TREES**

The following procedures shall be adhered to for a grower wishing to produce citrus nursery trees.

- 1) The nurseryman or grower shall be registered with the Division of Plant Industry and become a participant in the Citrus Budwood Protection Program.
- 2) All citrus trees shall be grown in enclosed greenhouses as specified on page 4.
- 3) All citrus trees shall be propagated from budwood originating from either a scion block tree, increase block tree, or foundation tree meeting current pathogen testing requirements.
- 4) All budwood removal shall be witnessed by persons authorized by the Department and recorded on a Source Tree Bud Cutting Report.
- 5) The Source Tree Bud Cutting Report with the Budding Record filled out shall be submitted within 30 days of budding.
- 6) Rootstocks used must be previously unbudded and all rebuds must come from the original budwood source.
- 7) Each row of budded trees in a nursery shall be marked by stakes or tags showing the correct source tree number at the beginning and end of that particular group of trees in the row. Increase trees shall be marked with the originating BCR# of the source cutting.
- 8) When a grower buds into container-grown rootstocks, each container or each budded seedling shall be labeled with proper tree number and source identification, otherwise, each group of trees budded from an individual source tree shall be labeled and separated in the nursery to prevent mixing stock from two or more sources.
- 9) Nurserymen must maintain budding records to locate the propagations in the nursery.
- 10) See Section 3 & 4 for sterilizing budding knives and clippers and decontamination.
- 11) All other regulations found in this manual and in the budwood rule 5B-62 must be adhered to.

### **Important**

**All nursery propagations must be properly labeled or tagged in the nursery.**

## 14

## **SALE OF NURSERY TREES**

Nursery stock must be identified on the Citrus Nursery Stock Movement Report. This is Division of Plant Industry form FDACS-08038. The Citrus Nursery Stock Movement Report must accompany every movement of trees from the nursery. Nurserymen may obtain approval from the Bureau of Plant Inspection to print this form on their invoices.

# 15

## DOORYARD CITRUS NURSERIES

### Important

Dooryard Nursery trees must meet all the requirements of commercial citrus nursery trees in this procedure manual and in Rule Chapter 5B-62, F.A.C.

(Dooryard nursery stock is exempt from the nematode requirements)

Dooryard nursery stock must be propagated on approved nursery sites from approved budwood sources in approved greenhouse structures.

### IDENTIFICATION OF DOORYARD NURSERY STOCK

- 1) When sold, citrus trees shall have each individual tree identified with a slip-on label bearing the producing nursery's certificate of nursery registration number.
- 2) The variety and rootstock must also be identified with a slip-on label.
- 3) Soil treatments must be labeled according to the nursery compliance agreement.

# 16

## RETAIL SALES

- 1) Retail outlets must obtain their citrus nursery trees from approved nurseries propagating according to the guidelines of Rule Chapter 5B-62, F.A.C.
- 2) Retail outlets having less than 250 citrus trees in stock at any given time are exempt from having an approved structure for displaying their trees. See Rule Chapter 5B-62, F.A.C. for retail outlets having more than 250 citrus trees.
- 3) Retail outlets may not return unsold trees to the producing nursery.
- 4) See section 14 above for tagging and identifying citrus trees for sale.
- 5) A Retail Citrus Nursery Compliance Agreement form FDACS-08353, Rev. 07/05 must be signed.

# 17

## TOPWORKING

### Important

All topworking material must originate from registered/certified sources grown under protective screen

(Topworking budwood must meet the same requirements as commercial nursery budwood in this procedure manual and in Rule Chapter 5B-62, F.A.C.)

Topworking budwood must be accounted for on a  
**Source Tree Bud Cutting Report**

Indicate "Topwork" on the Bud Cutting Report to distinguish from regular nursery propagations.

Top-worked trees cannot be moved after budding.

All registered budwood selections are identified by a sequence of numbers and letters that allow propagations to be traced back to the exact source tree from which it originated.

If any pathogen contamination, mutation, off-type, or variegation happens to occur, quick containment of the problem would be possible by tracing propagations back to their source trees for all distributions that might be affected.

## VARIETY

The variety is identified by a brief abbreviation or letter code. The code "**SPB**" or "**DPI**" after the variety identification indicates a selection made by the Budwood Bureau or Division Staff.

## PARENT TREE NUMBER/CLONE

The first number indicates the ownership (participant number) of the original parent tree. Tracing this number back would locate the owner's name and block location. The last two numbers of the parent tree number are the actual row and tree space of the parent tree. Example: VALENCIA-10-12-7. (This Valencia was entered by participant number 10 and is found in row 12 and is the 7th tree in the row). Slight variations of this numbering system will be used so no duplicate numbers are assigned.

## SCION TREE IDENTIFICATION

The designation after the parent tree number shall identify the identification number of the tree cut from. Example: VALENCIA-10-12-7-S00345. (This Valencia clone 10-12-7 carries the ID# 00345).

## FOUNDATION BLOCK IDENTIFICATION

Clones originating from the Department's Foundation Block shall be identified by an F designation. Budwood originating from the Department's Chiefland Foundation shall be identified as a CH- location and have a unique identifying number.

**Trees originating from foundation budwood are considered first generation trees. Only first generation trees may be planted in registered scion blocks. Second generation trees are those produced using budwood from scion block trees or increase blocks.**

5B-62.007, F.A.C. Parent Trees. Parent trees are selected as being unique germplasm belonging to a nurseryman, grower or breeder, or on property that the owner has given written permission to a nurseryman and the department for access for observation, testing, and shoot-tip grafting. Parent trees are not used as a source of budwood for nursery trees; they only supply the initial material that is shoot-tip grafted to become a registered clonal selection.

## PARENT TREE PROCEDURES

Participant entering parent trees into the Citrus Budwood Protection Program.

- 1) The owner shall fill out and sign a Parent Tree Candidate Entry Form at the time of entry as a candidate in the budwood program. This form will identify any future restrictions on budwood distribution, which may limit the division's role with the cultivar.
- 2) Either before or immediately after entering trees in the Program, the grower should begin to keep yield records for individual trees so that by the time the graft-transmissible pathogens testing is completed he will have a record of his most productive registered trees.

- 3) Trees selected should have demonstrated, by actual maturity tests, comparatively high fruit quality (solids, ratio, percent juice, color, etc.).
- 4) Individual trees shall bear fruit uniformly typical of the very best type of the variety selected.
- 5) If trees are located in more than one area, the grower shall submit general access maps showing the location of the various blocks before preliminary inspections can be made.
- 6) If trees are not on the applicant's own property, the Division employee should make sure that:
  - a. The owner understands that inspection and testing of his trees shall be necessary.
  - b. The applicant entering the trees has the permission of the owner in writing.

The bureau takes propagating material from parent candidate trees to test for graft-transmissible pathogens, shoot-tip graft to remove pathogens and to make back-up propagations.

- 1) The bureau makes propagations from the original parent tree to have a source plant. This source plant can be used for:
  - a. Backup in case the original tree is lost.
  - b. A source for shoot-tip grafting if the original attempt is not successful.
  - c. Horticultural evaluation.
  - d. Possible inclusion in the department's foundation blocks or screenhouses after shoot-tip grafting.
    1. The bureau's screenhouses and foundation blocks have limited space available for new selections and inclusion as foundation trees will be based on several factors.
      - 1) The uniqueness of the variety. Potential benefit to the citrus industry.
      - 2) General availability to the industry growers without restrictions. Patented varieties in certain situations will be included.
- 2) The bureau makes propagations at its discretion, taking into account the uniqueness of the parent candidate and the attributes it possesses.
- 3) All trees propagated in the department's facilities shall become property of the department.
- 4) The bureau will not distribute propagating material from parent candidate sources (the propagations that the bureau has made) until shoot-tip grafting and parent tree indexing is complete and the owner agrees to sign a release agreement.
  - a. Under some circumstances the bureau may distribute (prior to complete registration) from its sources under the request or permission of the owner.
    1. When the original source has become lost or pathogen infected.
    2. Material to be used for research or trial planting with the cooperation of the owner.
    - 3.

## Patented Selections

- 1) The bureau will attempt to honor all distribution conditions on varieties that have plant patents.
  - 2) The bureau may, at its discretion, choose not to include patented varieties in its foundation plantings or maintain budwood source of varieties that have distribution restrictions.
- It is the responsibility of the patent holder to inform the Bureau of Citrus Budwood Registration in writing of any selections that have any special conditions.

## SELECTING CANDIDATE TREES (Instructions for DPI inspector)

Persons selecting candidate trees should realize that this is perhaps the most important part of their work. Parent trees are the foundation on which the entire Citrus Industry is based. Many thousands of progeny trees may come from a particular selection; therefore, only those trees with outstanding records of production, high fruit quality, and generally vigorous growth habit are considered. A mediocre selection does nothing toward improving the industry. Very few new parents have been selected in the past 10 years because there are many excellent selections now available from the Budwood Foundation Greenhouses. The majority of new parents are now being entered by citrus breeding programs.

## PRELIMINARY INSPECTION PROCEDURES (Instructions for DPI inspector)

The purpose of this inspection is to select, on a preliminary basis, potential parent candidate trees. This preliminary inspection should eliminate substandard trees by visible external symptoms. It's a good time to become familiar with the entire block, and its history. During preliminary inspection, tree maps should be prepared, the quality of individual trees defined, and all maps checked and corrected where necessary. It should be emphasized that during this inspection, employees of the division can refuse to accept trees which for any reason are, in their judgment, undesirable sources of budwood. Consider the following:

- 1) Make this inspection, if possible, with fruit crop on the trees.
- 2) A general survey of the block is the FIRST STEP. This can be done by walking through the grove. Low areas that may be wet or cold should be noted. This is the point at which plant inspectors should refuse

the block or grove submitted if, in their opinion, the trees are not outstanding. Entering inferior trees accomplishes nothing for the grower or the program. If the block is generally satisfactory, begin inspection.

- a. Inspect, examine, appraise, and plat each tree until enough have been examined to establish a pattern of the general quality of the block.
- 3) During preliminary inspection, the following should be determined:
  - a. Color, size, vigor, conformation and productiveness of the tree.
  - b. Variety and trueness-to-type. At least a few fruits from each potential candidate should be examined for shape, size, peel thickness, texture, season of maturity, and seed content; internal and external appearance should be consistent for the variety.
  - c. Freedom from fruit abnormality (shape, chimeras, etc).
  - d. Freedom from abnormalities of foliage, foliage variation, variegation, rosetting of the leaves, and leaf distortion.
  - e. Freedom from corky banding or netting of the trunk and limbs.
  - f. Freedom from eccentric growth such as galls, witches broom, flattening, distortion, or fasciations of the limbs.
  - g. Freedom from gummosis or trunk lesions caused by disease.
  - h. Freedom from visual symptoms of virus infection. Freedom from disease is not obligatory as all new parents candidates are shoot-tip grafted to eliminate all diseases present.

## PARENT TREE RECORDS (Bureau office records)



PARENT TREE DOCUMENTS SHALL CONSIST OF A FILE CONTAINING THE FOLLOWING SUPPORTING RECORDS:

- 1) PARENT TREE FILE
  - a. A Parent Tree File for each participant or DPI#
- 2) ACCESS MAP
  - a. The parent tree access map shall be used for the same purpose as the scion block access map and be drawn in the same manner as described in Section 5.
- 3) TREE MAP
  - a. The parent tree map shall be used for the same purpose as the scion block tree map and be drawn in the same manner as described in Section 5.
- 4) PARENT TREE FOLDER
  - a. Make up a new Parent Tree Folder for each new variety
  - b. These folders fit into the Parent Tree File
  - c. Fill out all required information in the designated blanks on the file cover. The Parent Tree Folder shall give a brief history of the tree, grove, or variety that is being selected as a parent tree candidate.
  - d. During the preliminary inspection, find out as much as possible about the candidate tree and indicate the following details on the Parent Tree Folder if known:
    - (1) Variety
    - (2) The parent tree numbers (clone) shall be entered by the Budwood office
    - (3) Participant's application number (DPI #'s will be assigned by the office)
    - (4) Applicant's name and address
    - (5) Owner's name & address, if different than applicant
    - (6) Location of grove
    - (7) Owner's designation of block
    - (8) County location
    - (9) Section, township, and range, if known
    - (10) Indicate a row and tree number for each candidate selected
    - (11) History of grove, tree, or that particular variety (list features that make this particular candidate better than those currently in the program). Include season of maturity, rootstock, and source of budwood/seed. Approximate age of tree (year planted)
    - (12) Add any further remarks as needed.
- 5) PARENT TREE TEST TRACKING FORM
  - a. Record of pathogen testing

Provisions are made for early release of selected sources in order to provide propagative material to the industry before complete production, maturity and other cultural factors are completely known.

- 1) Due to the probable lack of comprehensive horticultural information on early release material, this material is not recommended for use in large scale plantings but rather to be used on a trial basis.
- 2) Many selections that have not proven themselves in test plot or varietal trials in the state will be included in this early release category.
- 3) All graft-transmissible pathogen testing must be done as specified for source trees in Rule 5B-62.

### **PROSPECTIVE (BREEDING) SOURCE TREES (New citrus selections being evaluated by citrus researchers)**

A Prospective Source Tree is a tree being considered for registered or certified status in the Budwood Protection Program. It has not been fully evaluated or pathogen tested and therefore does not qualify for use as a budwood source. Use is for trial research plantings.

- 1) A Prospective Source Tree may be propagated from, provided it is nearing the completion of all testing and the owner assumes all risks involved including the destruction of all the propagations if it is not granted registered or certified status in the budwood program.
- 2) If the source tree has not been registered or certified by the time the trees are ready to leave the nursery, they may not be commercially sold until registered or certified status is obtained.
- 3) Citrus greening and citrus tristeza virus status must be determined before propagation.
- 4) Pre-approval must be obtained from the Bureau of Citrus Budwood Registration to allow the use of this type of propagation.
- 5) Prospective source trees must be propagated with the consent of a citrus researcher at the University of Florida or USDA.

Propagation from Prospective Source Trees prior to the completion of testing shall be made at the risk of the owner. These propagations must be destroyed if subsequent tests indicate a pathogen or undesirable horticultural trait.

An Import Permit is required to ship citrus budwood or seed into other citrus producing countries and states. A Phytosanitary Export Certificate shall be issued when the material is being packaged for shipment. (Phytosanitary Export Certificate void is after 14 days.)

The following information is needed prior to mailing an order for budwood:

- 1) A copy of the issuing country's import permit stating conditions of treatment, if any. This permit shall be in English, signed and dated, and have a permit number.
- 2) Name and address of consignee.
- 3) Means of conveyance; such as, personal bag, courier, airmail, express mail or other.
- 4) Declared point of entry into the importing country.
- 5) Any additional declarations or conditions.

When placing an order for budwood, please submit a copy of the import permit with the above information, to the Florida Department of Agriculture & Consumer Services, Division of Plant Industry, Bureau of Citrus Budwood Registration, 3027 Lake Alfred Road, Winter Haven, Florida 33881-1438.

In addition, a certified bank draft or International Money Order in US funds, made payable to the Division of Plant Industry, must be received prior to shipment of budwood. Charges for out of state shipment of budwood is \$2 per budeye (Processing Fee \$100 U.S.) plus shipping. An additional fee of \$50 shall be charged for the Phytosanitary certificate.

The Citrus Budwood Foundation source trees are greenhouse grown at in a location isolated from commercial citrus in Florida. The foundation trees are maintained to provide small quantities of budwood for nurserymen to establish their own source blocks of scion or increase trees.

The primary source of commercial quantities of propagative material are from commercial nurseries having registered scion blocks or increase blocks. The budwood office can provide nurserymen a list of source trees, so budwood can be ordered directly from another nursery.

Citrus seed must originate from source trees that are registered on a Certificate of Source Tree Registration as specified in Rule 5B-62.017, F.A.C.

#### **Establishing a seed source block**

1. Seed source trees must originate from parent trees that have been pathogen indexed and registered in the budwood program.
  - a. Budwood for most seed source varieties is available from the Chiefland Foundation greenhouses.
2. Budwood used to propagate seed source trees must be witnessed by the Department and shall be reported on Form FDACS-08172, Source Tree Bud Cutting Report.
  - a. The Budding Record Location on the Source Tree Bud Cutting Report shall identify the location in the nursery of the progeny trees.
3. The planting of seed source trees must be witnessed by the Department on Growers Record of Registered Scion Tree Movement Form FDACS-08071.
4. Existing seed source trees can be topworked to another variety provided the new variety is not similar in leaf or fruit morphology. Topworked seed source trees must comply with (1) and (2) above. Topworked trees must be inspected to assure only the topworked variety is grown.
5. Seed source trees cannot be planted within 300 feet of an approved greenhouse structure. However, existing trees are not required to be removed.
6. Seed source blocks should be isolated and surrounded by windbreaks if feasible.
7. Chemical treatments should be provided for routine citrus canker and psyllid control.

#### **Inspecting and testing seed source trees**

1. Seed source trees must be inspected by the department and shall have at no time shown symptoms of seed transmissible pathogens listed in Rule 5B-62.003, F.A.C.
2. Seed source trees must be tested and found free of citrus leaf blotch virus and tatterleaf virus.
3. Varieties that have not originated from foundation trees must enter the parent tree testing program and be tested and found free of applicable seed-transmissible pathogens. The fee for parent tree shoot-tip grafting and testing is \$500.

#### **Seed Treating**

1. Citrus seed used in commercial citrus nurseries must be treated to prevent the spread of pathogens.
2. Seed extraction operations must be separated from any approved greenhouse structure sources.
3. Seed drying should be separated from extraction areas and away from field citrus trees.
4. Fruit rinds culled from the extraction process must be removed from the area prior to seed treatment and drying and all personnel/vehicles handling the fruit decontaminated.
5. Personnel drying and bagging the seeds should not have handled the fruit or peels on the same day.
6. Nursery personnel must not enter any approved greenhouse after being involved in the extraction/treatment process, until the following day.
7. Seed must be hot water treated at 125 degrees Fahrenheit for ten minutes, followed by a dipping in 2% household bleach (sodium hypochlorite), by volume for 5 minutes.
8. A surface fungicide should also be applied to the seed prior to storage.
9. Removal of seed coats prior to planting is a further means of limiting vascular and surface pathogen spread.
10. Small lots of seed used for research or own use is exempt from hot water treatment.

#### **Importing seed from out-of-state**

1. Citrus Seed can only be imported into Florida with a permit issued by the Division.
2. Citrus seed originating outside of Florida must meet the following requirements:
  - a. The seed source trees supplying any citrus seed, originating outside of Florida, must have been tested free of seed-transmissible diseases listed in Rule 5B-62.003, F.A.C.
  - b. The tests shall have been completed within 36 months of the seed extraction date.

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## FEES

To register a Scion Tree	\$5 per tree (Due annually) <sup>1</sup> (includes seed source)
Additional fee to reinstate a tree	\$5 per tree plus the back annual registration fees
To witness budwood cutting:	\$5 per 1000 budeyes cut, \$10 minimum, \$25 maximum.
Budwood cut from Foundation greenhouses	25¢ per eye (\$5 Minimum)
New DPI releases	\$1 per eye (First year) 25¢ thereafter
Shipment of budwood out of state	\$2 per eye (\$100 Processing Fee)
Phytosanitary certificate	\$50 plus mileage <sup>2</sup>
Tip cuttings (6" long)	\$1 each (\$2 Out of state)
Biological pathogen testing	\$50 per tree (Non-source tree)
PCR pathogen testing	\$25 per tree (Non-source tree)
Scion tree testing (tested annually)	\$5 per tree
Parent Tree Indexing	\$200 per tree (Due when accepted for testing)
Shoot-tip Grafting	\$500 per selection (includes testing fee)
Seed	\$100 per quart
Citrus Nursery Site Approval Fee shall include a \$50 per nematode sample plus mileage <sup>2</sup>	
Shipping fees for budwood and seed will be the actual cost at time of shipment.	
<sup>1</sup> Registration fee includes all trees pending registration, beginning with the year planted.	
<sup>2</sup> Mileage shall be based on the prevailing State mileage rate.	

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## LIST OF FORMS

All forms/certificates used in the Citrus Nursery Stock Certification Program are listed below:

Form Title	Form #
Application For Certificate Of Registration.	FDACS-08004
Stop-Sale Notice or Hold Order.	FDACS-08016
Citrus Budwood Bureau Invoice	FDACS-08319
Nursery Stock Movement Report.	FDACS-08038
Application to produce citrus nursery stock.	FDACS-08066
Growers Record of Registered Scion Tree Movement.	FDACS-08071
Certificate of Source Tree Registration.	FDACS-08072
Certification to Witness Registered Budwood.	FDACS-08111
Source Tree Bud Cutting Report.	FDACS-08172
Budwood Order Form.	FDACS-08218
Application and Permit to Plant Citrus Pathogen Infected Stock.	FDACS-08274
Parent Tree Candidate Entry Form.	FDACS-08298
Research Facility Compliance Agreement.	FDACS-08318



**Bud Cutting Report**

02245

**SOURCE TREE BUD CUTTING REPORT**

(Section 581.031 (3), F.S.)  
Rule 5B-62, F.A.C.  
Bureau of Citrus Budwood Registration, 3027 Lake Alfred Road, Winter Haven, FL 33881-1438 / PH: 863/298-7712, FAX: 863/298-7738

Source Record		Source Type		✓ Cutting Information		Budding Record			
Variety – Clone		Increase Trees enter BCR #	Scion Trees enter Tree ID #	For Increase Block	(Increase Blocks can only be established from Foundation or REGISTERED scion trees)	✓ the box for Increase Block and Plat below			
				Commercial Propagations	Rebuds	Rootstock	Block/House	Row/Bench	# Budded
Hamlin 4-1			0001	x	650	SWG	1	2A, 3A	600
Hamlin 4-1			0002	x	410	SWG	1	4A	300
Hamlin 4-1			0005	x	750	KUH	1	4B, 5A, 5B	620
Hamlin 4-1			0006	x	770	CLEO	1	6	650
Valencia 14-19			0034	x	340	CAR	3	10S	310
Valencia 14-19			0041	x	360	CAR	3	10N	320

Supplier: Approved Enclosed Structure      User: Your Approved Citrus Nursery  
Address: Away from insects      Address: Away from disease  
Participant # 999      Date Cut: 6/6/2012      Participant # 1111      Date Budded: 6/7/2012  
Signed Supplier: Signed by nursery supplying budwood      Signed User: Your name  
Signed Witness: Authorized witness Signature      Submit original to Budwood Office daily  
(White - Original) (Yellow - User copy) (Pink - Supplier Copy)

DACS-08172 Rev. 4/08      As an inducement for the Division of Plant Industry to distribute budwood, the user agrees to the terms and conditions on reverse side:

**SOURCE TREE BUD CUTTING REPORT**

(Section 581.031 (3), F.S.)  
Rule 5B-62, F.A.C.  
Bureau of Citrus Budwood Registration, 3027 Lake Alfred Road, Winter Haven, FL 33881-1438 / PH: 863/298-7712, FAX: 863/298-7738

Source Record		Source Type		✓ Cutting Information		Budding Record			
Variety – Clone		Increase Trees enter BCR #	Scion Trees enter Tree ID #	For Increase Block	(Increase Blocks can only be established from Foundation or REGISTERED scion trees)	✓ the box for Increase Block and Plat below			
				Commercial Propagations	Rebuds	Rootstock	Block/House	Row/Bench	# Budded
Hamlin 4-1		02245		x	5,550	Volk	3	1 thru 6	5,525
Valencia 14-19		02245		x	7,600	US-802	7	10 thru 17	7,200

Supplier: Your Approved Citrus Nursery      User: Your Approved Citrus Nursery  
Address: Away from disease      Address: Away from disease  
Participant # 999      Date Cut: 8/31/2013      Participant # 1111      Date Budded: 9/1/2013  
Signed Supplier: Your name      Signed User: Your name  
Signed Witness: Authorized witness Signature      Submit original to Budwood Office daily  
(White - Original) (Yellow - User copy) (Pink - Supplier Copy)

DACS-08172 Rev. 4/08      As an inducement for the Division of Plant Industry to distribute budwood, the user agrees to the terms and conditions on reverse side:

**How to fill out Increase Block Bud Cutting Report**

Use the BCR # of the originating budwood.

It is a good idea to tag or label the greenhouse benched with the BCR# relating to each particular group of propagations.

Increase blocks cannot be extended past 36 months.

**How to fill out Bud Cutting Report when cutting Scion trees**

Use the four digit ID number for each scion tree cut.