

Rules and regulations for fruit movement and handling from CBS-infected areas

By Megan Dewdney, Mark Estes and Tim Schubert

As we approach the harvesting season for our earliest cultivars, it is important to re-familiarize anyone who will be working in or with fruit from the U.S. Department of Agriculture's Animal and Plant Health Inspection Service (USDA-APHIS) and Florida Department of Agriculture and Consumer Services (FDACS) quarantine areas for citrus black spot (CBS) about the current regulations. These rules and regulations are designed to slow the spread of this serious disease within Florida, thereby protecting the fresh fruit markets and preventing the spread of CBS to other states. This article will detail the rules and regulations, as of July 2011.

Black spot is a fungal disease caused by *Guignardia citricarpa*. It is able to infect leaves, fruit and small twigs. The most important spore type (ascospores) are formed in the leaf litter. Although leaves can be infected by the fungus, they are only rarely symptomatic. It does not matter what time of year leaf tissue dies and decomposes on the grove floor; if the leaf is infected, it can produce ascospores. Since the leaves rarely exhibit symptoms, all leaf debris must be considered a potential inoculum source. Once the fungus becomes established in a grove, it may be several years before it becomes apparent. The slow onset of symptoms allows the disease to spread almost undetected. This is the reasoning behind many of the rules and regulations concerning CBS. Sporulation of a different type (water splashed conidia from pycnidia) occurs on fruit, contributing to local, but not long-distance, spread.

The USDA issued a Federal Order, effective Oct. 14, 2010, to help prevent the spread of citrus black spot. The Federal Order was revised in June 2011 with expansion around the original CBS quarantined areas in Collier and Hendry counties. Maps and descriptions of the quarantined areas for CBS and other regulatory details may be accessed through the state's Citrus Health Response Program (CHRP) website along with other relevant compliance information at the following address: <http://www.doacs.state.fl.us/pi/enpp/pathology/citrus-black-spot.html>

Prior to departing citrus groves in

the quarantined areas, it is important to inspect all vehicles and equipment for plant material and debris and remove it before microbial decontamination. Any discovered plant material or debris should be left on that property, or, if moved, must be transported and treated in accordance with the terms set forth in the Federal Order (DA-2011-29). Equipment and personnel must be decontaminated before leaving the grove with the appropriate decontamination products as detailed in Schedule 11 from the FDACS' Division of Plant Industry's (DPI) website at: http://www.freshfromflorida.com/pi/chrp/citrus_growers.html

As fruit is moved from quarantined groves, each load must be identified by a serially numbered trip ticket containing the following information: grove name, landowner or agent, lessee, harvester, license tag number, number of boxes contained in the load, grove block where fruit was harvested, grower C/A Number, destination processing plant or packinghouse, and harvest date. Each fruit load harvested from a quarantined area is required to be covered by a tarpaulin in accordance with state and federal regulations to prevent the loss of leaves and debris during transportation.

Upon arrival, all quarantined fruit, leaves and debris in the truck or trailer must be unloaded and handled as described below. Following the unloading of fruit, the vehicle must be thoroughly cleaned out and decontaminated prior to departing the receiving facility. If any citrus leaves or other citrus waste material are to be moved from a receiving facility (or from a grove), it must be placed in bags or be covered in transit in order to prevent the loss of leaves or debris. Once emptied and cleaned of plant debris, all trailers, truck beds, field boxes or bins must be disinfected using one of the materials listed below:

- A 200-parts per million (ppm) solution of sodium hypochlorite with a pH of 6.0 to 7.5; or
- A 0.2-percent solution of a QAC compound; or
- A solution containing 85 ppm PAA (indoor use only).

All leaves, unwholesome fruit and other plant debris originating in any

manner from a quarantined area must be handled or treated in one of the following methods:

- Heat treated to a minimum of 180 degrees Fahrenheit for at least one hour;
- incinerated;
- buried at a landfill or other APHIS or state-approved disposal site, and covered with dirt at the end of every day that dumping occurs.

The state anticipates prohibiting the feeding of plant debris from the quarantine area to livestock. The practice of feeding debris to livestock is acceptable, however, for citrus plant material that originates outside the quarantined areas.

All citrus fruit harvested from a CBS Quarantined Area must move intrastate either directly to a processor operating under a state compliance agreement for processing into a product other than fresh fruit, or to a packinghouse operating under a state or federal compliance agreement. Although there is currently no requirement for covering loads of fruit for transit from non-regulated areas to receiving facilities, tarping is highly recommended as a precautionary measure for the protection of citrus groves in non-quarantined areas of our state.

PACKERS AND SHIPPERS

There are additional rules for fresh citrus packers and shippers. Fresh fruit from groves within a CBS-quarantined area is eligible for movement interstate with a certificate to all states, provided the fruit originates from a grove operating with a valid compliance agreement, is packed in a packinghouse operating under a valid compliance agreement, and the fruit is treated and processed using APHIS-approved methods.

- 1) The fruit must be washed AND brushed.
- 2) The fruit must be surface disinfected at the packinghouse in one of the following methods:
 - Wet thoroughly for at least two minutes with a solution containing 200 ppm sodium hypochlorite, with pH maintained from 6.0 to 7.5.
 - Wet thoroughly with a solution of 1.9-2.0% sodium o-phenyl phenate (SOPP) for 45 seconds if there is visible foaming, or for one minute if the

solution is non-sudsing.

- Wet thoroughly for at least one minute with a solution of 85 ppm peroxyacetic acid.

3) The fruit must be treated at labeled rates with imazilil and/or thiazobenzazole at the time of packing.

4) The fruit must be waxed.

Inspected and treated fruit must be accompanied by a federal certificate issued by an inspector or by a trained individual operating under a compliance agreement. The certificate must also be present on the containers in which the fruit is packed. Fruit packed and treated in accordance with APHIS Packinghouse Compliance Agreement stipulations may be distributed in Florida and other citrus-producing states.

Fresh fruit from organic or other groves originating in CBS-quarantined areas, if packed in a packinghouse under compliance with APHIS and shipped under Limited Permit, may be distributed in non-citrus producing states under the following protocol:

- Fruit must be washed and brushed, and surface disinfested with a treatment as listed above, or by use of an organic disinfectant such as PAA or hydrogen dioxide. Treatments must be applied in accordance with label instructions.

- Fruit must be free of leaves, stems and other plant material. Stems less than 1 inch may be attached to fruit, but no leaves are allowed.

- Fruit must be accompanied by a limited permit issued by an inspector or a person operating under an APHIS compliance agreement, and the limited permit must also be present on the containers in which the fruit is packed.

A requirement for a preharvest survey for freedom from CBS of the source block of fruit 30 days prior to harvest has not been included in the rules for the 2011-12 season, but USDA indicates that new suspect areas may be subject to this requirement. Groves with additional harvest cycles last season required that inspectors conduct a preharvest survey no more than 45 days before each subsequent harvest.

Also recall that last season, fruit from a grove that failed visual preharvest survey or PCR testing of foliage for CBS, or fruit that did not receive visual preharvest survey or PCR testing, could be shipped to non-commercial, citrus-producing states east of the Mississippi River provided that no CBS symptoms were found during a packinghouse inspection. Regulated fruit from groves in a CBS-quarantined area that was not eligible for interstate movement

under the conditions stated for consumption in the United States could be moved interstate only for immediate export. Regulated fruit for export required a limited permit issued by an inspector or a trained individual operating under a compliance agreement and had to be moved in a container sealed by an inspector directly to the port of export according to the conditions of the limited permit. Aspects of these former requirements are still under consideration by USDA-APHIS-PPQ for the upcoming season. Any updates on the current season regulations will be announced as soon as possible.

Check for updates and information on federal quarantines, regulations and the interstate movement of citrus at the APHIS Citrus Health Response Program website (http://www.aphis.usda.gov/plant_health/plant_pest_info/citrus/black_spot.shtml).

Megan Dewdney is assistant professor of plant pathology at the Citrus Research and Education Center, Lake Alfred; Mark Estes is environmental administrator, Pest Eradication & Control, Florida Department of Agriculture and Consumer Services' Division of Plant Industry (FDACS-DPI), Winter Haven; and Tim Schubert is administrator, Plant Pathology, FDACS-DPI, Gainesville.