

Friday November 13, 2009

## HLB-ACP-Xcc Technical Working Group

### Background

Following the recent confirmation of Asian citrus psyllid (ACP) in Arizona, every state that either produces or could produce citrus, has at least one of the three pests, ACP, citrus greening (HLB), and/or citrus canker, *Xanthomonas citri* subsp. *citri* (Xcc) that limit interstate movement of citrus nursery stock. A previous Technical Working Group (TWG) provided options for control of the three pests that included adoption of a systems approach to controlling both the vectors and pathogens:

([http://www.aphis.usda.gov/plant\\_health/plant\\_pest\\_info/citrus/downloads/cns-twg-report.pdf](http://www.aphis.usda.gov/plant_health/plant_pest_info/citrus/downloads/cns-twg-report.pdf)). The findings of this TWG were broadly categorized under the following headings:

- I. Characteristics of a facility that can safely ship citrus nursery stock interstate
- II. Source Materials
- III. Production monitoring which includes inspection, sampling and quality assurance
- IV. Corrective measures/responses to breaches

This previous TWG did not provide guidelines for geographic separation of citrus nursery and commercial production, noting a lack of sufficient data to validate the effectiveness of a geographical separation. This data gap was addressed as a research need in the report from the TWG. A Federal Order to allow movement of citrus nursery stock to non-citrus producing areas is currently under draft and is based upon a risk assessment document prepared by CPHST – requested by the TWG in 2007. A TWG that met in August of 2008 suggested that citrus nursery stock production sites be located a minimum of 1 mile from any commercial citrus and 100 feet from any residential citrus. This one mile buffer was based in part on anecdotal evidence from field observations, the opinion of subject matter experts, and limited laboratory information.

Given the uncertainties associated with the buffer area concept, the TWG was asked to address the appropriateness of requiring citrus nursery stock facilities to be located at least one mile from established citrus production areas, as a condition for movement to **Non-Citrus** producing states. Consideration of the decisions formulated during the call included both ACP/HLB and citrus canker.

Additional details were provided to the TWG by email prior to the teleconference, including pertinent sections of the Federal Order and literature related to psyllid flight distances. The objective of the TWG was to produce a scientifically based response to the main question of effective buffer area distance after open discussion and further information gathering.

*Questions to be Addressed:*

The following questions were discussed by the TWG during the conference call:

**Is there scientific evidence to support a phytosanitary requirement of a one mile buffer between nursery production facilities and commercial citrus groves to allow movement of nursery stock to non-citrus producing areas?**

**Is a minimum distance necessary to minimize the risk of spread, or are other factors more important?**

**What measures are needed to insure a low risk of nursery stock moved from HLB-ACP and/or Xcc infested areas to non-citrus areas?**

*Findings:*

The one mile buffer requirement in the Federal Order was chosen in the belief it would provide an acceptable degree of separation given the uncertainty surrounding the flight capabilities, and the knowledge that weather events can move psyllids extended distances. The primary literature reports ‘natural’ psyllid movement up to 500 meters (1/3 mile), with some experimental evidence of flight capabilities in excess of 1200 meters (3/4 mile) for Asian citrus psyllid and 1500 meters (9/10 mile) for African citrus psyllid. The proposed requirement of a 1 mile buffer distance from nurseries to nearby citrus is not fully supported by this evidence and the TWG reiterates that there is insufficient data to validate a specific distance of geographical isolation with any confidence. These uncertainties notwithstanding, and based on the principle that the larger the geographical separation between pathogen/vector and nursery stock, the greater the confidence in maintenance of disease free material, the TWG believes it is scientifically sound to employ some minimum distance (e.g., 1 mile) between commercial citrus and nursery production facilities, and another distance (e.g., 100 ft.) where no hosts are present. (Note that California recommends 3 miles between commercial citrus and foundation tree producing facilities).

Coupled with a systems approach that incorporates practices which safeguard facilities, the adjacent and surrounding environment, provide for weather monitoring, enhanced surveillance, and other best management practices will result in production of nursery stock free of regulated pests that can be safely shipped to non-citrus producing states. Many of the variables associated with such a systems approach were discussed during earlier TWG’s cited above, and will not be re-iterated here.

In the case for exclusion of Xcc, screen houses are unlikely to completely exclude Xcc (depending on the nature of the weather event) and probably cannot withstand weather events typical of many production areas (excluding tornados, hurricanes and other weather extremes). Furthermore, the TWG was not familiar with any studies that tested structural design of facilities in relation to exclusion of Xcc. This is an area where

further study is needed. Solid walls would probably be required for exclusion of Xcc, while screen houses would likely be sufficient for ACP-HLB. The use of solid walls or screen house design notwithstanding, effective safeguarding will depend upon employee education, good nursery/best management practices in addition to effective bio-security.

The options provided by this TWG expand upon the previous TWG findings and the RMA prepared by CPHST. Where multiple pest/pathogen combinations exist, such as Florida, the facility must be constructed to simultaneously exclude all of the most invasive and insidious pests that may threaten movement of nursery stock.

### **Findings for nursery production facilities to ship citrus to non-citrus areas**

- 1. Use of clean stock and a tracking system that provides a traceable lineage for stock material.**
  - All foundation, and scion trees must be tested and indexed on a regular basis.
  - Only certified rootstock should be used.
  - No seed from HLB-infected or exposed trees should be used. It would be prudent to treat all seed prior to use.
  - All material departing production facilities must be treated with a systemic pesticide.
- 2. Distance from commercial citrus is not the critical factor but the 1 mile buffer does provide some level of protection or risk reduction. Similarly, a host free buffer zone around facilities is pragmatic.**
- 3. Incorporation of Best Management/Good Nursery Practices is paramount to successfully shipping pest and disease free material.**
  - All facility personnel must be trained in these practices, trained to recognize disease vectors and symptoms for all relevant exotic citrus diseases, and trained in plant inspection methods, biosecurity and pest exclusion principles
  - Measures need to be in place to ensure that personnel comply with phytosanitary practices.
- 4. Routine detection surveys in and around facility. It is critical that the distribution of pests of concern be known. Thus periodic surveillance of the environs surrounding the nursery should be conducted. A reasonable area for surveillance would be a radius of one mile from the facility.**
- 5. Statistically based inspection and testing of nursery material every 30 days. Nursery plants should be certified disease-free 30 days prior to shipment.**

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