Citrus Greening (HLB) Quarantine and Control

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CITRUS HEALTH RESPONSE PROGRAM

Public – Private Partnership

- APHIS-PPQ:
  - Policy Management, Riverdale, MD
  - Science and Technology, Raleigh, NC
  - Field Operations, Raleigh, PPQ States

- Florida Citrus Mutual
- California Citrus Mutual
- Texas Citrus Mutual
- California Citrus Quality Council
- Nursery Industry: National and State Nursery Associations

Departments of Agriculture
- California
- Florida
- Texas
- Arizona
- Louisiana
- Georgia
- South Carolina
- Alabama
- Mississippi
- Hawaii, Puerto Rico, US Territories
• Partnership in Science & Technology

- PPQ CPHST- Center for Plant Health Science and Technology
- California Citrus Research Board
- Florida Citrus Research & Development Foundation
- University systems in CA, AZ, TX, LA, and FL
- USDA Agricultural Research Service (ARS)
- USDA National Institute for Food and Agriculture (NIFA)
Partnership to Protect our Borders
Avoid Citrus Pest and Disease Incursions

DHS: Customs and Border Patrol
APHIS PPQ: Plant Inspection Stations
PPQ: International Services

The goal of the Citrus Health Response Program (CHRP) is to safeguard the citrus crop against a variety of citrus diseases and pests and also sustain the United States' citrus industry, by maintaining continued access to both domestic and export markets.
U.S. CITRUS PRODUCTION

Production Acreage/ $Value:

- Florida 538,900 a / $1.75 b
- California 253,000 a / $1.37 b
- Texas 27,300 a / $72.6 m
- Arizona 21,800 a / $61.8 m
- Louisiana 1,400 a / $7.0 m
- Alabama 400 a / $1.8 m
- Total 842,800 a / $3.3 billion

Sources: USDA NASS and LSU
THE PROBLEM:

HLB/Citrus Greening (FL, TX, CA, SC, GA, LA)  Citrus Canker (FL, LA)  Citrus Black Spot (FL)  Sweet Orange Scab (FL, TX, AZ, MI, CA)

- Huanglongbing - CG is the biggest threat to the citrus industry
- Yield losses of $300 million annually
- Growers are spending $500 per acre to fight citrus pests
- The presence of citrus diseases increases production costs by 40%
- Pest and Diseases impact trade
• Detections of ACP, the vector of Citrus Greening / Huanglongbing
Detections of HLB in Citrus Producing States
CITRUS HEALTH
RESPONSE PROGRAM

National Quarantine Boundaries for
Asian Citrus Psyllid and Citrus Greening

Legend
- Partial County CG Quarantine**
- Quarantine for ACP and CG
- Quarantine for ACP Only
- Partial County Quarantine ACP

**There is a small portion of Hidalgo County, Texas as well as portions of Los Angeles and Orange Counties in California that are under quarantine for CG. Due to the scale of this map, these areas are not clearly visible. A written description can be found at:

American Samoa
(includes outlying islands not depicted here)

Northern Mariana Islands

Hawaii

Puerto Rico & USVI

May 9, 2014
Prevent or slow the spread of ACP and HLB to non-infested citrus producing areas

Suppress and manage ACP and HLB in infested areas

- Early detection & rapid response
- Area-wide pest management (e.g., Citrus Health Management Areas – CHMA in Florida)
- Safeguarding measures and regulatory enforcement
- Targeted research and method developments
  - Biological Control; Early Detection methods (molecular, detector dogs, plant volatiles)
- Communication and Outreach – SaveOurCitrus.org
APHIS is investing in sustainable management strategies for HLB

**Epidemiological studies:** Develop models that can determine/predict the incursion and spread of HLB and other diseases – in collaboration with USDA-ARS, Ft. Pierce. Supports the regulatory survey programs.

**Biological Control:** APHIS has established public and/or private sector partnership to develop biological control technologies – Pilots set-up in CA, TX, FL and AZ. Applicable in urban areas, abandoned groves, and organic production systems. Areas difficult to enforce regulatory programs.
CITRUS HEALTH RESPONSE PROGRAM

SHORT-TERM STRATEGY

- Florida: Quarantined for ACP and HLB
- Strategy ACP/HLB survey and management
  - ACP Population Monitoring
    - Tap Sampling
  - ACP Treatment
    - Grower managed Area-wide Suppression Program
    - Timely applications with insecticides
  - Inoculum (HLB) survey and Control

May 9, 2014
SHORT-TERM STRATEGY

- California: Partially quarantined for ACP and 5-mile quarantine for HLB
  - ACP Detection and Delimiting Survey
    - Yellow Panel Traps
    - Visual and Sweep Net Survey
  - HLB Survey
    - Tissue sampling through Molecular analysis
    - Eradication of positive trees
  - ACP Treatment
    - All host plants within 400 meter
    - Soil drench with imidacloprid
    - Foliar application with pesticides
HLB/Citrus Greening detected in a home garden in Los Angeles County in 2012. Arizona is free of CG.

CDFA is monitoring the spread of ACP and HLB.

USDA-ARS expertise in modelling surveys.

Management of ACP in urban landscaped trees is challenging.

Citrus industry in partnership with California Department of Food and Agriculture (CDFA) and PPQ has initiated a biological control program for urban areas.
CITRUS HEALTH RESPONSE PROGRAM

Mexico

Threat from south of the border
Texas – Quarantined for ACP / Partially for HLB

Representation of HLB/CG infected trees in a citrus grove in Texas

PCR Results - April 2013
- PCR Positive - Cut Down (94)
- PCR Positive - Standing (38)
- PCR Negative - Symptoms in 2012 (324)
- PCR Negative - Symptoms in 2013 (11)
- No Symptoms Present (3661)
- Trees Planted in 2012 (225)
- Missing Trees (28)
Area-Wide Management of ACP in Texas

- Area-Wide Management of ACP in Texas is promising
- Management where urban landscaped trees and commercial groves are mixed is challenging
- PPQ is currently testing biological control alternatives in urban areas and trailer parks

John V. da Graca, Texas A&M, 2011
ACP and HLB Quarantine: Nursery Stock

- Clean nursery stock program to reduce spread of Citrus Greening /HLB and ACP
- Facility - citrus nursery stock must be grown in a pest-exclusionary structure. High costs of building exclusionary facilities
- Testing - visual inspection, sampling, trapping, and testing every 30 days
- Treatment – soil drench every 6 months and foliar treatment 10 days prior to movement
LONG-TERM STRATEGY

Sustainable management strategy for HLB (Coordinated Research)

- **Crop Improvement:** Develop resistant / tolerant citrus tree
- **Horticulture Management:** Maintain bearing, productive tree even if infected with HLB
- **Diagnostics/Early detection:** Detect infected trees as soon as it is infected
- **Psyllid Research:** Track infectious psyllid populations and limit encroachment into citrus production areas
- Comprehensive communication plan
- Public awareness & involvement
- Producer information
- Master gardeners, extension agents, scouts
- National campaign launched targeting internet sale of host plants
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