PEST INFORMATION, DETECTION AND SURVEILLANCE PROJECTS OF THE CENTER FOR PLANT HEALTH SCIENCE AND TECHNOLOGY, USDA, APHIS

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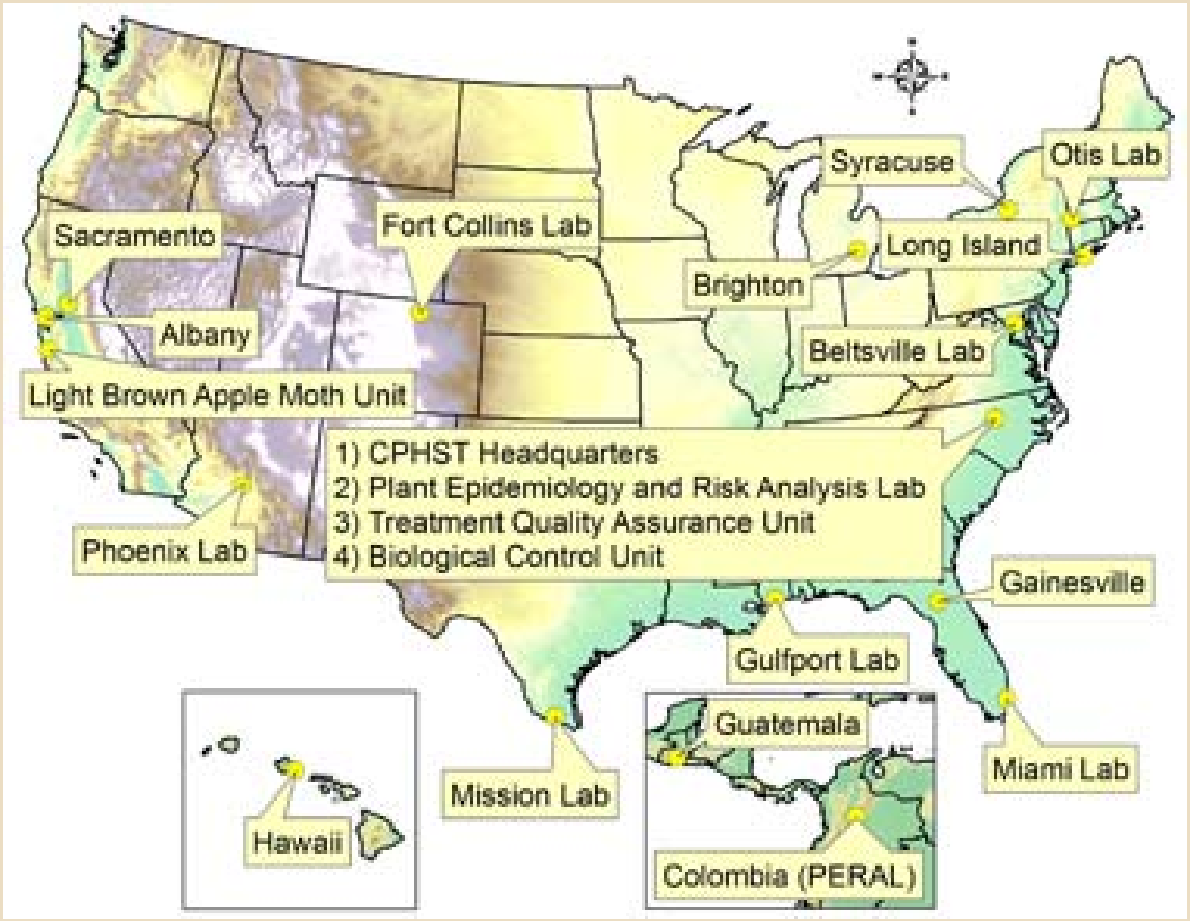
CPHST



- Scientific support for APHIS-PPQ
- 12 units across the United States
- Main areas of work:
  - risk analysis
  - methods development
  - biological control
  - treatment quality
  - sterile insect technique
  - pest detection and identification support

Pest Identification Support

- ID Tools
- ID Source
- ID Image
- ID Mobile

ID Tools

- Internet-based, free, open to everybody
- Uses Lucid software
- www.lucidcentral.org
- Includes identification keys, image gallery, illustrations, and fact sheets on pests and diseases

ID Tools – In Development

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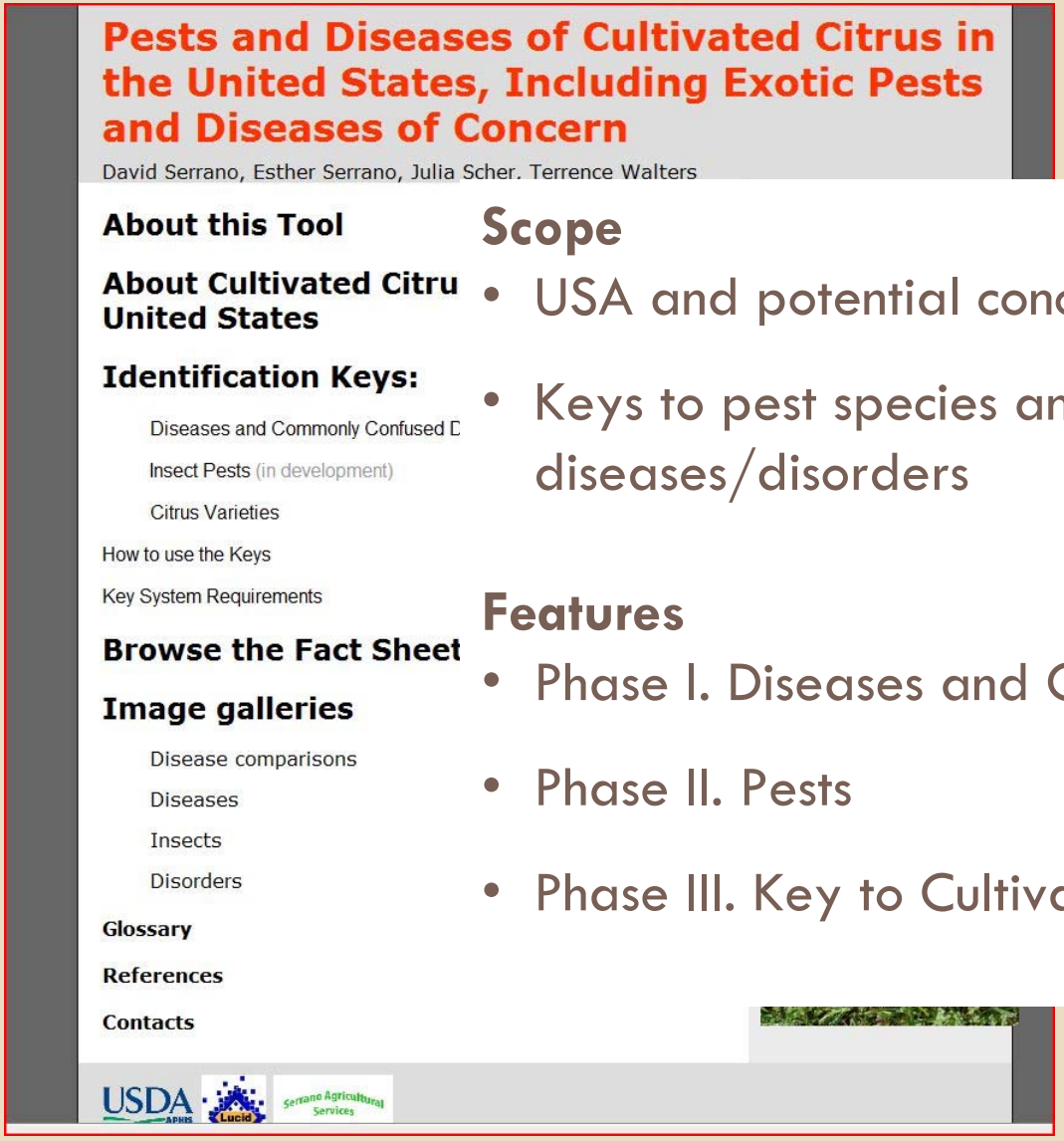


Scope

- USA and potential concern
- Keys to pest species and symptomatic key to diseases/disorders

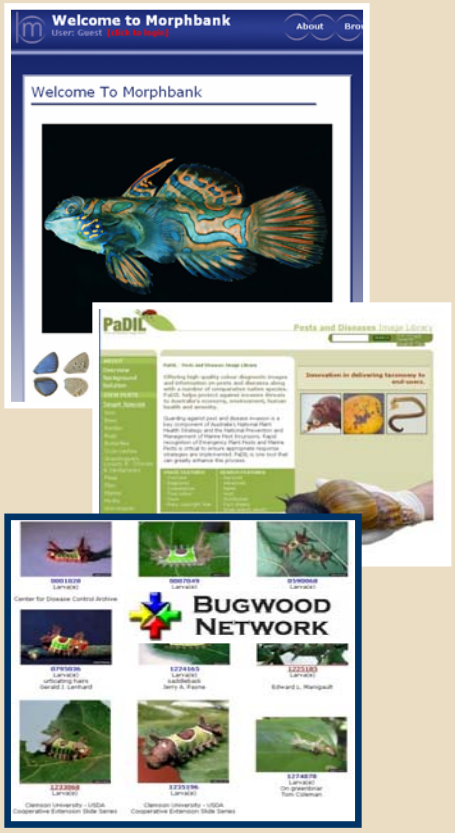
Features

- Phase I. Diseases and Commonly Confused Disorders
- Phase II. Pests
- Phase III. Key to Cultivated Citrus and related taxa

ID Source

- Searchable database allowing users to quickly search for ID Aids useful to them.
- Provides access to websites containing identification keys, fact sheets, screening aids, and images for identifying pests, weeds, and diseases of concern to PPQ.
- Users will be able to comment on ID Aids.
- Being developed collaboratively by CPHST and Colorado State University.
- Initial beta release is planned for December of 2010.

ID Image (**ID**entification via **IMAGE**s)

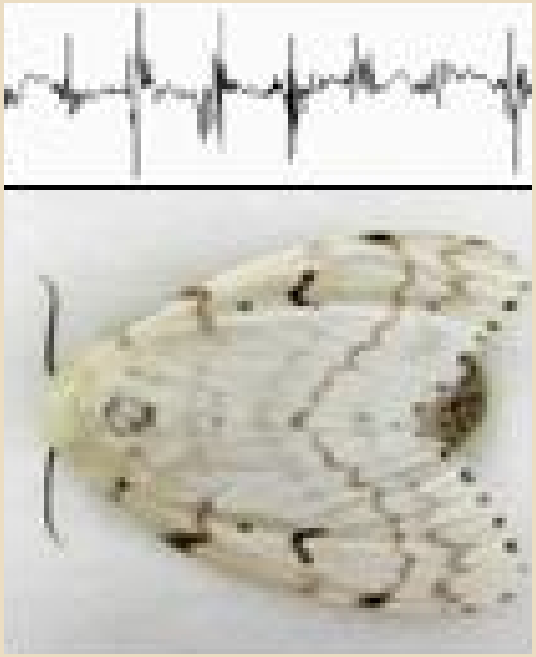


- What makes an image useful/valuable for identification?
- Do different taxa require different images?
- How would clients access/use an image database?
- Is there an existing searchable database of images that supports our clients needs?
- What type of data should be associated with each image to support the identification process?
- Can an organism from an electronic image be identified from an image database (image recognition)?
- Can an image database of pests, diseases, and weeds of concern provide value to stakeholders and clients?

ID Mobile (**ID**entification on **MOBILE** devices)

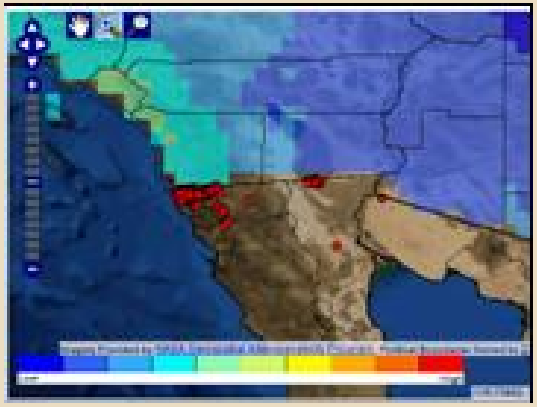
- PDA/Tablet identification software for field identifications

Remote Sensing Insect Smart Trap



- CPHST, in cooperation with Penn State University, is laying the groundwork to develop a remote sensing insect smart trap
- The trap would use acoustic technology to identify insect pests and send the information to regulatory officials for monitoring and possible follow up.
- Research has focused on understanding the capabilities of the newly designed active sensor, which is capable of detecting and analyzing insect wing-beat acoustic signatures.
- In many cases, the insect's frequency shift is unique and may serve as a "fingerprint" for remote identification.
- Future development efforts will be focused on integrating the acoustic sensor into a trap for European gypsy moth males

NAPPFAST



- National Agricultural Plant Pest Forecast (NAPPFAST) System.
- Risk maps for hosts, biology and points of entry for CAPS target pests and are available
- Users can combine risk maps with other data such as pest observations and satellite imagery to plan survey activities.
- http://www.nappfast.org

CAPS Commodity-based Survey Documents

- Series of survey references and guidelines for the Cooperative Agricultural Pest Survey (CAPS) program.
- **Survey references** contain detailed information on the biology, host-range, distribution, survey, and identification.
- **Survey guidelines** provide instructions for survey and identification of select pests.
- Goal: to increase homogeneity of the national data set and increase the statistical confidence in "pest-free" status.

Global Pest and Disease Database

- Biological information on over 2000 pests of U.S. quarantine significance
- Full-time staff systematically adding new information
- Fully integrated with EPICA and other systems

Survey Activities

- Snail survey along Panama Canal
- Numerous pest surveys around the Caribbean Region

Questions?