

# INTRODUCTION TO DDIS

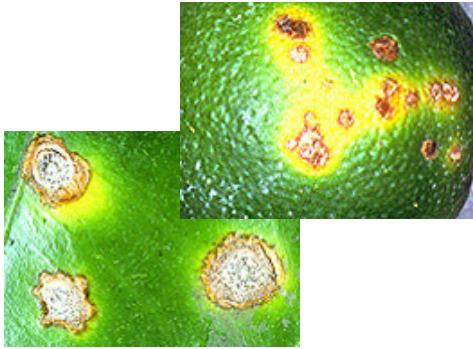


Jiannong Xin  
Office of Information Technology  
UF/IFAS  
[xin@ufl.edu](mailto:xin@ufl.edu)

# Challenges in Agriculture

- Pests, plant diseases, and invasive species cause enormous economic losses throughout the world.
- Increased concerns on food security, food safety, and agricultural trade.

# Pests, Plant Diseases, and Invasive Species



Citrus Canker



Citrus Greening 黄龙病



Wheat Rust



Soybean Rust



Photo credit: Curtis Rainbolt and Ken Langeland, UF/IFAS



Tomato Yellow Leaf Curl Geminivirus



Photo by M.C. Thomas FDACS/DPI

Red bay ambrosia beetle

# Food Safety and Trade Implications



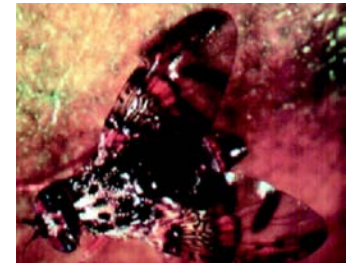
Spinach (E coli) 2006



Tomato (salmonella) 2008



Foot and Mouth Disease



Fruit Fly

Photo credit: USDA, FDA

# Economic Impact



## Amber Waves

The Economics of Food, Farming, Natural Resources, and Rural America

September 2008

United States Department of Agriculture | Economic Research Service

Search  GO!

[Current Issue](#)

[All Issues](#)

[Amber Waves Home](#)

[Feature Articles](#)

[Findings](#)

[Statistics](#)

[About Amber Waves](#)

[E-mail notices](#)

[Farm Bill Resources](#)

[ERS Newsroom](#)

[USDA's Economic Research Service](#)

PRINT EDITION



[Click here to subscribe.](#)

AW is an award-winning magazine! Read more...

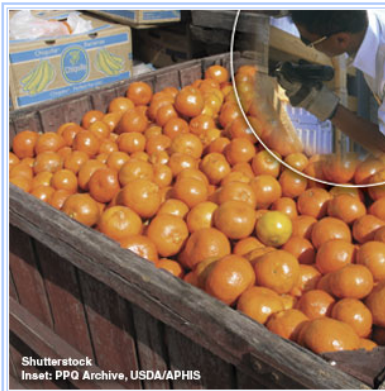
[AmberWaves September 2008](#) > [Features](#) > Article

### FEATURE

## Regulating Agricultural Imports To Keep Out Foreign Pests and Disease

Governments use a range of interventions to combat pests, and economic analysis can help assess the potential measures.

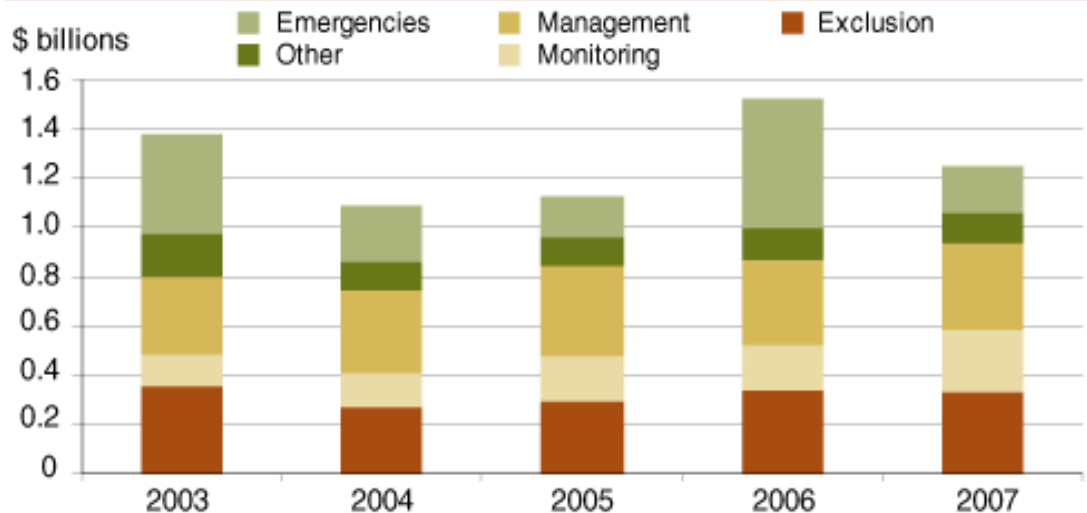
[Michael Livingston](#)  
[Craig Osteen](#)  
[Donna Roberts](#)



- Increases benefit shipment foreign
- The United States use a range of interventions to reduce environmental disease
- Economic measures to assess economic with benefit

Shutterstock  
Inset: PPO Archive, USDA/APHIS

### APHIS outlays for pests and diseases exceeded \$1 billion per year from 2003 to 2007



Source: USDA Annual Budget summaries.

# Establishing a Diagnostic Network

- Early detection
- Accurate diagnosis
- Quick response

# Establishing a Diagnostic Network

## Educate

Provide training and learning modules to farmers and First Detectors.

## Detect

Early detection to report high-risk plant pathogens and pests.

# Establishing a Diagnostic Network

## Diagnose

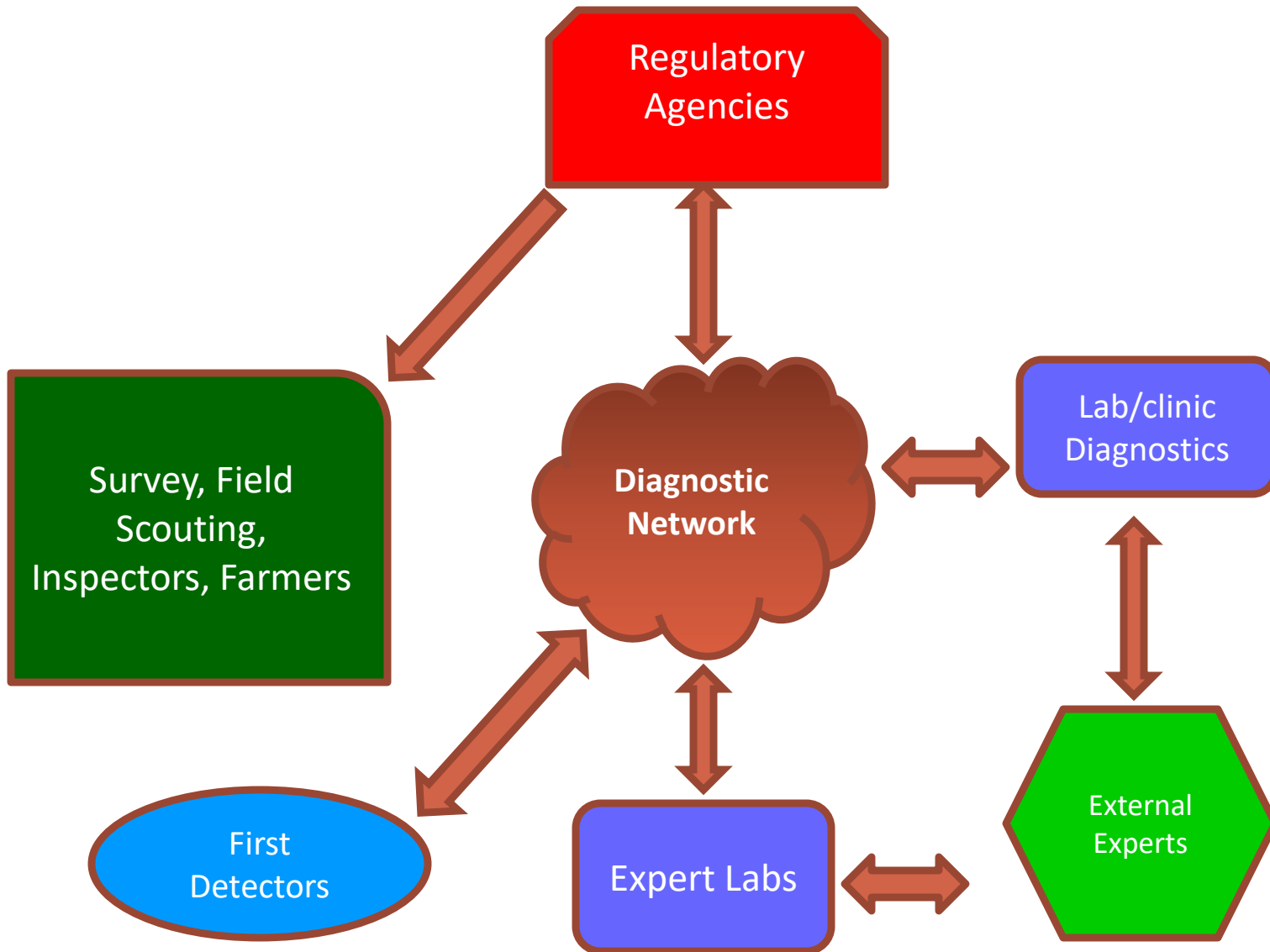
- Increase diagnostic capacity
- Establish standards for diagnosis and identification
- Consult internal and external experts

## Response

- Communicate with state and federal regulatory agencies
- Alert and notification system
- Develop Standard Operating Procedure (SOP)



# Diagnostic Network



# Goal

Protecting agriculture from pests, plant diseases, invasive species and their overall impact on economic lose, trade and environment.



# Distance Diagnostic and Identification System for Extension (DDIS)



[DDIS.IFAS.UFL.EDU](http://DDIS.IFAS.UFL.EDU)

The screenshot displays the DDIS website interface. At the top, the UF IFAS Extension logo is on the left, and the DDIS logo is on the right. Below the logos is a navigation menu with links for Home, Media Library, Diagnostic Labs, Equipment, Training, and Contact Us. A login section includes a 'Become a User' link, a 'Forgot Your Password' link, and input fields for 'user name' and 'password' with a 'Sign In' button.

The main content area features a photograph of a Florida soft scale insect on a person's hand. To the right of the image, the following information is displayed:

- Sample Types:** Insect (Plant)
- Common Name:** Florida soft scale
- Scientific Name:** *Kylasphecia platana*
- Family:** Saissetiidae
- Sample Submitter:** JoAnn Hoffman
- Sample ID:** 17-1870

Below the image and text is a search bar with the text 'Distance Diagnostic and Identification System (DDIS)' and a 'Search DDIS' button with a 'Go' button. A 'Quick Links' section on the right contains links for 'DDIS Mobile >>', 'Meet Your Diagnosticians >>', 'Latest Post Info >>', and 'DDIS Feedback >>'.

The bottom section of the page contains a paragraph describing the DDIS as a digital diagnostic collaboration and communication platform for UF/IFAS Extension, and another paragraph explaining how the system allows extension agents and specialists to communicate and assess problems, providing management practice recommendations to users.



## What is DDIS?

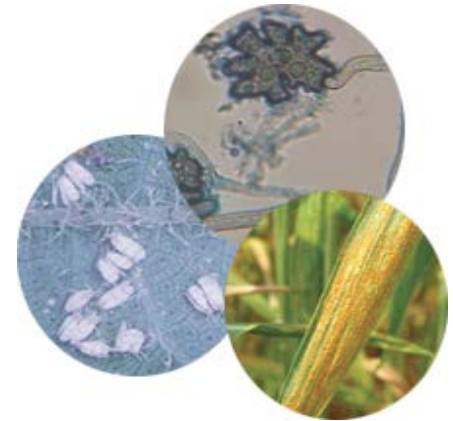
DDIS is a digital diagnostic collaboration and communication platform for UF/IFAS Extension that allows users to share information on plant insects and diseases for quick diagnosis.

# DDIS Provides

- Web-based diagnostic system for Extension agents and their clientele
- Rapid diagnosis of pest and plant problems
- Early detection, monitoring, and mapping of pests
- Effective communication among county agents, extension clients, and experts
- Archived database and image library for research and educational use
- Data network with SPDN/NPDN

# Sample Types

- Plant disease
- Insect (plant, non-plant)
- Plant and weed
- Mushroom/Fungus
- Plant management, physiology and nutrient problems
- Invasive species, livestock



# System Security



- All users are guided the “User Confidentiality Policy.”
- Samples are retracted to authorized users only.

# Main Features

- Easy-to-use role-based user system
- Personalized sample management
- Diagnostic lab management
- Sample security and data confidentiality
- Extensive search functions
- Dynamic pest and sample distribution map
- Sample referral to an external expert or other DDIS specialists
- Pest alert system
- Peer reviewed image/media library



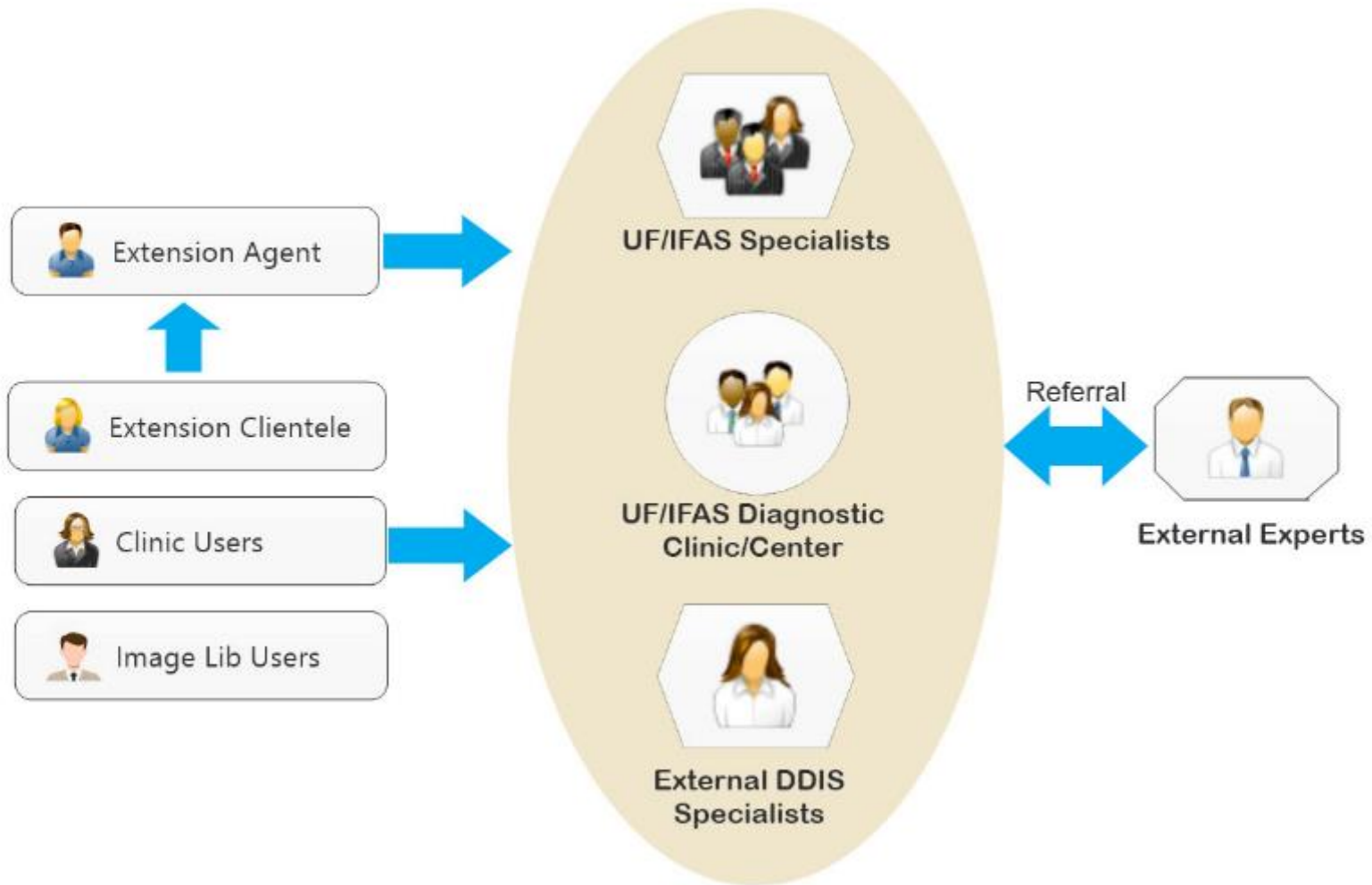
# DDIS Users

- Extension Agents
- Extension Clientele
- Diagnosticians at IFAS Diagnostic Labs/Clinics, Herbarium
- Specialists at IFAS/FDACS and External Specialists through Referral
- Diagnostic Lab/Clinic Customers
- University of Puerto Rico

# User Role

- Sample viewer
- Extension clientele (send samples to county agents)
- Extension agents (sample submitter and forward to clinics and specialists)
- Lab/clinic customer
- Lab diagnostician, lab/clinic director
- UF/IFAS specialists
- External specialists anywhere in the world
- Media library submitter, reviewer and editor
- SPDN/NPDN submitter
- Map viewer
- IT and system manager

# DDIS User Interaction



# Sample of Equipment



# Digital Media Library

**UF** | IFAS Extension  
UNIVERSITY of FLORIDA

**DDIS**  
Distance Diagnostic and Identification System

[Home](#) | [Media Library](#) | [Diagnostic Labs](#) | [Equipment](#) | [Training](#) | [Contact Us](#)

Welcome Jiannong Xin | [My DDIS](#) | [Quick Start](#) | [My Account](#) | [My Role](#) | [Sign Out](#)

[MyDDIS >> Media Library](#)

**Browse All Media**



1 2 3 4 5 Next »

# Summary

- Collaboration environment among Extension agents, Extension clientele, and experts in the network.
- Improve education for extension agents as first detectors to provide first hand service to their clientele.
- Reduce economic lose through early detection of high consequence pests, plant diseases, and invasive species.

# Summary

- Increase the chance of eradication or limited distribution.
- Early screening, monitoring, alerting, and mapping of pests for outbreak response.
- Archived Media database for research and educational use.

# DDIS:

Protecting agriculture  
in Florida and beyond



#### DDIS Provides:

- Web-based diagnostic system
- Rapid diagnosis of plant and animal problems
- Early detection, monitoring, and mapping of pests
- Effective communication among county agents, clients, and experts
- Alerts about high-consequence pests
- Archived database for research and education

[ddis.ifas.ufl.edu](http://ddis.ifas.ufl.edu)

**UF** | **IFAS Extension**  
UNIVERSITY of FLORIDA



**DDIS: Protecting agriculture  
in Florida and beyond.**

[DDIS.IFAS.UFL.EDU](http://DDIS.IFAS.UFL.EDU)