

Using Digital Cameras and the Internet to Identify Plant Insect and Disease Problems

A joint effort by extension agents (coordinated by Larry Halsey and Jim Fletcher), specialists and the faculty of IFAS Information Technologies, a distance diagnostic and identification system was developed to serve the needs for rapid identification and diagnostic services. The system provides a vehicle for electronic submittal of images related to insect, disease and plant identification, plant growth, physiological, nutrition and management to specialists that can provide related identification, diagnosis and recommendations.

In this system, agricultural extension agents and specialists exchange information on plant, insects and diseases. Through these internet-based interactions, agents and specialists can quickly elicit and assess problems. The submitted digital images, field data, and recommendations from specialists are stored in an object database and are archive archived for the uses of training, educational programs, and future research.

Currently, with support from the Dean of Extension, a pilot is being conducted in several counties. However, this project is not limited to those counties, any agent who has a digital camera can participate this project. The intentions are to expand this project to other counties after its completion.

How the system works

From the users viewpoint, the system operates like a sophisticated e-mail system that contains a centralized digital library.

1. Collect digital samples of plant problems.

Digital samples can be collected using a digital camera, stereoscope or microscope equipped with image capture devices.

2. Fill electronic forms and import images into a Java application developed by IT.
3. Submit digital samples to a specialist.

Using e-mail addresses, the user submits the data and images to the specialist. They are stored in an object database on a server hosted at IT. An automated e-mail notification is sent to the specialist, he or she can retrieve the digital samples from the server. Once the plant problems are identified, results are resubmitted to the server, and the sending agent is automatically notified through e-mail that identification has been made.

- 4) After Notification of ID is receive, the agent can retrieve the data through the Internet.

More information about this project at <http://ddis.ifas.ufl.edu>

Prepared by Jiannong Xin

Edited by F.S. Zazueta

4/15/99