Development of Decision Information Systems for Florida Citrus
FCPRAC Project No. 971-55

Length of Project: 2 years

Investigators:
J. David Martsolf, Robert M. Peart, Howard W. Beck, Fedro S. Zazueta, Jim W. Jones, John K. Schueller and James J. Ferguson
University of Florida, Gainesville
and
L. Gene Albrigo, William S. Castle, Ronald P. Muraro, and T. Adair Wheaton
Citrus Research and Education Center, IFAS, University of Florida, Lake Alfred

Progress Report for FY 97-98

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Abstract

Making decisions about the best production practices, their timing and integration of options, has become very complex. Growers can use help-guides to effectively consider all of the options. Expert systems tied together on the basis of vegetative and fruit development stage can help to clarify and suggest timely options, provide production practices record keeping and free up time for other management decisions. Several units for the eventual integrated decision support system for citrus were developed to the stage of functioning prototypes during this first year of work.

Objectives

1. Develop and demonstrate a Preplant (rootstock selection) Decision System.
2. Develop and demonstrate a Melanose and Greasy Spot Control Decision System.
3. Develop a framework for the determination of timing and options among production practices in relation to citrus growth events to facilitate management decisions.
4. Develop a tree size and yield diagnostic system to be used as a baseline for comparing tree growth and yield.
5. Integrate these various applications within a user-friendly operating system.
6. Collaborate in the production of DISC CD-ROM Version 1.0 using graphics design to improve the interface.

Summary of Accomplishments

First or second versions of a preplant decision module for rootstock selection and a Cu residue decay system for disease control were developed. These will be ready for grower testing this coming year. A prototype for the production decision framework based on stages of vegetative and reproductive growth was developed. It includes components of tree development, production practices and will integrate climatic effects on time of bloom and flowering intensity. The prototype can operate by grove and block for record keeping and brings in GPS mapping. This prototype should be ready for testing by the end of the second year. Several growers are cooperating in the integration of production practices, appropriate record keeping and user-friendly requirements. Data collection for the tree size and yield graphs by rootstock, scion, age and district is underway. Version 1.0 of a CD-ROM has been printed, but more work is necessary prior to full release.

Funding Summary

FCPRAC Grants	$ 35,000.00
Agency* Contributions	$ 41,000.00
Grower Contributions-Time	$ 10,000.00
Other Grants	$ 000.00
Total	$ 86,000.00

· Ten percent of 1 faculty, five percent of 3 faculty and 1 percent of 4 faculty members plus 5 percent of 4 growers time. Other infrastructure support was supplied at two locations of the University of Florida.

Related Publications

(see attached)

Publications Attached

Beck, H. W. 1997. Decision Information System for Citrus. FACTS Citrus and Vegetable Proceedings, Prog 109:11-13.

Martsolf, J. D. 1998. Acquiring weather information via a decision making system (DISC). Proc. Fla. State Hort. Soc. 1997 110:92-98.

Spyke, P. and J.D. Martsolf. 1998. DISC making strides toward precision agriculture. Citrus Industry 79(20):32,34.

Townsend, C. 1996. Homepage for DISC on following WebSite. http://members.aol.com/chettown/disc/disc.html