

TOOLS TO ADDRESS CURRENT IRRIGATION MANAGEMENT CHALLENGES IN CITRUS PRODUCTION

Sandra M. Guzmán

University of Florida, Indian River Research and Education Center (IRREC), Fort Pierce, FL, USA

The use of sensor-based technologies and smart apps has proven to provide significant water use efficiency increments for crop production. However, the rate of irrigation technology adoption is still low if we consider the advantages of these technologies and the incentives available for their implementation. Some of the barriers in irrigation technology adoption include 1) lack of understanding of the data collected and the reliability of these technologies for irrigation management, 2) lack of centralized decision support systems (DSS) that incorporate multiple sources of data and multiple sensor brands, and 3) low flexibility to incorporate outdated and new technologies in an intuitive DSS. To solve some of the abovementioned issues and barriers we developed CropMonitor, an Internet of Things (IoT) based DSS for citrus irrigation scheduling. CropMonitor was initially designed for growers without telemetry systems and growers with outdated sensors and computing systems. Currently, we have growers with both outdated and new sensor systems as users of the DSS. Centralized DSS's such as CropMonitor allows the visualization of multiple sources of data related to irrigation management including soil moisture, weather data, sap flow, and others. This DSS is currently being tested by citrus growers across southeast and southwest FL. Future developments include the incorporation of AI to generate recommendations and forecasts based on the multiple sources of irrigation and water management data collected.

PRESENTER BIO: Dr. Guzman is an assistant professor in the department of agricultural and biological engineering at the University of Florida. Located in Fort Pierce FL, her research and extension programs focus on the development of programs for the use of in-field sensor data for water management, development of decision support systems for irrigation, hydrological processes, and Best Management Practices (BMPs) evaluation.