

FLORIDA AGRICULTURAL SOIL MOISTURE SENSOR NETWORK

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Increasing competition for freshwater resources from urban development, tourism, energy, and agricultural sectors combined with climatic variability, have raised the water quantity and quality issues in the southeastern US. This is a particular concern for the state of Florida, which is a major region for high-value crops grown on sandy soils with low water-holding capacities and is heavily dependent on irrigation. These water quantity and quality challenges have led to scrutiny of groundwater by the state and local governments, leading to new regulatory approaches, best management practices (BMPs), and ground and surface water policies. Soil moisture is an important factor used in irrigated agriculture to make decisions regarding irrigation scheduling. With accurate monitoring of soil moisture, producers can avoid both excessive and insufficient irrigation that leads to reduced yield quantity and quality, increased runoff, erosion, leaching of nutrients, and other problems. To this end, the Florida Agricultural Soil Moisture Sensor Network was formed in 2018 from an interdisciplinary team of partners. The main goal of this network is to educate producers, extension agents and to work with state agencies to increase producer adoption of soil moisture sensors through a series of demonstration projects in producers' fields throughout the state to conserve water. The project facilitates in-depth, one-on-one educational opportunities between agents and growers about this beneficial and cost-saving technology. Currently, approximately 63 soil moisture sensors (SMS) are installed in 18 Florida Counties in different crop production systems. The network is bringing cultural and behavioral changes in technology implementation as a result of improving irrigation management. In addition, the project demonstrates effective irrigation management strategies by monitoring irrigation water supply, and soil moisture, which will conserve water and enhance crop water and nutrient use efficiencies.

PRESENTER BIO: Dr. Vivek Sharma is an Assistant Professor in the Agricultural and Biological Engineering Department at the University of Florida. His research and extension program addresses the application and development of precision agricultural water management technologies and strategies to enhance water-use efficiency while reducing the impacts of agricultural management practices on water quality.