Advanced Irrigation Management on North Florida Farms

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North Florida’s Lower Suwannee River Basin (SRB) is a major field crop production area, particularly for corn and peanuts. Supplemental watering is required to achieve maximum economic production due to sandy, porous soils. More than 32,000 acres of agricultural land in the basin have been fitted with overhead irrigation systems to meet water demand and achieve economic optimum production. The Suwannee River Water Management District reports that on average, production agriculture withdraws 180 million gallons of ground water per day. More than 2000 center pivot irrigation systems in the SRB account for most of this consumption.

Agriculture is facing increasing pressure from citizens and regulators to show efficient use of water resources. Continuously measuring soil moisture and climate data using current, affordable technology are an excellent method to optimize irrigation management for water conservation and economic optimum management. Recording systems are automated and relatively maintenance-free (Fig. 1). However, gaps exist in both technical and agronomic knowledge which reduces on-farm implementation of this technology.

The objectives of this project are to: 1) assemble the equipment and education into a package that can be readily adopted by producers; 2) deliver this package to producers in the region and help them integrate it into their production system; and 3) demonstrate groundwater withdrawal reductions realized from this program.

Farmers willingly adopted and utilized the technology. One farmer reported eliminating four 1" irrigation events on 180 acres. This resulted in water savings of 19 million gallons and reduced pumping cost by about $5,000.

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Fig. 1. Automatic solar-powered soil moisture and climate data logger.