Research Breakthrough finds in-ground MOISTURE SENSORS DO WORK

By Doug Bailey

For almost 40 years, attempts at saving water by measuring moisture in the root zones to operate irrigation systems have met with cold shoulders. Each time the public would embrace these new systems; they were met with deep disappointment. But in the past five years, research has begun to prove their solid and measurable success. At the University of Florida, a study conducted by Dr. Michael Dukes showed water savings between 40-80% over a traditional timer in local soils. Independent test data from the Center for Irrigation Technology determined highly accurate absolute readings of soil moisture sensors under all conditions of temperature and soil chemistry where crops will grow. At Utah State University, a test was conducted on the responsiveness of sensors in non-conducting and conducting soils, which concluded that true accuracy could be found in a low cost sensor device.

This year, irrigation controllers designed with sensors were put to the test as a part of a pilot program in the community of Lake Jovita. As a result of a Pasco County ordinance amendment that went into effect in September 2006, developers were offered a modest

incentive. Up until the time of the amended ordinance, Pasco County restricted watering of total turf and landscaped area to 50 percent. The amendment offers an alternative choice that increases that area to 65 percent with the condition that an approved in-ground soil moisture sensor be installed to the system which automatically eliminates over and under watering. Every home in the Lake Jovita development was specially fit with sensor technology. The data recorded at Lake Jovita shows to be an efficient water use community. Irrigation contractors in Pasco County have brought this to the attention of existing homeowners seeking to increase irrigated turf grass. As an added bonus, watering bills are noticeably lower.

Chris Dewey, Developer Outreach Coordinator for the Florida Yards and Neighborhoods program, is an advocate of water conservation. He says developers are building greener because it makes good business sense and they know the water shortage will only get worse as the area grows. He sees the model implemented in Pasco as a springboard for other extension services and how they define their approach to water savings. In Manatee County, rebates of up to $250 are offered to homeowners who install certain types of soil sensors. In most cases, this is enough reimbursement to pay for the entire system.

Scott Anderson, Chairman of Acclima, a manufacturer of sensor technology based in Idaho, says that we have come a long way to provide low cost durable soil moisture sensors that are stable and effective in all soil types. Anderson relies heavily on independent research to validate irrigation control based on moisture readings taken in the root zone of the turf. He adds that the installation time and setup complexity have been dramatically reduced. Controlling irrigation through stable soil moisture sensors not only saves water and fertilizer but also improves turf quality and appearance.

"All of the flaws traditionally found in years past have been overcome and the research is there to prove it," he remarks.

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In many areas of the country, especially Florida, water conservation is no longer taking a back seat when irrigating lawns. With irrigation historically representing almost 70 percent of the water bill, there is an urgent need to find solutions that create a balance between landscape beauty and responsible watering. From this point forward, irrigation systems based on accurate, stable soil moisture sensors will provide measurable relief from this ever-growing problem.