



Water Conservation Potential of Smart Irrigation Controllers

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Irrigation is a Standard “Appliance”



Improper Design & Installation: Improper Coverage





SMART WATER APPLICATION TECHNOLOGY (SWAT)

What is Smart Water Application Technology (SWAT)?

- SWAT → Irrigation technologies designed to conserve water
- SWAT concept created approx. 2001 by Irrigation Association (IA) & water purveyors
- Technologies
 - Soil moisture sensor (SMS) controllers
 - Evapotranspiration (ET) controllers
 - Rain sensors (RS)

Smart Water Application Technologies (SWAT)



Evapotranspiration (ET) based controllers

Soil moisture sensor (SMS) controllers



Irrigation controllers that respond to conditions in the irrigated system to automatically adjust to plant needs

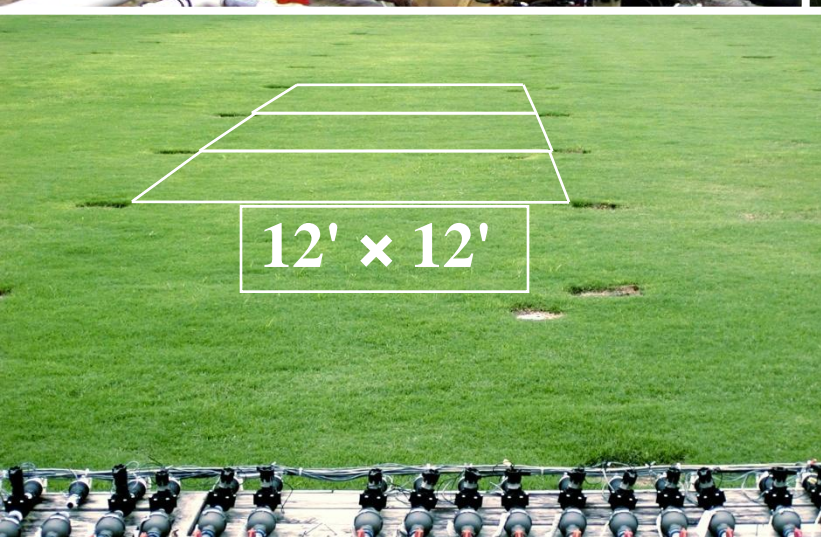
Rain sensors (RS)



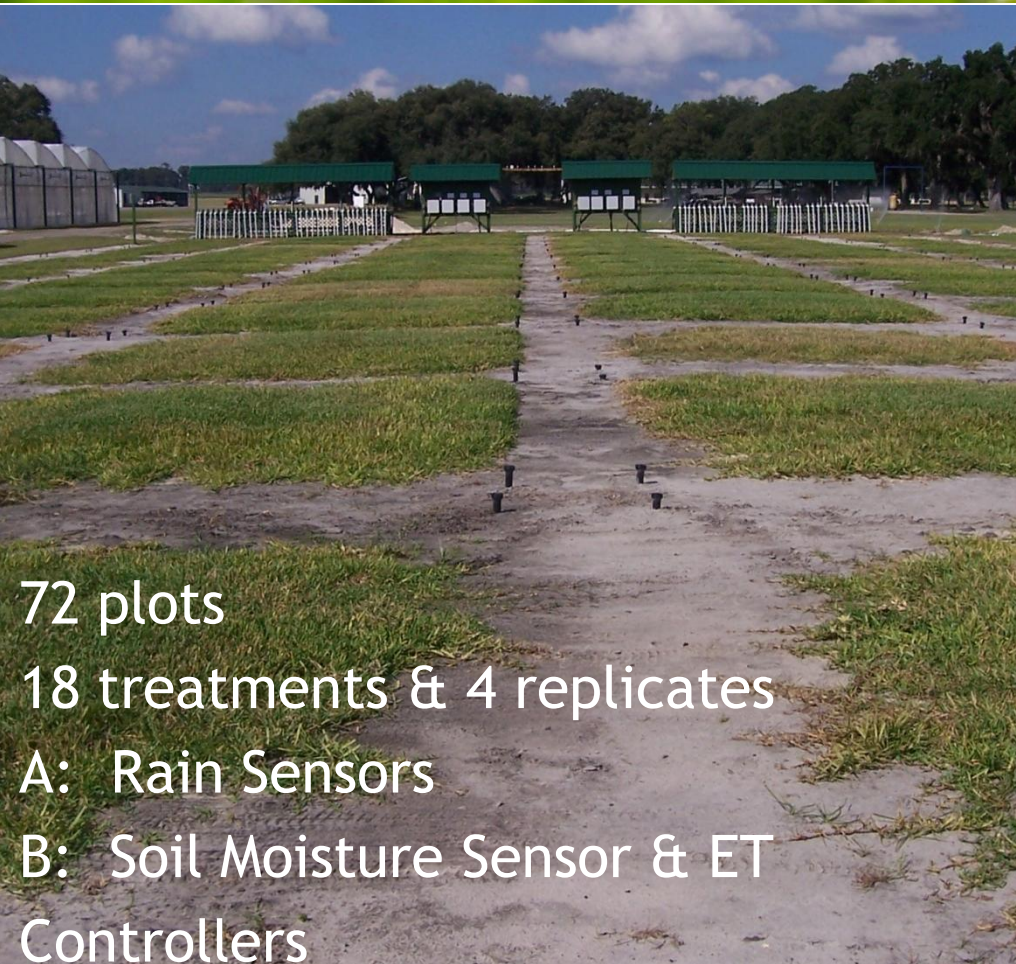


SMS CONTROLLER TESTING ON PLOTS

Research (2004 - 2008)



SMS/ET Controllers 2006-08, Drought Conditions



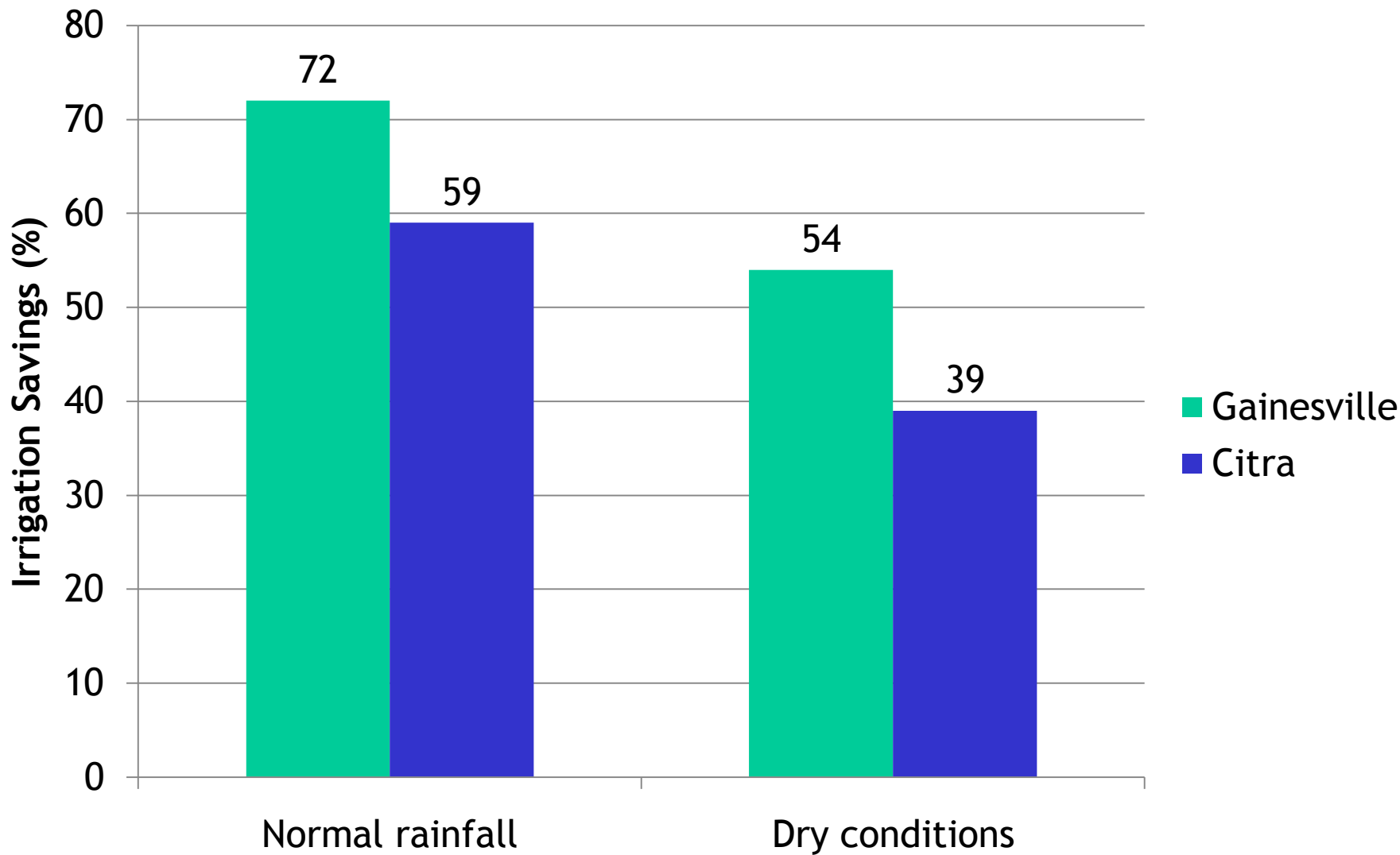
72 plots
18 treatments & 4 replicates
A: Rain Sensors
B: Soil Moisture Sensor & ET
Controllers

Photo May 2006, M.L. Shedd

St. Augustinegrass
testing ongoing since
March 2006



Irrigation Savings Compared to a Time Schedule No Rain Sensor





SMS TESTING ON COOPERATING HOMES, PINELLAS CO.

Treatments

- SMS, Current irrigation system **without** rain sensor and **with** a soil moisture sensor controller



- EDU+RS, Current irrigation system **with** rain sensor & seasonal run time guidelines



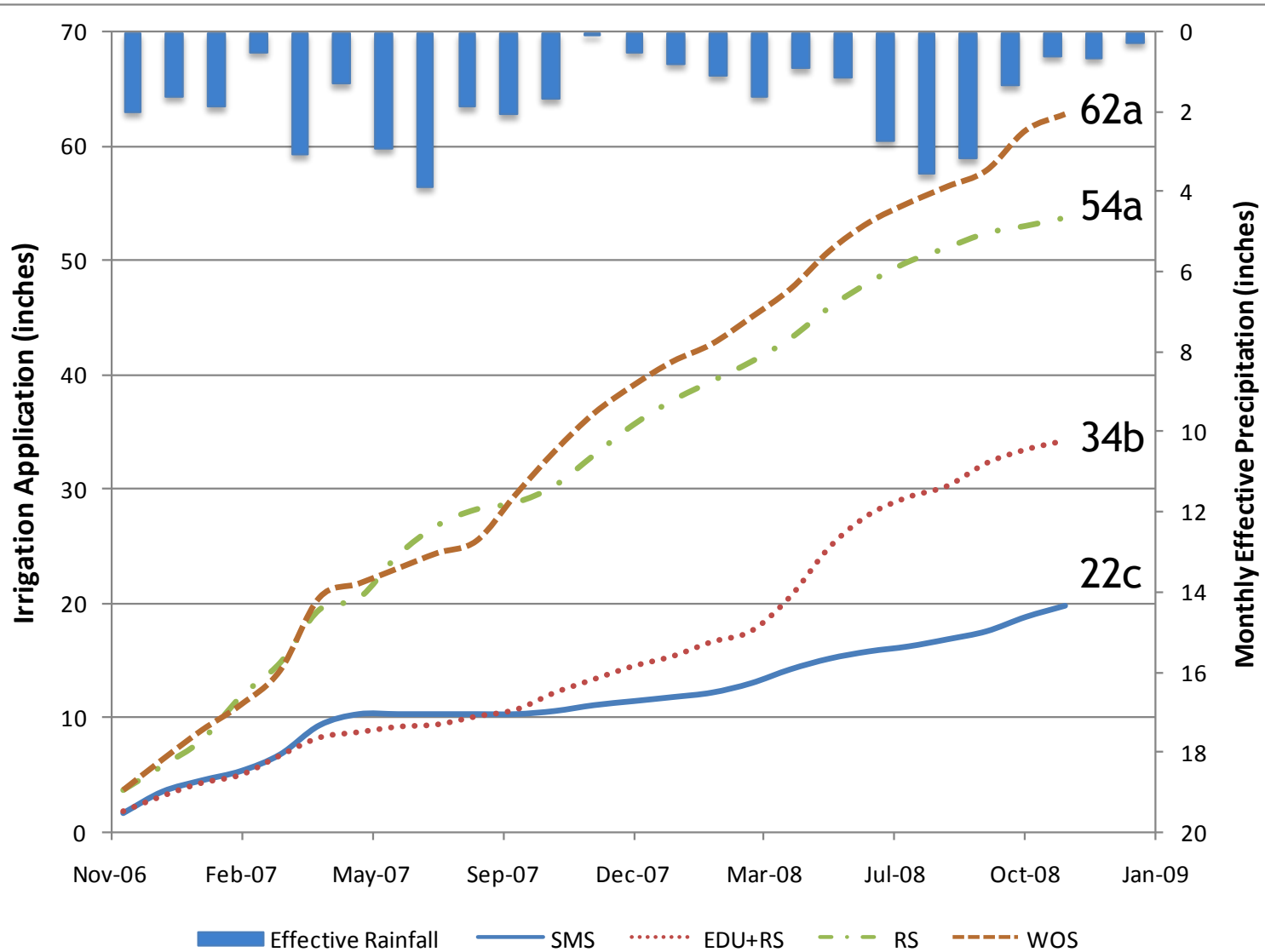
- RS, Current irrigation system **with** rain sensor



- WOS, Current irrigation system **without** a sensor

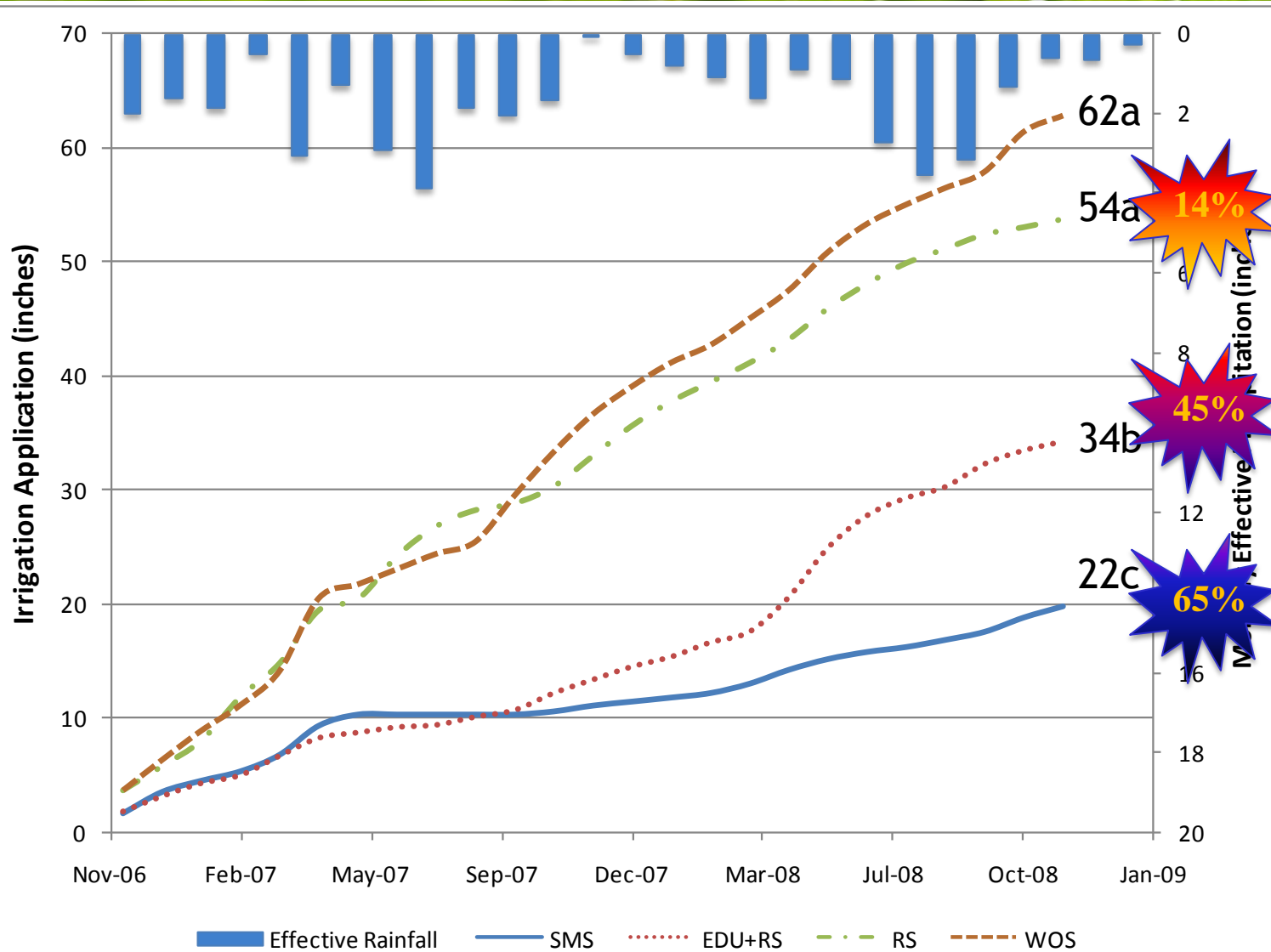


Pinellas County Homes, Irrigation Nov 06 - Dec 08



Pinellas County Homes, Irrigation Savings

Nov 06 - Dec 08



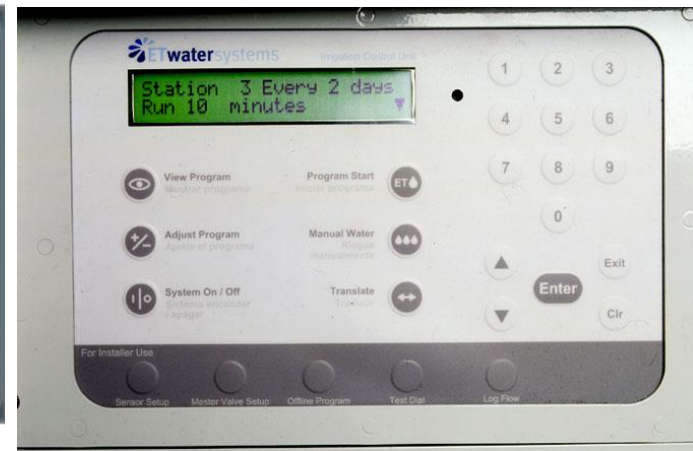
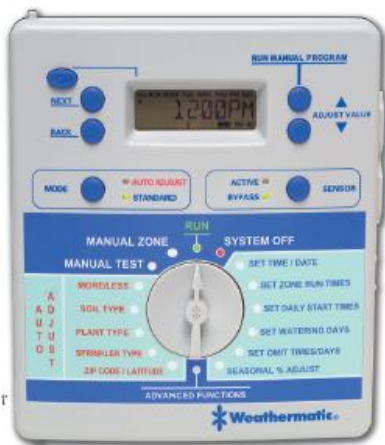


ET CONTROLLER TESTING, HILLSBOROUGH CO.

ET Controller Study

GCREC Hillsborough County

- Three ET controllers:
 - ◆ Weathermatic, Smartline SL800
 - ◆ Toro, Intellisense TIS-6120D
 - ◆ ETwater, Smart Controller 100
- Timeclock with RS
- Reduced timeclock schedule with RS



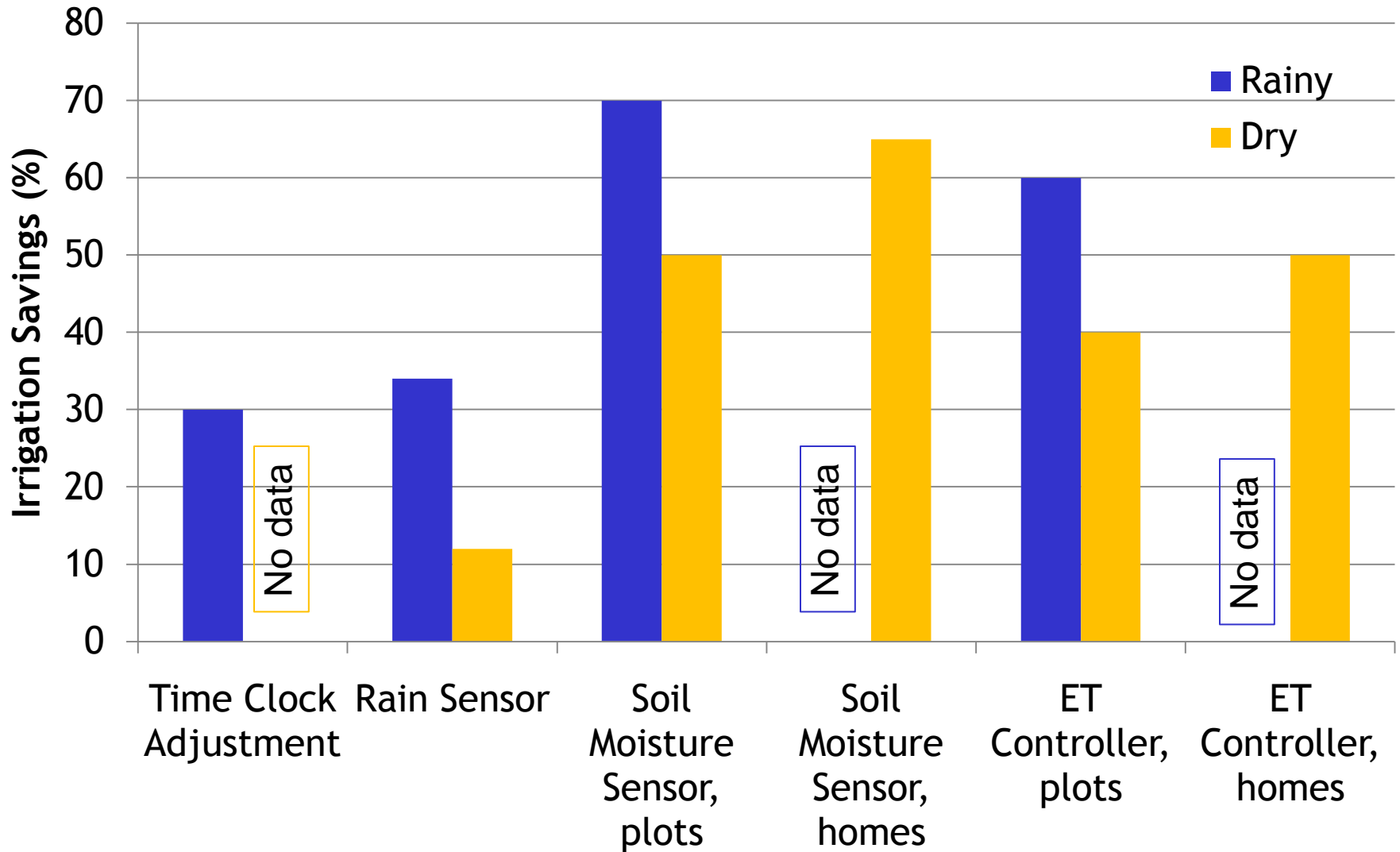
But will ET controllers work in the real world?!



- 38 residential cooperators in Hillsborough Co.
 - 21 homes have an ET controller
 - 17 homes are a comparison group

• All volunteers are moderate to high water users

Irrigation Savings Potential



Next Steps....

- Applying the technology
 - ◆ Targeting users with potential savings
 - ◆ Building public awareness
 - ◆ Education of contractors for proper installation
 - ◆ Verification of savings over time
- Apply to reclaim irrigation to stretch increasingly limited supplies

Thank you!

Southwest Florida Water Management District, Pinellas Co. Utilities, Hillsborough Co. Water Dept., Florida Department of Agriculture and Consumer Services, Florida Nursery Growers and Landscape Assoc., Florida Turfgrass Assoc., Florida Sod Growers Co-op.

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