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California Energy Commission

Efficiency Committee Workshop

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Irrigation Equipment

- Controllers
- Moisture Sensors
- Emission Devices
- Valves
- Rain Sensors

Irrigation Controllers

- “Smart” Controllers vs. “Dumb” Timers
- Weather Based (Smart) Controllers
 - Save Water
 - Reduce Runoff
- Difficult to Program?

Smart Controller Problems

- All irrigation systems have weak areas
- Weather Based controllers water correctly, weak spots appear as dry (hot) spots
- First response is to blame technology
- Irrigation system problems
 - Turn the water up
 - Economics
 - Cost of Water
 - Runoff Regulations

Smart Controller Benefits

- Clock and Calendar programming
- Program site conditions, not time
- Automatic Et adjustments
- Demand Irrigation
- Save 25% when programmed correctly
- Proper programming requires a close inspection of landscape
- Automatically introduce multiple run times
- Human element

Soil Moisture Sensors

- Measure Soil Moisture
- Suspends irrigation when soil moisture is above pre-determined range
- SWAT is currently developing protocols
 - 3 manufacturers currently participating
- Makes a Controller “Smart” by automatically altering program
- Useful as stand alone or chronic wet areas

Rain Sensor

- Effectively interrupts irrigation during measurable rain events
- Easy installation and activation
- Proven water savings
- Politically correct

Valves

- Many types, styles, and manufacturers
 - Master Valve
 - Remote Control Valve – flow and pressure
 - Anti-Drain Valves
- All Save Water

Emission Devices

- Many types and styles
- Application/Precipitation rates
 - Gpm (gph)
 - Inches per hour (in/hr)
- All Emitters (Heads) have a use

Comparison

- Rotors 1"/hr
- Spray Heads 1.7"/hr
- Rotating Heads 0.5 "/hr
- Drip Emitters (1gph) 1.6"/hr
- One type does not fit all applications

Conclusions

- Weather Based Controllers are not the “Silver Bullet” but are central to landscape water conservation
- Proper installation and programming of Smart controllers should yield 25% savings
- Irrigation technology is constantly improving

- Component selection should be left to Landscape and Irrigation experts
- Emission device selection should not be legislated
- SWAT should be the first reference for recommendation
- The Human factor in conservation

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