

Recent rains are no reason to forget about smart irrigation

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“Smart” Irrigation controllers get smarter

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COLLEGE STATION – Just because you received rain in July there’s no excuse for being dumb about watering your lawn, according to a Texas A&M AgriLife Extension Service expert.



July in Texas is usually one of the cruelest months when it comes to rain, but this July was

unseasonably wet, said Charles Swanson, AgriLife Extension irrigation specialist, College Station.

Despite the rain greening up lawns and landscapes, and replenishing lakes and reservoirs, most of Texas still remains under drought conditions, and staying smart about home irrigation remains a good idea, both financially and environmentally, Swanson said.



Charles Swanson, Texas A&M AgriLife Extension Service irrigation specialist, checks the setups of the many smart irrigation controllers at a College Station test site. (Texas A&M AgriLife Extension Service photo)

And Swanson and his colleague, Dr. Guy Fipps, AgriLife Extension irrigation engineer, College Station, have just the prescription for smart irrigation: electronically “smart” irrigation controllers.

Smart controllers — also referred to as evapotranspiration or ET controllers — use weather data to calculate and automatically apply the right amount of water needed by landscape plants, Swanson said.

Studies have shown, Swanson said, that homeowners typically over water their lawns by 20 to 50 percent. Not only is this wasteful of a limited natural resource, it’s often not good for the lawn. By taking into account such factors as humidity, rainfall, heat and solar radiation, smart controllers turn on irrigation systems for the correct amount of time to apply only what the home landscape needs. Some controllers can also take into account the particular kind of turf or other landscape plants.

Conventional irrigation controllers are simply timed, and rely on the user to determine how much and how often to irrigate, often resulting in applying excessive amounts, Swanson said.

“We have learned a lot about ET controllers over the last five years,” he said. “We began our first year of evaluation with five products that were readily available in Texas. In 2012 we tested nine controllers, with an additional 10th controller being added to our 2013 evaluation. Word spread with each year’s report across the country, and additional manufacturers started contacting us, wanting to be included.”

Current manufacturers participating in the study are Hunter, Rainbird, Weatherset, Toro, Irritrol, Weathermatic, ET Water and Irrisoft, Swanson said.

Swanson also noted that the performance of smart controllers has improved a great deal since he and Fipps started testing them in 2006 as part of a user survey in San Antonio.

Early models often applied too much water or, during a drought, not enough. But manufacturers listened, and have been making regular upgrades to controller programming and sensors.

“This past year’s results are really exciting because we had our first controller pass during the summer period,” Swanson said. “The testing period was divided into summer and fall evaluation periods. For controllers to pass the AgriLife test, they must be within 20 percent of the irrigation recommendations of the [TexasET Network](#) for all evaluation periods.”

The [TexasET Network](#) displays weather information such as current and average evapotranspiration data, and provides irrigation watering recommendations for numerous locations around the state. The network’s website is at <http://texaset.tamu.edu/>.

“This year we had no controller inadequacies as the majority of controllers were able to supply adequate amounts,” Swanson said. “However we continue to see some controllers have tendencies to over irrigate or apply excessive amounts.”

There are two main reasons for controllers failing: improper data acquisition or insufficient accounting for rainfall, according to Swanson.

“Some controllers actually have their own weather sensors to calculate evapotranspiration onsite,” he said. “Others use a pager to collect weather data from a local public weather station, such as at an airport or research facility.”

Generally, in the AgriLife Extension tests, the sensor-equipped smart controllers were more reliable than the pager-based controllers, Swanson said. But there was a wide range of performance among the sensor-based controllers too.

Swanson and Fipps said they are not ready to make specific product recommendations at this time. However, the U.S. EPA has listed eight manufacturers and 125 models of controllers that have passed their tests and been given the agency’s “WaterSense” label. That list may be found online at <http://1.usa.gov/17TWeuQ>.

Swanson said to take the WaterSense list — which is basically “pass/fail” — with a grain of salt.

“The worst performing controller in our tests has a WaterSense label, while our best performing controller to date is not even listed,” he said.

All five years of the AgriLife Extension test data may be found at <http://itc.tamu.edu/smart.php>.

He and Fipps will complete the sixth year of tests this winter, he said.

