Online calculator helps homeowners preserve lawns while saving water

View all articles by Robert Burns →

August 8, 2011

COLLEGE STATION – Drought or no drought, homeowners typically overwater their lawns, according to a Texas AgriLife Extension Service irrigation engineer.

It's an expensive practice anytime, but during an extended drought, it's particularly wasteful "and may lead to further water-use restrictions by communities if done by everyone, which is often the case," said Dr. Guy Fipps, AgriLife Extension irrigation engineer.

Moreover, it's unnecessary as there is an online calculator that will allow Texas homeowners to apply within a tenth of an inch of exactly the amount their turf grass needs, said Fipps, who is also the director of the Irrigation Technology Center at the Texas A&M University College Station campus.

Dr. Guy Fipps, Texas AgriLife Extension Service irrigation engineer, holds an Aggie Catch Can in his left hand. The device is used to accurately measure the amount of water a sprinkler irrigation system applies in a given amount of time. In his other hand, Fipps holds a special rain gauge available from some water utility companies designed to do the same thing. (Texas AgriLife Extension Service photo by Jose Lopez)

"I guess a lot of people don't know this sort of information and tools exist," he said.

There is also a lot of misinformation circulating about, Fipps said.

"Look at garden sections in newspapers and elsewhere, you'll typically see recommendations like water 1 inch to 2 inches a week, or that you should water infrequently and deeply — vague concepts like that," he said.

There are lots of reasons such an approach isn't appropriate, Fipps said. One reason is climatic variation.

"For example, this year we are having a very hot and dry summer, and water requirements are 30 percent to 50 percent higher than they would be in a more normal year," he said.

In reality, the amount of irrigation a given variety of turf grass needs at any time depends upon many factors, such as temperature, humidity levels, wind, solar radiation and, of course, recent rainfall, if any, he said.

"The way you determine how much water grass actually needs is a fairly complex process, but fortunately, we have this website that does all that for you," he said. "All you need to do is put in a little info about your location, the type of grass you're growing, and what your goal is."

Personal goals vary, he said. Some people don't worry about the expense of watering and want a lawn as green as a golf course even during the drought. Others may want to strike a balance with the amount of water they apply, just wanting "pretty decent" turf quality. Others may want to conserve water and economize during drought restrictions and put on just enough water to keep the turf alive, he said.

“This choice greatly affects the amount of water you use and will double or triple the amount of irrigation water (in most parts of the state) from about 0.6 to 1.7 inches a week during August, and in West Texas from 0.9 to 2.2 inches a week,” Fipps said.

To use the online-calculator tool, go to the TexasET Network website at http://texaset.tamu.edu/.

The calculations are based on current weather data from nearly 30 automated scientific weather stations located throughout the state. Users must first pick one of these weather stations either from a drop-down menu or by simply clicking on the nearest one to them on the webpage’s Texas map.

They then must click on one of three buttons: “home watering,” “turf/landscape irrigation” or “crop irrigation.”

Beginners should choose “home watering,” Fipps noted.

“But once they are familiar with how it works, they should move to the turf/landscape calculator as it provides more options to customize recommendations for their grass and includes other plants as well,” he said.

From there on, it’s a matter of choosing the type of grass in the lawn, whether it’s in full sunlight or partial shade, and the amount of rainfall received in the last week.

The next decision is how long to irrigate. The parameter, “sprinkler precipitation rate” in inches per hour may give some homeowners some pause, but it’s easy to figure the rate, Fipps said.

“One simply puts out containers and run the irrigation system for a specified amount of time, usually 10 to 30 minutes,” he said. “Everything from tuna cans to cups are often used, but the results must be converted to inches of water applied over the area per unit of time.”

To make the process easier, Fipps designed the Aggie Catch Can. The catch can is cone-shaped and has graduated markings in both inches and millimeters to take the guesswork out of measuring, he said.

The Aggie Catch Can Homeowner Kit is available on the AgriLife Bookstore at https://agrilifebookstore.org . The kit includes five catch cans, stands and an instruction sheet for $18. (Texas AgriLife Extension Service photo by Dr. Charles Swanson)

Aggie Catch Cans may be purchased as a kit on the AgriLife online bookstore at http://agrilifebookstore.org. For the Homeowner Kit, search for item number SP-424. Each kit comes with five cans and stands, as well as an instruction sheet, and costs $18.

“Unlike tuna cans, catch volumes may be read directly without the need for rulers or graduated cylinders,” Fipps said.

-30-