How to use the Simple Irrigation Planner

sip.mesonet.org

article revised September 2014

Introduction

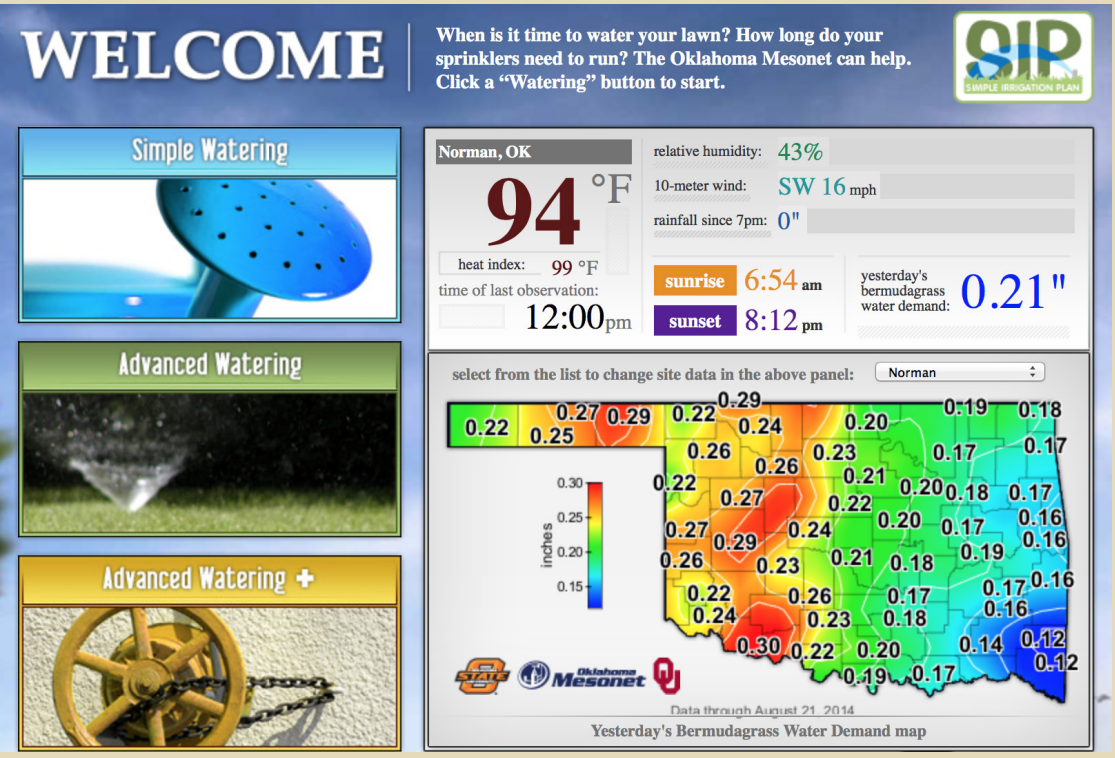
When should I start my sprinkler? How long should I run it? These are the two simple questions that SIP was created to answer.

SIP is the acronym for “Simple Irrigation Plan.” The Simple Irrigation Plan (sip.mesonet.org) uses data from the Oklahoma Mesonet to scientifically estimate lawn grass water use, compare lawn water demand to recent rainfall, and calculate a sprinkler runtime. This takes the “guesswork” out of when and how long to water a lawn.

Water is a precious resource. A resource that has been inexpensive in the past. Today, more people are concerned about how best to utilize water and the increasing cost of water and sewer utilities. SIP is an online tool that can improve water use efficiency. Just as important as knowing when to water, SIP can tell a person when not to water.

Simple Irrigation Planner

SIP compares water demand for bermudagrass, zoysiagrass or tall fescue to recent rainfall to calculate the need for and the amount of water needed. By subtracting rainfall from lawn water use, SIP provides an estimate of the current lawn water balance. The water balance is updated daily in the early morning hours after midnight.



After a sprinkler is selected, SIP calculates a sprinkler runtime. You can select from a variety of hose-end sprinklers or automatic sprinkler types. This sprinkler runtime is the minutes the selected sprinkler needs to run to replace water used by grass lawns above what has been supplied from recent rainfall. If no irrigation is needed, the runtime will be zero.

SIP uses weather data from the Oklahoma Mesonet to estimate the water used by lawn grasses in Oklahoma. With 120 Mesonet sites, most Oklahomans will find a Mesonet site within 15 miles of where they live.

A watering Cost Calculator is included on the SIP results webpage. You can estimate what it costs to water a lawn for the time range shown. The SIP Cost Calculator includes both water and sewer rates from the most recent Oklahoma Municipal Utility Survey or city website.

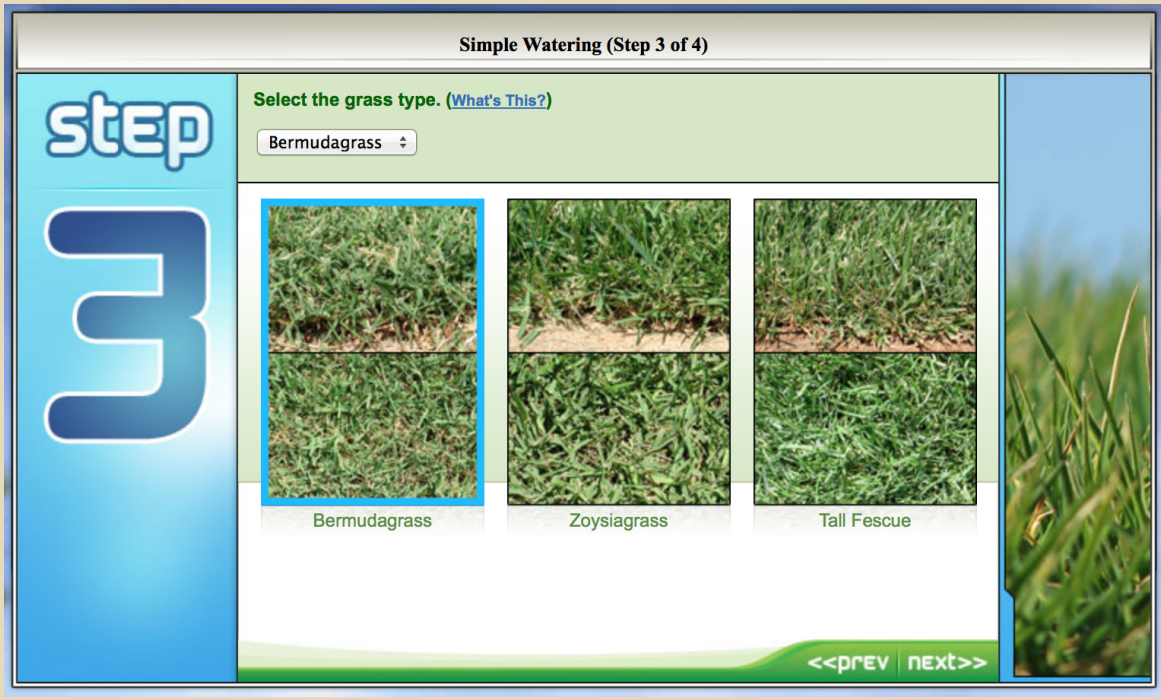
Mesonet

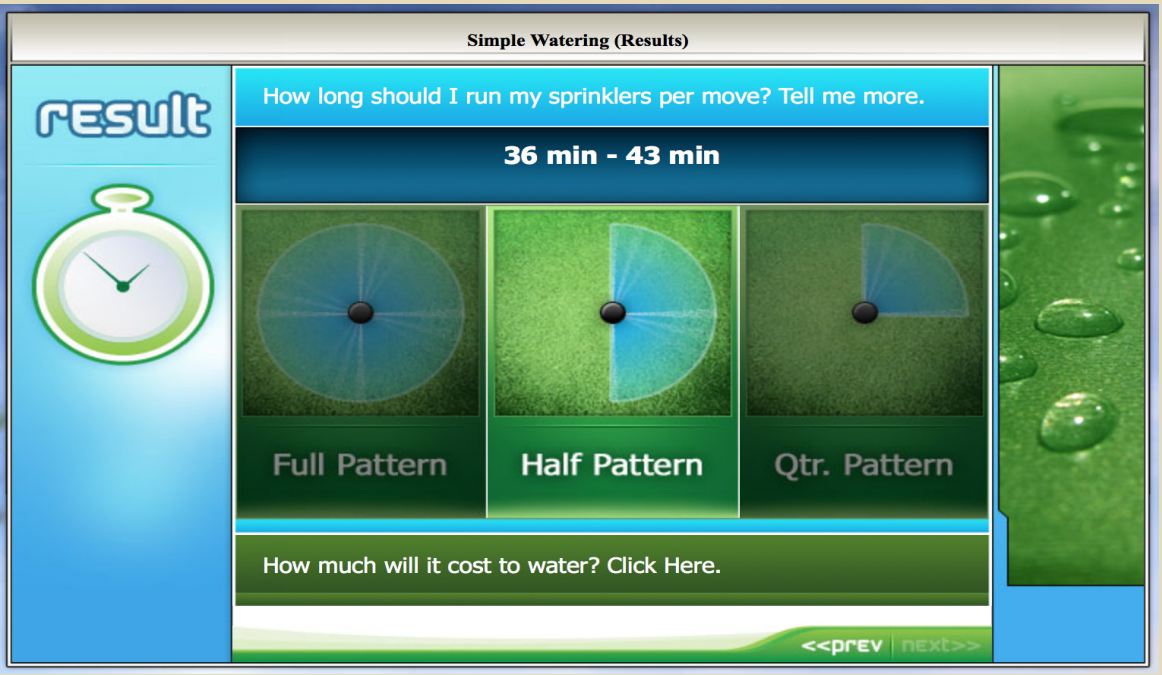
Evapotranspiration Rates

SIP uses evapotranspiration science to convert weather data into sprinkler runtimes. Evapotranspiration is a calculated estimate of the water that evaporates from the soil surface and water that plants give off through their leaves, known as transpiration. “Evapo-” from evaporation and “transpiration” are combined to create the term, evapotranspiration.

The daily evapotranspiration rate is an estimate of the inches of water used each day. Daily evapotranspiration rates are added together to estimate a cumulative water loss over a given number of days. This water loss is the inches of water needed to maintain healthy plant growth.

Daily evapotranspiration rates are calculated from air temperature, relative humidity, wind speed, sunlight and air pressure.





Evapotranspiration rates are the potential water loss and vary from the actual water loss when plants are under water stress.

Each plant type has its own unique evapotranspiration rate. For example, tall fescue uses more water per day than bermudagrass, so the daily evapotranspiration rate for tall fescue will be higher than bermudagrass under the same weather conditions. Zoysiagrass needs more water than bermudagrass, but less than tall fescue.

Using evapotranspiration to schedule turfgrass watering can improve water use efficiency and plant health. It is a tool that will make water management more efficient by calculating how much water is needed since the last rainfall or irrigation.

Our Story

The Oklahoma Mesonet is a world-class network of environmental monitoring stations. The network was designed and implemented by scientists at the University of Oklahoma (OU) and at Oklahoma State University (OSU).

The Oklahoma Mesonet consists of 120 automated stations covering Oklahoma. There is at least one Mesonet station in each of Oklahoma’s 77 counties.

At each site, the environment is measured by a set of instruments located on or near a 10-meter-tall tower. The measurements are packaged into “observations” every 5 minutes, then the observations are transmitted to a central facility every 5 minutes, 24 hours per day year-round.

For help with this or other Mesonet products, please call 405-325-3231, or email us at operator@mesonet.org.

Mesonet
Oklahoma’s Weather Network