Welcome to our Zoom Webinar Series
Watering Wisdom: Growing a Healthy Lawn with Less Water

Part 2: Learning to Control Your Irrigation Controller
The webinar will begin shortly
Future Webinars

• **Turfgrass Species for Low-Input Minnesota Lawns**
  Tuesday, August 18, 2020 at 2:00 p.m.

• **Lawn Care Best Management Practices**
  Tuesday, September 8, 2020 at 2:00 p.m.

• **Winterizing Your Lawn**
  September 29, 2020 at 2:00 p.m.
Using Zoom

- Use Q&A to ask questions
  - Mouse over bottom of Zoom window to access Q&A
- Chat is disabled
- Live transcript can be turned off depending on device
Watering Wisdom: Growing a Healthy Lawn with Less Water

Learning to Control Your Irrigation Controller

Presenter: Shane Evans
Overview

• Introduction to irrigation

• How to program an irrigation controller

• Technologies that make your controller more efficient

• What research says about these controller technologies
Irrigation History

One Hole Sprinkler
1899

Gear Drive Sprinkler
1913
Irrigation History
Irrigation History

Moody Rainmaster 1950

Moody Rainmaster 1960
What is an Irrigation Controller?

Automatically manages your sprinkler system so you don’t have to

If your home has an underground sprinkler system, you likely have an irrigation controller
Manually Programmed Controllers
Programming Your Controller

In Minnesota you often do not need to irrigate because of the amount of rain we receive.

Try keeping your controller in the off position and only use it when you know your landscape needs some water.
Programming Your Controller

Setting date/time

A common mistake is leaving the controller set to the default date

Make sure the year is correct
Programming Your Controller

Choosing a start time

Does your area have times you are not allowed to water?

Early morning is a typical recommendation
Programming Your Controller

Choosing a run time

This is based on the irrigation audit you performed previously

You choose a zone and set the run time
Programming Your Controller

Water days options

• Choose which days to water
• Odd or even watering days
• Interval watering (every 3 days)
Programming Your Controller

In this position your controller uses the program you just created to run your system automatically.
103G.298 LANDSCAPE IRRIGATION SYSTEMS.

All automatically operated landscape irrigation systems shall have furnished and installed technology that inhibits or interrupts operation of the landscape irrigation system during periods of sufficient moisture. The technology must be adjustable either by the end user or the professional practitioner of landscape irrigation services.

History: 2003 c 44 s 1

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Technologies that improve irrigation efficiency

Rain Sensor

Soil Moisture Sensor

Wi-Fi Enabled Smart Controllers
Rain Sensors

Bypass irrigation
  • Shutoff sprinkler system immediately
  • Rainfall threshold shutoff

Common rain sensors use cork disks which swell upon wetting which triggers a signal to irrigation controller to bypass scheduled irrigation

$20 to $30
Rain Sensors
Rain Sensors
Rain Sensors
Soil Moisture Sensors

Continuously monitor soil water content

Suspended cycle irrigation
• Set like traditional timer controllers, with watering schedules, start times and duration. The difference is that the system will stop the next scheduled irrigation when there is enough moisture in the soil.

• ~ $120 to $160
Soil Moisture Sensors
Smart Irrigation Controllers

- B-Hyve
- Green IQ
- Hunter Hydrawise
- Rachio
- Rain Bird ST8
- Rainmachine
- Scotts Gro Controller
- Toro Evolution
- and many more….

EPA defines smart controllers as being able to automatically tailor watering schedules and runtimes on sprinkler systems.
Wi-Fi-Enabled Irrigation Controllers

Residential / light commercial sites

Utilize weather station data from regional/nearby weather stations (airports, regional/USDA labs) or add-on weather stations

Adjust runtimes based on environmental conditions

Many work with smartphones and utilize Wi-Fi

Cost dependent on number of zones
Programming a Wi-Fi Enabled Controller

- ESP-TM2: 4 zones
  - Next Irrigation: There are no more irrigation events scheduled today.
  - Today's Forecast: 70°, 55°

- PGM C: Next run is scheduled for 23 mins tomorrow at 9:15 PM
  - Odd Days: 9:15 PM
  - Adjusted Total: 23 mins, 100%
  - Programmed: 23 mins

- Smart Watering will begin watering at 2:20 AM tomorrow.
  - Rain Delay
  - Water Manually

Weeds in your area are growing at peak rates.
Weeds in your area are currently growing at a rate higher than your grass right now, which means an increased risk of them overrunning your lawn.
Programming a Wi-Fi Enabled Controller

- **Frequency**
  - Odd
  - Even
  - Custom
  - Cyclic

- **Seasonal Adjustment**
  - Use Automatic Seasonal Adjust for this PGM
  - Seasonal Adjustment: 100%

- **Soil Type**
  - None
  - Clay
  - Sand
  - Other

- **Start Times**
  - 10:15 PM

- **Zones**
  - Programmed (Adjusted)
  - Zone 1: 23 mins (23 mins)

- **Lawn**
  - **Name**: Lawn
  - **Photo**: ![Image]
  - **Zone Type**: Cool season grass
  - **Spray Head**: Rotary Nozzle
  - **Soil Type**: Loam
  - **Exposure**: Lots of sun
  - **Slope**: Flat

- **Smart Attributes**
  - **Zone 3**
  - Smart watering helps you save water. The more information you provide about your zone, the more water you can save!
  - **Soil Type**
  - **Plant Type**
  - **Sprinkler Type**
  - **Sun/Shade**: Partial Shade
  - **Slope**
  - **Head Count**: 0 sprinkler heads
  - **Catch Cups**: 0 cups configured
  - **Watering Schedule Adjustments**
  - **Advanced Details**
Two year study performed at Utah State University by Shane Evans

Average Annual Irrigation Applied

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<tr>
<th></th>
<th>2018</th>
<th>2019</th>
<th>Average</th>
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<tr>
<td>Average Utah Homeowner</td>
<td>6000</td>
<td>6200</td>
<td>6100</td>
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<tr>
<td>Control</td>
<td>3000</td>
<td>2800</td>
<td>2900</td>
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<tr>
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<tr>
<td>Controller C</td>
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</tbody>
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Gallons of Water
Two year study performed at The University of Minnesota by Dr. Dan Sandor
Future Research

Smart irrigation controllers
  • Soil moisture sensors
  • Rain sensors
  • Wi-Fi-enabled controllers

Located at the UMN Landscape Arboretum
Summary

Several irrigation controllers are commercially available.

If you would like to add a sensor, most are compatible with any type of controller.

Do a little research and find which is best for you.
Summary

Rain Sensor
- Will cancel irrigation during or shortly after rain events
- Need to be replaced every couple of years

Soil Moisture Sensor
- Sets a moisture threshold and cancels irrigation event if above threshold
- Higher cost but tend to last longer

Wi-Fi Enabled Smart Controllers
- Takes in to account weather data and current condition at site
- Look for the EPA WaterSense label
- Good option if looking to replace your controller
Questions?

Please use the Q & A feature in Zoom to ask any questions you have

Please join us for our future webinars
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