



## **Home Sprinkler Systems: Using your Irrigation Controller's Seasonal Percentage Adjust or Water Budget Feature to Irrigate Established Cool-Season Lawns for Vail**

Provided by:

Curtis Swift, Ph.D., Colorado State University Extension

### **Introduction:**

Unless you are using a SMART irrigation controller (clock) that adjusts the watering schedule automatically based on the weather conditions at your location, the following information provides the information you need to more accurately water your lawn. This information is based on the historical weather data in your community and uses the water budget feature on your irrigation clock.

Most irrigation controllers (clocks) have a seasonal percentage adjust or water budget feature which allows the controller to automatically change the amount of water your lawn receives every month of the growing season.

In Colorado the amount of water required for cool-season grasses is considered to be 80% of the recorded grass evapotranspiration rate ( $ET_o$ ). July is the month when lawns in Vail require the most water. The average  $ET_o$  requirement for Kentucky bluegrass, tall fescue and perennial ryegrass lawns in Colorado (80% of  $ET_o$  of 5.39") for July is 4.30 inches<sup>i</sup>. The following recommended settings are based on this average evapotranspiration rate.<sup>ii</sup>

### **The Procedure:**

Step 1: Ensure the time and date on the irrigation controller is correct. Correct if necessary.

Step 2: All the zones/stations with established turf areas should be on the same program, i.e. Program A. Trees and shrubs, flower beds and newly seeded lawn areas need to be on different programs as they require different amounts of water and a different watering schedule than lawns.

Step 3: Set the program start times for established turf to three, four or five start times. If your controller only has three start times, use all three. If you have four or more start times, use four or five. The more start times, the more efficient the watering. For example:

- Start Time 1        set for 12:00 midnight<sup>iii</sup>
- Start Time 2        set for 1:00 a.m.
- Start Time 3        set for 2:00 a.m.
- Start Time 4        set for 3:00 a.m.
- Start Time 5        set for 4:00 a.m.

Step 4: Set each zone/station run time based on the number of start times you selected.

For example:

- a) If the irrigation zone/station has spray nozzles and you have designated three start times, set the run time for 10 minutes; if you are using four start times, set the run time for 7 minutes. If you use five start times, set the run time for 6 minutes. **See Nozzle Type below for more detail.**

Step 5: Set the seasonal percentage adjust/water budget feature for each month as designated below. Some controllers allow you to set this feature for each month at one time while other controllers require the percentages to be changed at the beginning of each month.

<b>Month</b>	<b>Setting required</b>
April	52%
May	73%
June	94%
July	100%
August	88%
September	67%
October	45%

The percentages given above are based on historical averages for Vail. If your controller setting is in increments of 10 percent, round up to the next higher

percent. If you feel the lawn is not receiving enough water, increase the water budget percentage; if you feel the lawn could do well with less water, reduce the water budget percentage.

### **Nozzle Type:**

**Spray Nozzles:** These are the common spray-type pop-up nozzles used for irrigating turf. The average efficiency of these nozzles is 55% with an application rate of 1.6 inches/hour. If your nozzles apply water in a stream use the **MP Rotator** nozzle information below.

- 1) It will take 4 hours and 53 minutes (293 minutes) to apply the proper amount of water to the lawn during the month of July.
- 2) If you water every three days<sup>iv</sup> (10 times per month) each zone will need to run for a total of 29 minutes per watering day.
  - i) Length of run time:
    - i. for three run times set the time for 10 minutes (change to four times if run off occurs)
    - ii. for four times set the time for 7 minutes
    - iii. for five times set the time for 6 minutes
- 3) Schedule an hour between each watering time to allow the water to soak in before the next scheduled water application begins.<sup>v</sup>

**Rotor, Impact and MP Rotator Nozzles:** Impact and rotor nozzles have an application rate of 0.5 inches per hour, and are 70% efficiency.

- 1) It will take 12 hours and 30 minutes (750 minutes) to apply enough water to the lawn during the month of July.
- 2) Watering every three days (10 days per month) requires running the zone for a total of 1hour 15 minutes (75 minutes) each watering day.
  - a. Length of run time:
    - i. for three run times set the time for 25 minutes
    - ii. for four run times set the time for 19 minutes
    - iii. for five run times set the time for 15 minutes
- 3) Schedule an hour between each watering time to allow the water to soak in before the next scheduled water application begins.

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<sup>i</sup> April 2.80"; May 3.92"; June 5.06"; July 5.39"; Aug 4.74"; Sept 3.58"; Oct 2.44".

<sup>ii</sup> To further fine-tune your irrigation system the exact precipitation rate for each zone is needed. Your irrigation professional should be able to test your system to determine this rate.

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<sup>iii</sup> Research confirms the hours between 10 p.m. and 6 a.m. is the best time to water to prevent turf diseases. Visit <http://www.coopext.colostate.edu/TRA/PLANTS/leafwet.shtml> .

<sup>iv</sup> Watering every three days during the heat of the summer is the norm in Colorado.

<sup>v</sup> Separating each start time by an hour permits the water to soak in before the next application of water. This is particularly critical to prevent runoff, especially on slopes and next to streets.