

Landscape Irrigation Cycling Quick Guide

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Runoff from landscape irrigation systems is a major source of water loss in Texas (Fig. 1). Runoff is more common in compacted and clay soils, and on slopes. However, runoff may occur on any soil if the irrigation system runs too long—or if it applies water faster than it can infiltrate the soil. During the peak of summer, long, daily irrigation runtimes may be needed to supply enough water to meet plant needs.



Figure 1. Example of runoff from spray head sprinklers.

To prevent runoff and water waste, it is best to divide long, daily runtimes into two or more shorter cycles. Multiple shorter cycles during the day are better than increasing the number of watering days during the week. Tables 1 and 2 provide guidelines on the maximum runtime per cycle for different landscape conditions and types of irrigation systems. For more detailed information, see publication AGEN-PU-218 [Preventing Runoff with Cycle and Soak Irrigation](#) factsheet.

Spray heads (Fig. 2a) and rotary sprinklers (Fig. 2b) are the most common irrigation systems used for turfgrass. Spray heads have much higher precipitation rates than rotary sprinklers, which is why there are different

recommended cycle times. Adjust the cycle runtime based on the sprinkler type, spacing, soil type, and slope conditions. Cycle runtimes can be fine-tuned by observing each cycle in operation. Wait a minimum of 1 hour (60 minutes) between cycles to allow the water to soak in.

Table 1. Maximum Runtimes per Cycle for Spray Irrigation Systems

Precipitation Rate Range	1.40 to 2.00 inches per hour	
Maximum Runtime Per Cycle¹		
<u>Clay Soils</u>	<u>No-low Slope⁴</u>	<u>Medium Slope⁵</u>
Close Spacing ²	4 to 6 min.	3 to 4 min.
Wide Spacing ³	7 to 10 min.	4 to 6 min.
<u>Sandy Loam Soils</u>		
Close Spacing ²	11 to 12 min.	9 to 11 min.
Wide Spacing ³	17 to 20 min.	14 to 17 min.

¹Assumes at least 60-minute soak period between cycles.

²Close Spacing – spray heads spaced less than 12 feet.

³Wide Spacing – spray heads spaced greater than 12 feet.

⁴Slopes Ranging from less than 3% to 5%.

⁵Slopes Ranging from 6% to 11%.

Table 2. Maximum Runtimes per Cycle for Rotary Irrigation Systems

Precipitation Rate Range	0.3 to 0.7 inches per hour	
Maximum Runtime Per Cycle¹		
<u>Clay Soils</u>	<u>No-low Slope⁴</u>	<u>Medium Slope⁵</u>
Close Spacing ²	15 to 20 min.	10 to 15 min.
Wide Spacing ³	45 to 60 min.	30 to 45 min.
<u>Sandy Loam Soils</u>		
Close & Wide Spacing ²	50 to 60 min.	40 to 50 min.

¹Assumes at least 60-minute soak period between cycles.

²Close Spacing – rotors spaced less than 25 feet apart.

³Wide Spacing – rotors spaced greater than 25 feet apart.

⁴Slopes Ranging from less than 3% to 5%.

⁵Slopes Ranging from 6% to 11%.

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Figure 2a. Spray head sprinklers irrigating turfgrass.



Figure 2b. Rotary sprinklers irrigating turfgrass.

Details and Considerations

1. Shorter irrigation cycle runtimes should be used on compacted soils.
2. As the slope of the landscape increases, or as the precipitation rate of the sprinklers increase, the shorter should be the cycle runtime.
3. Sprinkler heads that are spaced closer together have a higher precipitation rate than those spaced further apart.
4. In situations where four or more irrigation cycles are needed, the cycles can be split between the early morning and late afternoons.
5. For sites with heavy clay soils, a minimum soaking time of 60 minutes is recommended between irrigation cycles. Soak periods can be reduced to 30 to 40 minutes for lighter soils.
6. Avoid watering during the middle of the day when evaporation rates are at its highest to reduces losses.
7. Be sure to check with the local city or water utility provider for any current water restrictions (regarding what times during the day irrigation is allowed).