
Missoula County

INTEGRATED PLANT MANAGEMENT

Fact Sheet No. 5

WATERING LAWNS . . . How Much is Enough?

Healthy lawns require the proper amount of water at the proper time. Simple to say but hard to do! Often, lawns are irrigated too often and with too much water. Unfortunately, many lawn problems result from excessive irrigation. Most lawn diseases require moisture and warm temperatures in order to become established and to spread. Frequent irrigation will encourage shallow rooting which can be a factor in lawn susceptibility to weed invasion. On heavy soils, too much water can fill soil air spaces, resulting in waterlogged soil and poor turf growth. Also, excessive irrigation can leach fertilizer below the plants= root zone, and possibly into our groundwater. On the other hand, not enough water diminishes lawn growth, causing stress that can result in susceptibility to pests.

How do we know when and how much water to apply to our lawns? The following guidelines should help you develop an irrigation program.

- ! Know the water requirement of the predominant grass species or cultivar in your lawn (*i.e., fescue species require less water than bluegrass species*)
- ! Figure out the performance of your irrigation system. What is the precipitation per minute, or hour, of your sprinklers.
- ! Base your irrigation timing and amount on the average evapotranspiration rate per month for our area (*see chart on reverse side.*) Estimating lawn water use from evapotranspiration measurements makes sense because this method measures the factors that cause plants to pull water up from the soil, through the plant, and then evaporate on leaf surfaces. These factors include solar radiation, temperature, wind and humidity.
- ! Adjust irrigation frequency and amount based on natural precipitation. For example, in early spring through June, we can expect significant rainfall; so our irrigation during that time period should be lower than it is in July. *It's best if you can change your irrigation settings based on up-to-date weather conditions.*

Missoula=s Monthly Average Evapotranspiration Rates & Precipitation

<u>MONTH</u>	<u>EVAPOTRANSPIRATION</u>	<u>AVERAGE PRECIPITATION</u> <u>(inches water equivalent)</u>
January	0.00	1.14
February	0.00	0.81
March	0.51	0.83
April	1.45	1.01
May	2.86	1.62
June	3.91	1.85
July	5.22	0.85
August	4.38	0.95
September	2.56	1.02
October	1.35	0.85
November	0.32	0.88
December	0.00	1.21

Example Calculation: The average evapotranspiration (EVT) for Missoula in July is 5.22 inches. Since there are 31 days in the month, divide 5.22 by 31 to figure out how much water a lawn requires daily. That average is 0.17 inches of precipitation per day. Yet natural precipitation, on an average, is only 0.85 inches (or 0.027 inches per day.) Thus, the average Missoula lawn requires approximately 0.14 inches of added irrigation/July day.

Generally, development of deeper-root systems is enhanced by **less frequent but deeper** irrigation. Therefore, calculate the amount of irrigation needed by your lawn if you were to irrigate every three to four days. In July, the average lawn requires 0.43 inches of water every three days (5.22 EVT minus 0.85 inches average precipitation divided by 1/3 of 31 days, or 10.3.)

The next step is to figure out how long your system needs to run to provide the calculated amount of water. This can be accomplished by measuring the output of your sprinklers and calculating how much water they put out in a minute or in an hour.