



Watering & Rain Barrels

EFFICIENT
WATERING
CONSERVES WATER,
REDUCING
MAINTENANCE
COSTS

Watering practices affect all areas of yard care: lawns, gardens, trees, shrubs and soil conditions. Efficient watering practices are important to all homeowners who want to conserve water, maintain a sustainable, healthy landscape as well as reduce maintenance costs.

PLANT WATER USE

Understanding how plants use water and their ability to tolerate dry conditions is the first step to placing the right plant in the right place to perform the right function. Water is an essential ingredient of all living cells. Plants absorb and take up water primarily through their roots. Nutrients from the soil are dissolved in the water and this solution is transported throughout the plant, nourishing all areas and supporting plant development. When the plant experiences water stress (usually meaning a lack of water) the first sign is wilting caused by reduced water pressure in its cells. Plants also use water to maintain their own temperature and the temperature of their immediate surroundings. Water vapor eventually diffuses out of the plant leaf through small pores called stomata. These small pores are spaced close together on upper and lower leaf surfaces. This evaporation process helps cool the plant and its surrounding microenvironment.



HOW TO WATER

It is best to keep watering to a minimum without stressing your plants. *Thorough, infrequent watering will force your plants to develop deep, strong root systems that will be able to absorb water from soil better* than shallow roots that develop from light watering. With the exception of the warm summer months of June, July and August our climate and weather in Minnesota usually supply enough moisture to support our plant life without supplemental watering. Water in the landscape is lost back into the atmosphere through evaporation and is used by the plant for cooling purposes (a process known as transpiration). Together these two phenomena are known as “evapotranspiration.”

Watering time and frequency is affected by plant type, soil type, the weather, and the amount of sun and wind your plant or lawn is receiving. During hot, dry weather, the time between watering should be shorter. Cooler, dryer conditions enable you to water less often. Our cool-season turf grasses do a majority of their growing during cool spring and fall months. During the hottest parts of the summer months some of our older lawn grasses will actually go into a dormant state or slow their growth considerably in order to survive these periods. While they may not look their best at this time, it is actually a natural part of their lifecycle. Other plants, such as prairie grasses and flowers will actually suffer if watered as frequently as other plants, such as many garden perennials. Some plants will require more watering than others due to their size, placement, amount of sun and general physiology. Hand watering these plants and areas may be a more efficient use of your water than just turning on the sprinkler and watering areas that don't need watering. So understanding the needs and climate of your particular plants, shrubs, turfgrass, etc. is important to knowing how often you need to water.

A very light application of water is called syringing. Essentially, you are wetting the leaves of grasses and plants to reduce heat stress and cool plant and soil surfaces along with the surrounding air. Syringing is useful after seeding a lawn or lawns recovering from certain root diseases.

The amount of water you apply will depend on your type of soil and its moisture level. *The best method is to thoroughly dampen the soil to a depth of five or six inches.* Applying too much water will saturate the soil. Any additional water applied may be lost via run-off or it may move too deeply into the soil where plant roots cannot utilize it. Also, water needs will vary considerably from one type of plant to the next. For example, tree roots are much wider spreading and grow deeper in the soil than a shrub. Thus, adequately watering a mature tree will require watering a much larger area than a mature shrub.

TO DO/Measure when you water:

Determine the amount of water you are applying by putting several containers (coffee cans work!) under your sprinkler or drip irrigation hose. After an hour measure the amount of water collected in the container. This will tell you how much water has been applied in an hour. Note: When determining when and how much to water, be sure to consider any rainfall that has fallen recently.

WHEN TO WATER

You never want to tell it's time to water by seeing your plants wilting. This means they are under severe water stress.

TO DO/Check before you water:

Check your garden by feeling the soil a few inches below the surface. Squeeze a handful into a ball and poke it with your finger. If the soil ball holds its shape but breaks apart easily when poked, the moisture level is just right. If the soil ball holds its shape and doesn't break apart easily the soil is too damp. If the soil doesn't even form a ball, it's definitely time to water. Lastly, if you cannot easily dig down a few inches because the soil is too hard, you have bigger problems than watering! Generally, this condition is the result of severe soil compaction and will need to be modified to improve soil conditions.

The best time of day to water is early in the morning, from about 4 to 8 a.m. when cooler temperatures, lower wind velocity, and reduced sunlight will lower water losses due to evaporation. In addition, water demand on municipal systems is usually less at that time. While it will cool plants and reduce heat stress, watering in the middle of the day is not as efficient because some of the water will evaporate before it can be absorbed by the soil or used by the plant. Watering at night may result in plants and grass staying too wet most of the night thereby increasing the chances of disease development.

Watering too much is as detrimental as watering too little. Knowing your plants' requirements is important to good plant health. Plant roots that are growing in soil that is constantly wet become susceptible to many soil-borne pathogens such as fungi and bacteria. Root rots caused by fungi and bacteria will turn plant roots to mush and can weaken or even cause the death of those plants.

You can reduce the amount of watering required by using mulches (see Mulching, pg 30). Mulch will hold a significant amount of moisture in the soil, reducing evaporation and the need for water.

FOR MORE INFORMATION:

– More information and details about watering can be found on the Sustainable Urban Landscape Information Series website: www.sustland.umn.edu

RAIN BARRELS

Rain is naturally soft water and is devoid of minerals, chlorine, fluoride and other chemicals found in the water that comes from your home's faucet.

TO DO/ Install a rain barrel:

A rain barrel system placed under a shortened downspout collects the rooftop rainwater runoff and stores it for watering your lawn and gardens. A rain barrel system varies from the simple use of a 55-gallon drum, to a high tech system with flow controls.



BENEFITS OF RAIN BARRELS

- Help lower water costs (a rain barrel can save approximately 1,300 gallons of water during peak summer months.)
- Store rainwater for garden and lawn use- conserving municipal water.
- Reduce roof top water runoff to storm sewers.
- Soft water is good for plants.
- Easy to build and install and can be inexpensive.

Visit www.cwp.org/Community_Watersheds/brochure.pdf for instruction on how to build a rain barrel. To purchase- search the web for retail "Rain Barrels."