Water-Wise Gardening

Prepared by Sharon Yiesla of
Sharon Yiesla, Horticultural Services Updated 2024

Basic Concepts

Proper watering is always a good idea; even when water is plentiful.

- Water is a precious resource, so we should not waste it.
- Proper watering has a positive impact on the health of our plants.

Water should always take priority over fertilizer.

- If a plant does not have enough water, fertilizer has no purpose or can be detrimental.

Why is water so critical?

- The plant uses it for photosynthesis (the process of making food for the plant)
- Water transports nutrients through the plant
- It moderates the temperature of the plant

Improper watering leads to STRESS. Proper watering reduces stress.

- Our goal is a consistent (not constant) supply of water in the soil. In other words: avoid alternating wet and dry cycles.
- Soil that is too wet or too dry will inhibit root function or may damage or kill roots

Basic Watering Techniques:

How and How Much?

- Water deeply and infrequently, avoid shallow, frequent sprinkling.
- About one inch per week; applied all at one time.
- This is NOT a rule, it is a very general guideline.

Why?

- Water goes deeper into the soil
- Leads to a deeper, stronger root system
- Plants are healthier
- Allows us to work within water restrictions imposed by municipalities

What else?

- water the soil, not the leaves
- roots are the organs of water absorption
- keeping foliage dry helps to minimize fungal disease (fungi love water)

When?

- Best time is early in the day as the temperature is rising. There is less evaporation at this time and early day watering prepares plants for the heat of the day.
- Late afternoon in the next best time. Watering at the end of the heat of the day can refresh plants. Water early enough so that plants can dry off by nightfall.

Prioritize Watering

- New plantings should be number one on the list. They are already under stress and they have limited roots systems to take up water.
- Valuable plants should be high on the list. These may be plants that would be costly to replace or they may be plants that have some sentimental value to the gardener.
- Lawns can be a low priority. They are meant to go dormant in the heat of summer. They can also survive a great deal of dryness.

Mulching to conserve water.

- Mulching can minimize evaporation
- Use a 2 to 3 inch deep layer
- Don't pile it at the base of the plants. It has to be on the soil to hold in water.

Plan a Water-Efficient Garden

Plant selection:

- Minimize the use of plants with high water needs (or group them together in one area)
- Use more drought tolerant plants
- Consider native plants (not all will be appropriate; choose those native to dry prairies)
- Reduce lawn size

Prepare planting sites by amending the soil (when feasible)

- Use organic matter, not sand
- Allows for drainage of excess water while retaining enough for the plants to use

Tools for Watering

Lawn sprinkler (general)

- can be very wasteful; 50% of the water can be lost to evaporation and wind
- improper placement of sprinkler heads may lead to water going to paved, rather than planted areas, wasting water
- sprinkler may have to be moved around from area to area
- overhead watering wets the foliage and can lead to fungal problems
- Sprinkler system may be on an automatic timer; timer may be set wrong or may turn on the system during rainfall, wasting water

Lawn sprinkler (Improving performance)

- Use it in the morning (winds often lower so less evaporation and plants have time to dry before nightfall, minimizing fungal disease
- Set sprinkler heads to provide water only to planted areas
- Water different sections of the yard on different days to minimize moving the sprinklers
- Set the time for a realistic time frame, running it longer and less often
- Turn the system off if it runs on a rainy day

Soaker hose (general)

- less loss to evaporation; water goes right into the soil
- leaves stay dry, so less fungus
- you can do other things while watering and you can water at night
- hose stays in place; does not need to be set up each time
- can take a long time to fully hydrate the soil

Soaker hose (improving performance)

- Run it long enough to moisten the soil 5 to 6 inches deep
- Run a test to determine watering time: run the hose for an hour, then turn it off; dig a small hole and see how far down the water went; if the water went down only 3 inches, then double the time to get six (dig another small hole to verify); once the test is done, it should not need to be repeated
- Don't run the hose again until the top inch or so of soil dries out

Water by hand (general)

- spray gun or water wand?
- can water individual plants rather than the whole bed
- can keep foliage dry by directing water to soil, not overhead
- can be time consuming
- hard to know if you have applied enough

Water by hand (improving performance)

- When do I have enough? For small areas, water the whole area, then make a second pass; the water will soak in better because the soil was pre-moistened by the first pass.
- Use hand watering to maximize the use of rainfall. If rain is expected soon, water the garden. This pre-moistens the soil and helps rain soak in, rather than run off.
- Target specific plants and not the whole garden. Water each plant and avoid the areas where there are no plants. This saves water and slows down weed growth in the unplanted areas.

Water by hand (for trees)

- Use an open-ended hose
- Lay the hose on the ground at the dripline
- Run the hose at a small stream for 20 to 30 minutes at each of 2 to 4 sites (depending on the size of the tree) along the drip line.

Root feeders (improving performance)

- Place it along the drip line like you would for an open-ended hose
- Remember that the water comes out at the tip of the root feeder. Place the tip into the soil just a few inches and let gravity take the water down.
- Watch for water bubbling up around the device; either turn down the water pressure or move the device to another location.

Irrigation bags (general)

- How: water seeps out of the bottom the bag and goes into the soil and into the root ball
- Benefits: delivery is slow, so less lost to runoff; water goes exactly where it should; you know exactly how many gallons were applied
- Best used on young trees since the bag will sit right on top of the root ball.

Irrigation bags (improving performance)

- The bag is not meant to be full all the time. It gets filled and the water seeps out within several hours to a day. That is normal operation for this device.
- To determine when it next needs to be filled: watch the weather; with moderate temps and some rainfall, once a week may be fine; with hot temps and dry weather, maybe every 3 to 5 days. Lift the bag and check the soil moisture under the bag
- Remove the bag in winter to prevent water/ice buildup between bag and trunk (and to discourage pests from taking up residence)

Self-watering containers (general)

- How it works: container usually has some sort of reservoir that gets filled periodically
- Benefits: don't have to water the container every day; delivery is consistent so no wet/dry cycles; water goes exactly where it should

Self-watering containers (improving performance)

- Pay attention to the water level in the reservoir.
- The reservoir has limits. It may allow you to go a few days without watering, but you will need to monitor the reservoir and fill it before it empties.
- A container filled with plants may dry out more quickly in hot, sunny, windy conditions

Rain barrel

- Vary in capacity (50-150 gallons), but one inch of rain may produce 600 gallons of water
- Rain barrels can be hooked together in a system
- Need to have an overflow port and hose to lead excess water away from the house
- Rain barrels are heavy and need a level, secure surface
- Fine screening on openings to stop mosquitoes and
- Tight fitting lid to protect children, pets
- Empty the barrel before winter
- The water in rain barrels should NOT be used for drinking
- Safe to use on flowers, but in the vegetable garden keep water off the edible parts
- Rain barrels don't help us if we are getting no rain for a long period of time