

Using Our Water Resource Wisely

By Jim Williams
Wexford Conservation District

Now that it is summer, you may be planning to irrigate your cropland, garden, or lawn. The efficient use of your water is an important factor for the both productivity and health of the plants, as well as the conservation of water.

For Homeowners:

For the homeowner with a garden and/or lawn to water there, are several things to consider before you turn on the water spigot.

Planting plants that are native to our area:

Landscaping with native plants makes good sense. Native vegetation is generally easy to maintain because native species have adapted to the regional climate. If they are matched with the right site, they generally don't need irrigation. As an added bonus, they are also less susceptible to pests and diseases and rarely need fertilizer. On the other hand, cultured lawns and landscapes featuring exotic, introduced species usually require irrigation, fertilizer, and pest/disease management.

Keep the soil covered:

The soils in Wexford County are generally sandy, which limits their ability to hold water for the plant to use. Adding to that, when garden soils have no vegetative covering or mulch, they will dry out quickly. Organic mulch such as straw, shredded leaves, wood chips, or compost can conserve the water in your soil by shielding the soil from the hot sun, and thus prevent the water in the soil from evaporating. As an extra bonus, mulch suppresses weeds that would otherwise rob your desired plants of water. Before you spread mulch, first make sure that the soils are thoroughly moistened. Just as the mulch maintains soil moisture from evaporating, it also slows the penetration of water down through the mulch to the soil. Plastic mulch is another option. However, when using plastic mulch, drip irrigation or a soaker hose must be placed underneath the plastic to ensure adequate watering of plants. Be sure to check the irrigation lines for leaks and other problems before you lay down the plastic.

You may also want consider laying out your garden in beds rather than wide rows. When plants are placed in beds, the leaves of the plants will, in time, completely shade the soil. When that happens, less moisture is lost, and fewer weeds will germinate.

The advantages of drip irrigation

There are many ways to apply water to your garden and lawn. Drip irrigation is a method that drastically reduce the quantity of water needed because the water is applied near the root zone – right where it's needed – so less water is wasted. These systems lay on the ground beneath the leaves. The leaves don't get wet this way, and the chances that fungal leaf diseases will take hold are reduced.

For Farmers:

For an agricultural producer an irrigation system is a significant investment of both time and money. However, by investing the time it takes to manage irrigation water effectively, the results will be a higher quality crop, increased yields, and less water and electricity used. An irrigation water management plan

will help a farmer see the greatest benefits from irrigation. The plan will detail items such as rate, amount, and timing of irrigation water so that the irrigation can be as efficient as possible.

Soils vary in the rate of water they absorb and the amount of water that can be stored in the root zone. Fine-textured (clay) soils have a slower infiltration rate and can hold more water than coarse-textured (sand) soils. For that reason, an irrigation plan for a field with sandy soils is likely to contain a recommendation of more frequent watering than would be recommended on a soil that contains some clay.

Plants also vary in how much water they need and when. During flowering and fruit set, plants often require additional moisture than at other times in their development. And, some crops need more water than others. For example, alfalfa needs more water than corn. An irrigation management plan will take into account the type of crop being grown, and its growth stage.

For Gardeners and Farmers:

Both farmers and gardeners need to be aware of rainfall and have a rain gauge to measure rainfall near their fields or gardens. Wide variations in weather patterns distribute uneven amounts of rainfall across a county, so relying on information from a weather station even ten miles away isn't always helpful. With information from your own gauge, you will be able to tell how much water natural rainfall is supplying, and if you could possibly skip irrigation altogether.

Whether you are irrigating a 20' by 40' garden, or a 60 acre field, you need to know if your irrigation system is applying water evenly and at the amount you desire. A system evaluation can do this for you. Gary Powell of Dutchman Tree Farms in Arlene recently had one of their irrigation systems evaluated. Gary said "We are interested in conserving water and getting the water where it needs to be. The system evaluation gave us information on where we need to make adjustments to improve our water use, and it helped us lower our cost of production." Evaluating a large center pivot irrigation system on a farm involves placing a "catch cup" every 10 feet across the length of the center pivot. By measuring the volume of water in each cup, both uniformity and amount of water applied can be determined. The farmer can then locate any nozzles that need repair and identify adjustments that need to be made to the system.

For gardeners, placing identical cans or rain gauges in the area you are watering and observing the amount in each can will help you decide how well your sprinkling system is working. You will learn if your sprinkler is applying water evenly, how much water is being applied, if you need to adjust the overlap of the sprinklers, or if the sprinkler needs some maintenance. Additionally, it can be a great cost-saving measure for those who rely on city water.

Jim Williams is the USDA- Natural Resources District Conservationist serving Wexford and Missaukee Counties. If you would like more on conserving our water resources, you can reach Jim by calling (231) 775-7681, ext. 3, by email at jim.williams@mi.usda.gov, or by stopping in at the USDA Service Center located at 7192 E. 34 (Boon) Rd. in Cadillac. The USDA-NRCS is an equal opportunity employer, provider, and lender.



The “catch cups” placed along the length of this center pivot will help the farmer identify if there are any nozzles need repair, or if the rate and/or pressure needs to be increased or decreased to ensure the field is getting the water it needs.



Missaukee Conservation District staff members Jeff Fewless and Alex Hayes are part of the conservation team that assists farmers in evaluating their irrigation system.



The straw mulch in this vegetable garden is being used to both conserve moisture and reduce weed pressure.



Prior to mulching, the drip tubing and soaker hoses in this garden bed are being tested to ensure that they are delivering water evenly.