



Pork & Plants LLC
16378 County Rd 114
Altura, MN 55910
507-689-2678
www.porkandplants.com
www.facebook.com/PorkandPlants

Ten water-saving tips

- 1 Grow drought-tolerant plants that don't need as much help to survive
- 2 Put saucers under containers so water doesn't run away and you can help reduce the time spent watering
- 3 Limit use of hanging baskets and utilize water-storing crystals to reduce the amount of watering needed
- 4 If possible, plant in spring or autumn when the ground is damp
- 5 Avoid watering lawns – they soon green up after rain
- 6 Install water butts to collect rain to use in dry spells
- 7 Mulch in late winter to 'lock in' soil moisture and prevent weeds growing
- 8 Recycle water from the kitchen and bathroom (see collecting and using grey water right)
- 9 Remove weeds – they use water that your other plants can soak up
- 10 Prepare soil in autumn and winter to minimize moisture loss

Collecting and using grey water

Plants can be watered with bath, shower and kitchen water, which is collectively referred to as 'grey' water. Soil and potting compost are effective at filtering out contaminants, including soaps and detergents, so there's no need to worry about using it on your plants. However it is good hygiene practice not to use bath and shower water on edible crops.

How to water...

- Apply it at a steady rate at the base of stems, as wetting the leaves is a waste
- The surrounding soil should stay dry, with all the water going to the roots
- Always check the weather forecast and only water if not enough rain falls
- Aim to supply enough water to just moisten the top 30cm (1ft) of soil. Excess water will quickly drain below where the roots can reach

When do plants need water?

The best guide comes from digging a hole to a spade's depth; if the soil feels damp at this depth watering is not

needed; if it feels dry then some plants will need a drink.

However it is worth remembering the following too:

- Drought-tolerant plants, most lawns and established trees and shrubs, and large fruit trees rarely need watering
- Fruit and vegetables usually crop adequately without watering. The quality and quantity however, is improved

by watering close to harvest

- When the leaves are the crop, such as lettuce, the plants should never go short of water. Watering about two

weeks before harvesting is usually sufficient

- Containers need frequent watering because they only hold a limited amount of water.

Wilting, for instance, isn't always a sign that a plant isn't getting enough water. It could be flat-out hot temperatures.

All kinds of heat trouble begins when daytime temperatures go above 86 degrees. Among the threats:

- Flower buds may wither.
- Chlorophyll production begins to shut down, robbing leaves of their healthy green color.
- Pollen becomes non-viable, preventing popular plants such as tomatoes from setting new fruit until the weather cools.
- Subtle chemical changes occur in plant leaves, making them more vulnerable to bug attack.
- Soil temperatures may rise to the point where root activity slows and plant growth is stunted.
- Most noticeable, moisture loss from plant leaves increases, making plants more susceptible to dry soil.

Some plants take the heat much better than others, as any Southern gardener will tell you.

Unfortunately, gardeners slowly learn which plants can stand it on the hot seat by trial and error or word of mouth since heat-hardiness ratings aren't nearly as common in the plant industry as cold-hardiness ones. However, the American Horticultural Society has a Heat Zone Map and heat-gardening observations.

Besides the genetic makeup of plant species, a second heat factor is plant location. Every yard has different microclimates. It might be hot and brutal in the middle of the back yard, or on the west side of a brick wall, but 10 degrees cooler along the eastern foundation or under a shade tree.

Matching a plant to its heat and sunlight tolerance can mean the difference between survival and a fried plant. Don't be afraid to move a plant that's struggling – just wait until spring or fall to do it.

A third anti-heat maneuver is keeping plants healthy with good soil and adequate water. Plants lovingly rooted in rich, loose, compost-enriched soil put out better roots than ones jammed into lousy clay or packed shale. That makes them better able to deal with any stress, including heat and drought.

Be careful not to overdo it with water. Even in hot, dry conditions, it's possible to kill a plant by rotting its roots.

Use your finger or a watering gauge to make sure the soil really is dry a few inches down where the roots are. If it's already damp or wet, more water isn't the answer.

Hydrangeas are a perfect example of a plant that wilts from excessive heat. The large leaves often wilt in daytime heat but recover at night when the temperatures cool. If a hydrangea is still wilted first thing in the morning, then it most likely is dry soil – or it's in the process of dying from previous overwatering. Dead roots can't deliver moisture, so the result looks like drying.

A 2 to 3 inch covering of mulch is a good way to both keep moisture in the soil and prevent sunlight from baking plant roots. Bare soil in the sun can be 20 or more degrees hotter than the air temperature, and on 95-degree days, that's bad news for plant roots.

When to water vegetables

Vegetables need varying amounts of water depending on the stage in their life, the type of plant and the texture of the soil. For a general guide, the following may help:

Freshly sown seed and young vegetable plants need adequate water. Water the seed drill before sowing. Watering afterwards can create a cap (hard crust) on the soil

Once plants are established and putting on growth, at the least, water when drought will affect the part of the plant that is to be harvested. In practical terms, watering about two weeks before harvesting is usually sufficient

On drought-prone sandy soils or sticky clays, water every 10-14 days in dry spells

Which crops need watering when?

The amount of water needed by the crop depends on which part of the plant is eaten.

Legumes

Broad beans and peas need lots of water at flowering time in order for pods to set and, again, two weeks after flowering begins. As young plants, avoid too much water as this can encourage leafy growth and reduce the yield. Runner beans need constant moisture for pods to set, whereas French beans are less sensitive to some dryness

Stem vegetables

Celery, celeriac and Florence fennel need water during growth. Periods of drought stress are very damaging and should be avoided – it can lead to bolting or poor quality crops

Curcubits

Courgettes need constant moisture all the way through to harvest. Marrows, pumpkin and winter squash benefit from watering but, in practice, often produce fair fruits from minimal watering. Trailing types need less water as their spreading habit conserves moisture and the stems root where they touch the ground

Fruiting crops

Aubergines, sweet corn and tomatoes all need watering well to aid establishment and also at throughout the flowering and fruiting period

Leafy crops

Cabbages, chards, lettuce and all salad crops, need water at every stage of growth. If water is especially short, make sure that you soak the ground around cabbages and lettuces when hearts begin to form

Root crops

Carrots, beetroot and parsnips require watering before the soil becomes dry, for example, if there are 14 days without rain

Onions, shallots and leeks need only to be watered when they are establishing, and in very dry spells

Potatoes benefit from being watered every 10-14 days once the tubers are marble-size

Radishes need to be watered every week in dry spells

How to water vegetables There are definite techniques to learn if watering plants is to be done efficiently and effectively. This holds true for watering vegetables;

The key to watering successfully is to water thoroughly to a depth of 30cm (1ft). Avoid watering the top centimetre or so on a daily basis, for example. Watering every 10-14 days (if there is no rain) is a general guide

Dig down to a spade's depth to see if there is moisture in the soil; if so watering is unnecessary. Bear in mind that sandy soils can look dry but still contain moisture and clay soils can look wet, but the water is held too tightly for plants to access

Watering when the plant does not need it can increase the growth of the plant, but not the size of the part that is to be harvested

Keep vegetable-growing areas free of weeds. A surprising amount of moisture can be taken from the soil by weeds

Vegetables in containers

Any plants in containers can quickly become under stress as their roots are unable to search for further moisture and nutrients.

Consider using drip irrigation to keep water thirsty crops such as courgettes and tomatoes supplied with the water they need

Avoid using only peat compost; if it dries out too much, it can be very difficult to re-hydrate. Try peat-substitutes based on green waste and composted bark or mix with a loam-based compost such as John Innes No 3, which will hold moisture more efficiently

How to reduce watering

Watering plants is time consuming but, by setting up water-efficient systems early in the season, you can enjoy more of the summer picking and eating your produce.

Make sure your soil has had plenty of organic matter dug into in. Garden compost, well-rotted manure and green waste compost are all useful

Double digging and adding organic matter on some soils (ie sand and poor loams) may improve texture and water retentive qualities

Most crops can be planted through a layer of semi-permeable landscape fabric to conserve water and control weeds. This is especially useful for the onion family, which will not tolerate weeds. Potatoes grow well in this way and do not then need earthing up. To supply water, set up irrigation underneath the membrane (eg leaky pipe) or water carefully with a sprinkler. Water will gradually sink in

For widely-spaced vegetables such as tomatoes, mulch underneath after watering or rain with a 5-7.5cm (2-3in) layer of garden compost or well-rotted manure

On very dry soils, use planting techniques such as planting transplants a little lower than the surrounding soil so that water collects in the 'puddle' and actually sinks in

Problems

Although watering sounds like a simple task, supplying just right amount can be a challenge.

Too little and plants can be prone to bolting, powdery mildew and nutrient deficiencies such as blossom end rot in tomatoes

Too much water can cause leafy growth, which is great for lettuce, but not for root vegetables such as carrots which can split

Overwatering can exacerbate slug and snail problems and encourage foot and root rots.

It's obvious when plants have had too much cold. They freeze. They brown. They turn to mush. Too much heat can be nearly as destructive, but the damage is less obvious. Or the trouble gets blamed on drought instead of heat.

All lawns require special care measures during dry weather. When deprived of water, lawn grasses may stop growing and start to brown, especially once the top 10cm (4in) of soil dries out.

Ornamental lawns of fine bent-type grasses are most likely to suffer. General garden lawns containing fescue grasses may have more resistance.

A well-maintained lawn usually recovers rapidly with the onset of autumn rainfall, especially if appropriate autumn lawn care is given.

However, in extended periods of drought, or where the lawn is not well maintained, lawn grasses can become weakened and their roots deteriorate. If the grass becomes sparse, weeds and moss easily establish with the onset of autumn rains. Remedial action may be necessary.

If summers become hotter and drier, as predicted, the issue of caring for lawns in drought will become more pressing, as water may be too scarce for lawns to be watered.

Care for lawns during drought

Mowing

Raise the height of cut in dry weather to avoid weakening the grasses and let the clippings fall back onto the lawn rather than collecting them. They will act as mulch and slow down the evaporation of water from the soil surface. Make sure the clippings are small, or they will smother the grass and cause damage.

Watering

Water newly created lawns thoroughly – provided there are no hosepipe restrictions in force.

For established lawns that must be kept green, water once the soil becomes dry, but before the grass colour changes. If the ground is very hard, aerate it by spiking with a garden fork before watering, to aid water penetration.

Water the lawn in early morning, evening or even night-time, to reduce water wastage from evaporation.

Watering once every seven to 10 days is normally sufficient. It is important not to apply too much water. This is wasteful, encourages shallow rooting of the grass and promotes moss and turf diseases. Excessive watering makes the lawn less drought-tolerant in case of hosepipe bans or holidays when watering is discontinued.

Working out how long to leave the sprinkler on

Method 1:

Ensure that the water reaches a depth of 10cm (4in) after each watering. Use a trowel to open a small test hole a few hours later to ensure the soil is sufficiently damp. By noting the duration of watering required to achieve this level of dampness, future irrigation can be more accurately applied.

Method 2:

The average hosepipe sprinkler delivers up to 900 litres (200gal) of water per hour. If it is assumed that the sprinkler covers an area of 9 sq m (97 sq ft), in one hour it delivers about 100 litres per sq. m (22gal per sq. yd). Even in June or July, one square metre (yard) only needs 20 litres (4½gal) every seven days. On that basis, 12 minutes' steady sprinkling per 9 sq m (97 sq ft) should be enough.

Method 3:

In practice, sprinklers vary considerably in their area of coverage, so the number of minutes required may not be exactly 12. By spacing jam jars over the lawn to catch the water, total water delivery can

be estimated. Allowing the sprinkler to run until 2.5cm (1in) of water has been evenly collected in all the jars approximately equals the correct rate of water application.

Care for lawns after drought

The autumn after a dry summer is the ideal time to carry out renovation and repair. This will help the lawn to recover from recent drought but will also make it more drought resistant the following year.

Over-seed any sparsely-grassed areas using an appropriate mixture. See our advice on lawn care: spring and summer for more on doing this.

Do not use lawn weed killers on drought-affected turf in autumn. Delay treatments until the following spring, when the grass and weeds are growing vigorously. Use a proprietary lawn moss killer, if required.

<http://www.rhs.org.uk/Gardening/Sustainable-gardening/Gardening-in-a-changing-climate/Advice/Dealing-with-Drought>