



How Much Should You Water?

The answer may not be as simple as you think.



This question is probably the most commonly asked question in nurseries and garden centers. If you ask 5 different people, you will probably get 5 different answers - and - most of these different answers are surprisingly correct - because **There Is Not One Correct Answer For Everyone.**

A lawn requires one watering schedule, bedding plants and vegetables require another schedule, shrubs and trees should be on a separate schedule, and Xeriscape plantings need a different schedule altogether. To further complicate matters, the answers will change depending on the time of year, and the type of current weather conditions.

Water needs and watering schedules can be an exact science, however, unless you take an advanced 'Evapo Transpiration' class from a University, you will probably have to do like the rest of us in the nursery industry - **GUESS!** The better educated guess you can make, the better your plants will respond in your yard, and the more water you will be able to conserve.

Lawns

A good rule of thumb is: A lawn usually needs 1" of water per week during the spring. During the early-summer the lawn needs 1-1/2" of water per week. During the hot summer weather your lawn needs 2" of water per week. Reduce the amount of water to 1-1/2" per week as soon as the weather starts to cool in the late-summer, and reduce the water in the fall to 1" of water per week.

Remember: Rain is supplying some of this water so account for rainfall in your water schedule, especially in the spring and fall.



How do you know how much 1" of water is? How long does it take to apply 1" of water? Good Questions!

A rule of thumb is to apply 1/2" of water each time you water your lawn. During the spring you should water your lawn 2 times a week to give it 1" of water, unless the rain provides some of this water for you. Water your lawn 3 times a week in the early-summer to give it 1-1/2" of water. Water your lawn 4 times a week during the hot weather to give it 2" of water. As you can see, you do not need to water your lawn longer during the summer, you need to water it more often.

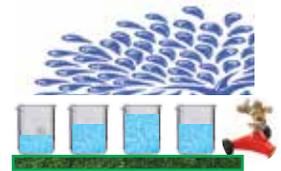
Each lawn has a different sprinkler system; even from the front to back lawns of the same yard. One lawn may need to be watered 10 or 15 minutes to get 1/2" of water. Another lawn may need to be watered 45 to 60 minutes to get the same 1/2" of water.

You need to find out how long it takes your sprinklers to apply 1/2" of water to your lawn before you can determine how long to water your lawn.

Set out several (10 to 15) tuna fish cans in different locations throughout your lawn, to measure the amount of water applied. Be sure to set a can in any suspiciously wet or obviously dry



spot. Turn on the sprinklers until you have an average of 1/2" of water in all the cans. If you have very little water in one can, while you have a lot of water in another can, you know you have a sprinkler system problem.



Take time to add a new sprinkler head, or two, or even three, if you have uneven water distribution patterns in your sprinkler system.

Do not water your entire lawn long enough to get 1/2" of water in all of the cans - change your sprinkler system to fix the uneven watering patterns.

If your lawn is flat, you will water your lawn differently than if your lawn is sloped. A flat lawn should be watered once or twice a week in April and early-May. Remember that as the temperature increases so should the number of times a week you water your lawn, not the length of time. Your lawn still needs 1/2" of water each time you water.



More often than not, lawns are watered too frequently; but not long enough each time. Frequent, shallow watering encourages shallow roots, and contributes to thatch accumulation, soil compaction, and even weed seed germination. Shallow roots also make your turf less healthy and more prone to disease, insect infestations, or damage from heat and cold. Deep watering produces deep roots, and healthier grass.

For a sloped lawn, you may need to cut the number of minutes in half, and water twice in one day (wait about an hour between waterings, so the water has a chance to soak in, before more water is applied.) Long watering times on slopes will just cause runoff, and waste a lot of water. Water running down the gutter is not doing anyone any good. Watering more frequently, for shorter periods of time, insures water penetration, avoids runoff, and keeps a lawn healthy.

However, watering once in the morning, and once in the evening, causes shallow water penetration and actually

increases the stresses on your grass, instead of helping with the water penetration problems.

If you are watering more than once a day, 'Schedule watering times one hour apart,' and remember, 'Do not water your lawn every day,' even in the hot summer weather.

You may need to hand water a few dry spots in the lawn, in between your regular watering schedule.



If possible, water your lawn between the hours of 2am and 9am for best use of water, and for best results on your lawn.

Water restrictions may change the days, or the hours, that you are allowed to water, so make sure you are watering in accordance with any water regulations.

Suggested watering frequencies, and minutes of watering are not absolute. They require many judgment calls. When irrigating your lawn, consider these factors; high wind, rain, temperature, the condition of your sprinkler system, and the kind of soil you have. All of these factors play an important part in making your watering decisions.

Properly maintained lawns will require less water than neglected lawns. Mow grass longer in the hot summer weather. It helps to reduce moisture loss, helps shade the plant's roots, and helps reduce stress to your lawn.

Be sure your sprinkler system is properly tuned, and don't water in the rain! Try to water when temperatures are cooler, and when the winds are calmer.

Flowers and Vegetables

Flower gardens and vegetable gardens are often watered the same as lawns. If this works for you, and you're happy with the results, then stick with it.

If not, consider that overhead sprinkling of these plants can cause problems like misshapen fruit, blossom rot, stem rot, leaf spot, and other fungus problems, especially in hot weather. It also encourages plant pests, such as aphids.

Plants with large leaves may shed the water, and prevent their roots from getting a sufficient amount of moisture. If you don't have good drainage in your flower beds, and vegetable gardens, the soil may become soggy if you give them the same amount of water that you give your lawn. Soggy, or wet soils, can cause iron chlorosis and root rot.

If you are having any of these problems, consider switching to furrow irrigation, soaker lines, drip irrigation, bubbler irrigation, or just changing the water zone in your sprinkler system, so you are not watering them as often.



In any event, applying water directly to the root zone, instead of to the leaves, will help reduce watering frequency, and the amount of water needed for most flowers and vegetables, even in hot summer weather.

You can also use **Top-Mulches** to help reduce water loss, to help reduce your watering frequency, and to help conserve water. Cover the planting beds with at least an half inch of organic mulch, an inch or two is even better.

Permeable fabric such as weedcloth, is another excellent

way to reduce water loss. Do not use regular plastic sheeting because it repels water, it does not allow for even water penetration, and it does not allow oxygen to enter the soil.

Try not to water more often than every 2 or 3 days during the hot summer weather. Water even less during the spring, when the plants are still small, and soil evaporation is minimal because of cooler temperatures. Keep your soil evenly moist for the first few weeks after planting, so the new shallow-rooted plants can become established. Once established, try to cut back on the frequency that you water as soon as your plants can tolerate it.



Shrubs and Trees

Shrubs and trees have a deep, extensive root system. They have a different water requirement than lawns or flowers. If possible, have them on a different valve, or in a different time zone in your irrigation system.

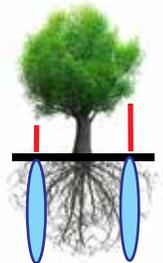


Do not just rely on your sprinklers to water your trees and shrubs correctly; you may need to water them, with a hose, once or twice a month during the hot summer weather.

Newly planted trees and shrubs should be watered two or three times a week until they are established (usually about 4 to 6 weeks)

Established trees should only need water once a month in the spring, and twice a month in summer. Established shrubs should only need water once every other week in the spring and once a week in the summer.

A good rule of thumb is 1-2 gallons of water for smaller plants, 3-5 gallons for larger shrubs, 10 gallons of water for a small tree, and 20 gallons of water for any large trees each time you water.



Remember that the watering frequency and the duration of watering is based on many variables. Things like the type of plant, the time of year, the soil type (sand, clay or loam), and the plant location (sun, shade, slope, etc.), should all play a part in your watering decisions.

For best results, get to know your plants and experiment - In The Spring!

An inexpensive **Moisture Meter** may be a great help in determining the moisture content, and distribution of water, in your soil.

Do not just water all plants the same.

1. One plant can be getting more water than another plant, just a foot or two apart.

2. One type of plant may need twice as much water as the plant next to it, just because of its very nature.



Container Plants

Container plants have small amounts of soil, and generally need more frequent watering schedules than those planted in the landscape, especially during our hot summer weather.

If watering by hand, keep a close watch on your plants. Drip emitters and soaker lines can be adapted to hose bibs to water plants on a porch or patio, and do a good job wa-

tering container plants throughout the yard, as long as you monitor them on a regular basis. With an automatic watering system you can check your plants often, instead of having to water them too frequently - just be careful not to neglect them a day too long!



Plants in clay pots breathe and dry out quickly.

Plants in plastic pots retain water and do not dry out as fast. Because of these varying factors there is not one 'clear-cut' watering routine for all container plants.



Photo Credit: Proven Winners

Plants in the sun will need to be watered more frequently than those in the shade. Low humidity and hot winds will also dry them out more quickly. Many container plants need to be watered every day during the heat of the summer. Sometimes these same containers may need to be watered twice in one day if the conditions warrant it. You may want to move containers into a more cool, shady location during the heat of the summer if watering them becomes a problem.



Photo Credit: Proven Winners

How much water is enough? Water all your pots until water flows out the bottom; enough water to fill your saucer. Be sure to empty your saucers about one hour after watering your containers.

If the pot remains in standing water, the soil may become waterlogged, and your plant may suffocate and die.

If, on the other hand, a container completely dries out, the soil ball will shrink, and the water will go out along the edge of the pot and down to the bottom, instead of soaking into the soil.

A 'dry' pot will need to be completely soaked in the bathtub, or in another container of water, for about 30-60 minutes. It takes that long for the soil to soak in all the water it needs to re-wet the soil. If the 'dry' pot is too large to move, water the pot every 10 or 15 minutes for at least an hour.



A rule of thumb is: The smaller the pot the more often you need to water it. Buy a moisture meter to help you determine your best watering schedule.

Water saving tips:

Mix **Soil Moist Crystals** in your potting soil before planting your containers. These polymer crystals absorb water like a sponge, and then slowly release the water as the soil starts to dry out. This storage and release process can reduce water loss by 50% to 75%, particularly on hot, dry days.



Mix **Coconut Fiber** with your potting soil to help hold water longer. Coconut fiber retains more moisture than the traditional peatmoss does.

Put a one inch layer of moss, bark, or a coarse mulch on top of the soil, to help conserve moisture loss. A **Top-Mulch** helps cool the soil and helps prevent water from evaporating from the soil surface.

PVC pipes, which are capped on one end and with holes drilled along its length, can help you water large con-

tainers more effectively. Put the pipe in the center of the container (leave it in the pot the entire summer). Pouring water through the pipe helps distribute water deeply into the large containers. This method helps maintain moisture around the root system and helps the soil stay evenly moist; top to bottom.



Xeriscape

Xeriscape does not mean Zero Scape.

Xeriscape does not mean that you have to plant all desert plants, native plants, or that most of the area is just rocks, dirt, or gravel. Xeriscape is the concept of grouping plants that have similar water requirements into the same areas and watering them according to their needs. Xeriscape also does not mean lawn-less landscapes, it may just mean less-lawn landscapes.

If you plan your garden before you plant your garden you can find out which plants need similar water conditions as other plants that will be near them. You can have a lush, high-water use oasis in the middle of a dry (Xeric) rock garden, and still have a functional Xeriscape.



Plan your garden by evaluating and improving the soil conditions before you plant your garden. Soil improvements may be as simple as adding extra organic matter, polymer water absorbing crystals, or just changing the slope or drainage pattern of a particular area.

Plan your lawn areas by choosing water saving varieties of grasses such as perennial ryegrass, tall fescue, hard fescue, turtle turf grass, or some other water efficient groundcovers. You can even enjoy a traditional bluegrass lawn if you limit the area planted. Ask yourself how often you walk on your lawn. If you only walk on the lawn, in a certain area, to mow it, maybe it would be better to plant it in a different type of plant.



Plan your garden areas by designing a sprinkler system to match the types of plants you plant. Then, irrigate your garden as conditions dictate, not on a fixed schedule.



Keep different water-use plants on different time zones in your sprinkler design. Apply as much water that can be absorbed before runoff occurs, and then only water again when the soil dries out to your pre-determined moisture level.

Watering an Xeriscape garden is not an exact science, it requires educated guessing on a regular basis. Unfortunately, if you apply too little water, or apply the right amount of water too slowly, the results of your water conservation may show up as a few dead plants in the garden. Be sure to monitor your gardens regularly, especially if you are watering them with an automatic drip irrigation system.

Plant your garden areas by covering them with organic mulches to reduce surface evaporation. You can also cover the ground with inorganic mulches such as gravel or larger rocks.

Page 3 Cover the ground with a breathable fabric before you mulch

the beds with rocks. Do not use impermeable plastic sheeting to cover your mulched areas.

Maintain your Xeriscape garden with proper pruning, weeding, mowing, fertilizing, and watering practices. A well designed Xeriscape not only conserves water and reduces maintenance, it is also aesthetically pleasing to the eye.



How Much Water is Enough?

As a rule, most older plants need 1 to 2 inches water a week. Apply 1 inch of water twice a week, perhaps a little more if it is hot and windy.

This means watering your plants deeply enough to saturate the soil to the entire root level, once or twice a week, or whenever the soil dries too much.

Newly planted plants need watering a little more frequently than older, established plants.

Soil that drains too quickly may leave your plants struggling to survive, and may require more frequent watering. In extremely gravelly or sandy soil, this could mean watering more than once or twice a week.

Examples of How Much Water:

An older, low-water-need plant (one that needs 1" of water per week) with a root system that is 5' wide needs about 15 gallons of water per week.

Calculation: (5'x5' root system) = 25 square feet x (1/12' water) = 2.08 cubic feet of water = 15 gallons of water.

1 cubic foot equals 7.48 gallons of water.

A normal-water-need plant (one that needs 2" of water per week) - the same size - needs about 30 gallons of water per week.

Tree Example: A Medium Sized Tree needs about 180 gallons of water per week.

(12'x12' root system) = 144 square feet x (2/12' water) = 24 cubic feet of water = 180 gallons of water per week.

How long does it take to water plants?

Most garden hoses give 5 to 7 gallons of water per minute, but to be exact, you can do some math.

Determine how long it takes to fill a 5 gallon bucket with your hose (make sure it is not a 4 or 4.5 gallon bucket).

Divide 5 gallons by the seconds it took to fill it - then multiply by 60 seconds. This will give you the gallons per minute going through your hose.

Example: 40 seconds to fill the 5 gallon bucket. (5 gallons ÷ 40 seconds x 60 seconds = 7.5 gallons per minute)

It will take 2 minutes (not 30 seconds) to give your low-water plant 15 gallons of water, or, 24 minutes (not 10 minutes) to give your tree 180 gallons of water.

Drip Irrigation Systems - Good or Bad?

If A plant needs 15 gallons of water.

If One drip emitter allows 1 gallon per hour.

One emitter would take 15 hours to water the plant, or

10 emitters would take 1.5 hours to water the plant.

Make sure you use enough emitters, and allow enough time, for your drip system to apply the correct amount of water for each plant. Remember, not all plants need the same amount of water.

Other Factors

The amount of water your plants need changes as they grow. While small plants in 4- to 6-inch pots may require only 1 to 2 cups of water when first planted, a full-grown tomato plant may require 1 to 3 gallons of water each time you water.

The need for water also increases during periods of rapid growth. After you fertilize plants, you need to water a little more, because of the added growth.

In the fall, as the weather cools, plants need less-water: not no-water. Continue watering plants, enough to keep the soil moist, until the plants go dormant, and the weather provides adequate moisture naturally. They do not usually require a lot of water, just a consistent water schedule.

You may also need to water some plants occasionally during a dry winter.



Summary

Some of the Primary factors to consider when you are trying to determine 'How Much Should You Water?'

Season. Plants do not need a lot of water in the cool months. They need more water in late-spring and even more in the summer when active growth is underway. Adjust your watering system to account for these varying needs.

Weather Conditions. Windy weather will dry out your soil and your lawn. In periods of high wind, you may need to increase your watering. Conversely, during periods of rainy or cool weather, turn off your sprinklers.

Soil type. Clay, sand, and loam all have different water holding capacities and drainage rates. You should learn the soil types in your yard and then you will be able to determine the best watering schedule for each area.

Location. Is the planting on a shady porch or in a hot sunny area? The location will change the amount of water the plants need, and the frequency the plants will need to be watered.

Type of Plant. Understanding the water needs of different plant groups, and the nature of their growth habits, will help you to be more successful in determining the water needs of your plants.

Reset frequently. Adjust irrigation schedules monthly, or even weekly, based on weather conditions such as rainfall, temperature and season.



Do Not Stop Watering Plants Just Because The Irrigation Water Is Turned Off in October. Watch the weather to determine your plant's watering needs.

As you can see, there are many factors that you need to take into consideration as you determine how much water each plant in your yard requires.

There is not one set method to water all plants, all year long. Adjust your watering schedule as often as the conditions change: Daily; Weekly; Monthly.

Plants can be forgiving, but they do have their limits, and there is a point where they cannot recover from either too much, too little, or too late watering.