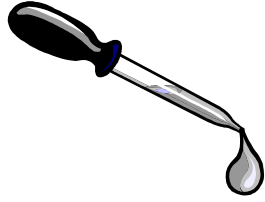


WATER - our MOUNTAIN GOLD



Suggestions from the
Central Sierra Watershed Committee

Drip, Drip, Drip

Water Conservation & Drip Irrigation in Your Garden

Water Shortages & Drought Conditions

During times of water shortages and drought conditions there are many ways to conserve water in your garden. The plants you choose for your landscape and the soil in which they are planted also affect your water use. The amount and frequency of watering a plant is determined by the type of plant you choose, its age, depth of roots, soil type, and the weather. Lawn areas, while delightfully green and cool looking, demand heavy water volume. Consider alternate, drought resistant groundcovers, or paving materials such as gravel, decomposed granite, pavers, or brick. Soils rich in organic matter retain moisture well, while sandy soils drain rapidly and heavy clay soils absorb water very slowly. Drainage of both sandy and clay soils can be improved by adding organic soil amendments.

Saving Water in the Landscape

One of the best ways to save water in the landscape is the installation of a drip irrigation system. Drip irrigation helps to eliminate wasteful water runoff. Conventional sprinkler systems often waste water by spraying onto sidewalks, patios and driveways. Downhill slopes and areas with heavy clay soil that do not absorb water readily also tend to cause runoff. Your existing underground sprinkler system can be upgraded by installing low-volume sprinkler nozzles or you can retrofit it to a drip setup. Conversely, the underground system can be abandoned and new drip used to replace it.

Drip Irrigation System

A drip irrigation system is composed of ½" polyethylene tubing with drip emitters, which are punched into the tubing that lies next to your plants. The emitters apply water to the plants at rates of ½ gal, 1 gal, or 2 gallons per hour. Other options for your drip systems include tubing with in-line emitters, installed at regular intervals such as 6" or 12" at the factory. Pressure compensating emitters will deliver equal amounts of water to plants lying on hillsides or when there are long stretches of drip line. Microspray emitters deliver higher volumes of water in a fine spray and are mounted on risers or pop-up heads, much like regular in-ground sprinklers that are also available. Drip systems should be connected to a backflow prevention device at the water connection to keep irrigation water from flowing back into your domestic water supply. They also usually require a pressure regulator to reduce water pressure, which prevents emitters and connections from blowing apart and helps the system to work properly. Finally, installation of a Y-filter prevents emitters from clogging with sand or other small particle and must be cleaned regularly.

Timers

Timers attached to your drip system can also effectively reduce water use, if they are properly monitored and maintained. There are numerous options available:

- 1) Mechanical timers, which are installed on the faucet and set for the amount of time you want the water on, and then turns it off automatically. The drawback is that you have to be home to turn the timer on.
- 2) Battery-operated timers, which are programmed to turn the water on and off. These timers will turn the water both on and off at the times you have set. The disadvantage is that you must remember to check and replace the batteries periodically.
- 3) Automatic timers, which run off household electrical current, are wired to anti-siphon irrigation valves. They still depend on batteries to operate the timer clock if the electricity fails. The downside of automatic controllers is that they will water for the length of time set regardless of changes in weather. If you forget to reset your timer seasonally, your landscape may be over or underwatered and you may find your sprinklers running in the middle of a rainstorm. To offset this problem there are electronic moisture sensors, which tell the irrigation to turn on when the soil reaches a certain level of dryness. Rain shut-off

devices, conversely tell the watering system to shut down, when their rain collectors accumulate a certain level of water.

Advantages of drip:

- 1) Drip is easy to install. You can attach drip tubing to a hose end or faucet, or it can be connected to your main water system.
- 2) It delivers water just where it is wanted rather than spraying a large area, which results in weeds sprouting over the entire area.
- 3) Drip eliminates runoff or droplets carried off by wind.
- 4) Drip sprayers are available for plants that like overhead watering, like groundcovers and tropical plants.
- 5) Making changes to a drip system is quick and simple, because the drip line is more accessible. Leaks are easy to repair with “goof plugs” and require no gluing.

Disadvantages of drip: There are some disadvantages to drip systems.

- 1) Small or large critters, like your dog, may decide that your tubing tastes like pasta *al dente* and you won't discover the leak because you have wisely set the timer to run early in the morning, but have unwisely forgotten to regularly check to make sure that there are no leaks, until your well pump shuts down.
- 2) Drip systems require more maintenance. In addition to checking your system regularly, the Y-filter needs to be cleaned to prevent clogging of the drip emitters.
- 3) Drip tubing shows above ground unless you mulch over it or bury it, in which case a leak may go undetected, and it is harder to see emitters which may have stopped functioning due to clogging. Underground leaks can also be a problem in conventional “hard pipe” systems, but leaks are usually more apparent.

There is no substitute for careful and frequent observation of your garden's plants and watering system.

You *can* waste water with a drip system if it is not operated or maintained properly. Over watering may still occur if you allow the system to run longer than is necessary to reach your plants' feeder roots. Most roots are within the top 2' of soil, except for taproots that can extend much farther. Also, the roots will often spread well beyond the plant's leafy edges or canopy, so emitters should be moved outward as your plants grow. Many native plants need no additional water besides seasonal rains after they are a couple of years old.

TIPS for

WATER CONSERVATION: *Don't water if it rains; Use drought tolerant plants in new landscaping; Reduce lawn area; Wait until fall or winter to start new gardens; Use compost or other mulches; Watch your plants to plan timed watering.*

The CSWC meets on the last Wednesday of every month at the Sierra Ambulance Office, 40755 Winding Way, Oakhurst, at 9 AM, and is open to the public. For information, please email leavesofgrass@netpc.net.

The mission of the Central Sierra Watershed Committee is to promote the quality, quantity, and aesthetic values of our water resources through the conservation and restoration of our watersheds.

CSWC members include: Interested citizens, ranchers, homeowners; local Native American tribes; North Fork Community Development Council; Chowchilla-Redtop and Coarsegold Resource Conservation Districts; Chowchilla City Council; Upper Merced River Watershed Council; California Water Institute; Sierra Foothill Conservancy; Madera Irrigation District; Yosemite Sequoia Resource Conservation & Development Council; US Army Corps of Engineers; Regional Water Quality Control Board; Madera County Environmental Health & Engineering; CA Department of Water Resources; Madera County Board of Supervisors; Madera Agriculture Commissioner; San Joaquin Valley Air Pollution Control District; Natural Resource Conservation Service; and the United States Forest Service.

Note: The contents of this article do not necessarily reflect the views of the State.