

Saving Water and Money in the Garden

By Rebecca Miller-Cripps

In light of recent publicity regarding local water rate increases, the time is right to talk about saving water and money. Half of California's water is used outdoors. Saving water outdoors will also save money in your budget. Here are some tips for saving water in your lawn and garden.

Water in the outdoors "disappears" by three methods. It soaks into the ground (infiltration), it evaporates into warm air or wind (evaporation), or plants take the water up through their roots, use it in metabolic processes, and release it as water vapor through their leaves (transpiration).

Infiltration: Water that soaks below the plant's root zone is lost to the plant's use. Don't pay for water your plants can't use. Check the depth of your watering. A long screwdriver blade will penetrate easily into damp soil. Use it to gauge how deeply you're watering.

Typical lawn turf roots about eight inches deep; there's no need to soak the soil below that level. **For typical soils, applying two inches of water to the surface will soak about eight inches into the soil.** Deeper-rooted shrubs or flowers can be individually watered with a drip system, watering can, or hose.

Infiltration is affected by the type of soil you have.

- **Clay**, with a basic intake rate of **1/10 of an inch per hour**, will take ten hours to absorb an inch of water.
- **Loam** absorbs water at a rate of **1/3 inch per hour**, and
- **Sand** can accept **2/3 of an inch per hour**.

Putting water on faster than the intake rate causes runoff and wasted water.

To increase infiltration rates in clay soil and to help sandy soil retain water, **add organic material to your soil.** Compost, home-made or purchased, makes clay soils airy so they drain and gives sandy soils body to hold moisture. Compost also reduces water demands, controls soil erosion, and reduces plant stress from drought.

Evaporation: Factors such as air temperature, humidity, sunlight, and wind remove water from bare soil. To combat evaporation, plant closely enough that plants shade the soil. Another way to slow evaporation is to **mulch, mulch, mulch, mulch!** Partially broken-down compost makes great mulch and, as it continues to break down, adds nutrients to the soil. The addition of mulch to the surface can reduce your plant water needs by more than half.

Transpiration: Water given off by plant leaves. Plants use water for three basic purposes—to carry dissolved minerals and nutrients, to maintain physical shape and growth, and to control leaf temperature. The amount of water needed varies by species of

plant, the time of year, the amount of sunlight, air temperature, etc. Turf grasses use about a quarter inch of water per day during the hottest part of the summer. So, to replace that two inches of water per week, put an inch of water on every four days during the peak heat season. In the Sierra foothills, **July is the month with the highest temperatures and the highest evapotranspiration rates.**

- **Apply only as much water as needed.** Too much water in the root zone for long periods can also be damaging to plants due to a reduction in oxygen around the root hairs. This can occur when irrigation is performed too frequently in an amount too great for the plant to remove and use.
- **Drought-tolerant plants** adopt a number of strategies to **reduce water loss**—deep taproots to find water at greater soil depths; fine, silvery leaf hairs to reduce wind flow; or a waxy coating to reduce water evaporation from leaf surfaces. Consider replacing some of your plantings with drought-tolerant natives.
- **Consider reducing the size of your lawn.** This is not England—with its damp, foggy weather pattern that reduces transpiration. Grass is one of the biggest water losers around. In fact, the reference standard for evapotranspiration (against which all other plants are measured) is turf grass completely covering the ground to a depth of four to six inches.
- **Check your sprinklers for leaks, broken heads, misaligned spray patterns and run-off.** If you're getting run-off, schedule your sprinklers to run more often for shorter periods of time (cycling).
- For more information, go to www.ipm.ucdavis.edu and click on “UC Guide to Healthy Lawns” to learn more about irrigating your lawn. Or, go to www.tudwater.com and click on “Water Conservation” to learn more about water savings outdoors.
- **AND YOU CAN CALL MASTER GARDENERS AT 533-5696. WE WILL COME TO YOUR HOUSE, AT NOT COST, TO HELP DETERMINE IF YOUR SPRINKLER SYSTEM IS OPERATING EFFECTIVELY.**

Rebecca Miller-Cripps is the Tuolumne County Master Gardener Program Coordinator.