

✧ Renee's Garden ✧

Set The Table From Your Garden

Drought – Plant Vegetables Now More Than Ever

By guest author Rosalind Creasy

This month's lead article is courtesy of my good friend, Rosalind Creasy, a pioneer in the field of sustainable and edible landscaping design and author of the *Complete Book of Edible Landscaping* and 18 other great gardening books. By necessity, she has had to guide her many clients through three major California droughts and shares some of her expertise here.

Drought in California and other parts of the country is inevitable, and this year it's a "doozy." How can we all use our water more wisely for now and in the future? Cut down on the size of our lawns, for sure. Use drip more, Yes!

Recycle water, Yes. Plant lots of vegetables and fruits, Yes!! According to www.Treehugger.com growing the average pound of lettuce commercially uses 15 gallons of water, tomatoes 22 gallons, and a pound of potatoes 30 gallons. Years ago, John Jeavons, author of the best selling *How to Grow More Vegetables*, concluded that the home gardener, using organic techniques to grow edibles, uses between one quarter to an eighth as much water as does the farmer.

More recently he has determined that on average, using his Biointensive system, the home gardener can use as little as 12% of the water per pound of vegetables produced. See the [Common Ground Website](#) for more information.



When you use drip irrigation, home-grown vegetables use considerably less water.

Before we discuss edibles let's first look at the ways you can globally save water. In the house, if you have not already done so: dishwashers are the most efficient way to wash dishes if you don't pre-rinse dishes and run your dishwasher only when full. Install low flush toilets, water efficient washing machines, and take shorter showers. For more global ways to save water in the house, go to the websites of your local water district or check these out: [Santa Clara Valley Water District](#) and the [Environmental Protection Agency](#).

Saving water in the landscape - It is easy to use more than half of your household's water on landscaping so the biggest water savings can be made here. Below are some ways to cut down on water use in the garden.

Incorporate organic matter in your soil - A 3-inch layer of compost turned into your soil at a 6-inch depth (about a shovel blade depth) is estimated to increase the water holding capacity of that soil 2.5 times more than it would normally hold. Soils augmented in this manner can provide plants with water for up to a week between watering. The Rodale Institute has a simple equation: 1 pound of carbon (aka compost) equals 40 pounds of water retention.

Mulch heavily - Use garden compost, very well composted manure, pine needles, aged sawdust, fall leaves, and/or straw to mulch. For annual flowers and vegetables make sure that your compost is well aged or the soil microbes will rob the soil of needed nitrogen. The looser the material the more you need to watch for slugs and snails that can hide in the mulch. Keep the mulch 6" away from the crown of annuals, and shrub and tree trunks, to prevent diseases.

Water deeply and infrequently - Surface roots dry out faster than those at least 6" deep. Set your irrigation timer to water for shorter periods of time and water a second time a few hours later, this way the water will penetrate more deeply. Most irrigation timers can be set to do this.



Vegetables like peppers and zucchini use far less water when you incorporate generous amounts of organic matter into the soil and cover the soil with mulch. Add drip irrigation and you can grow vegetables using far less water than farmers do.

A great tool to make sure your plants are watered properly is a soil probe. Push the probe into the soil as far as you can, 6 inches to a foot deep or more, remove it and look at the sample and see if it contains damp or dry soil. And use the Internet to help you identify hydrophobic soil. When soil gets very dry it actually sheds water just like a dry sponge and you need to apply water slowly and let it be absorbed or most of your water will uselessly drain away. If you don't want to invest in a soil probe, just use a shovel and open and inspect a slice of soil 6 to 8 inches down.

Install a drip system – Use drip for shrub borders, fruit trees, flower beds, and vegetable gardens. Drip irrigation is dramatically more efficient than overhead sprinklers; some experts say as much as 50%. Further, it cuts down on weeds, water runoff, and fungal diseases. That said, a well-thought out system will save many headaches. To be realistic, drip takes effort to install and attention to keep it running well. Just remember that overhead irrigation leaks equate 2 gallons per minute, whereas leaks in a drip system amount to gallons per hour, so much less water is wasted when you do spring a leak!

Helpful Drip Irrigation Hints:

1. Avoid cheap irrigation “kits” available from some of the discount stores and online sources. They can be unreliable. I find cheap tubing expands in hot weather forcing the emitters to pop off, and it is hard to find parts to repair this kind of system. Instead, I recommend professional grade in-line emitters that drip water from holes in the line rather than a solid tubing system with installed emitters.
3. Choose “shrubblers” and micro-sprayers for annuals in containers; look for flow control so you can adjust the water pattern for changing individual plants.
4. Install a good filter and change it every few months.
5. Cover the tubing with mulch, not only because it looks better, but because it protects the plastic from ultraviolet light so it will last longer.
6. Run the system every few weeks to make sure that are no leaks or clogs.

You can have an irrigation specialist install your system or for DIY, go to local plumbing supply store, most will give you help and sell drip parts, or seek out information on line. [Dripworks](#), [The Urban Farmer Store](#), [Peaceful Valley Farm Supply](#) and [Harmony Farm Supply](#) all have information for installing drip, watering schedules, and lots of equipment options.

Deep water trees and shrubs – Deep root-watering large trees is much more efficient than most irrigation techniques as it distributes water a foot or more below the surface. Done properly it eliminates surface run off and reduces erosion and evaporation. You can use an old plastic garbage can with a few holes in the bottom. Move it to the drip line and fill it with water and let it slowly leak into the soil, when it's empty move it to another quadrant or leave several outside along the edge of the branches (root zone) of fruit trees This allows for slow, deep watering of the tree roots. And fruit trees love graywater!!



A large flower/vegetable bed is part of Rosalind Creasy's water-saving front yard.

Use graywater when possible – Graywater is defined as relatively clean wastewater from showers, baths, sinks, and washing machines. It is water that contains some soap and detergents but is clean enough to water plants. *Important:* water from toilets or wash water from diapers is never considered graywater. Kitchen sink water is not considered graywater in California. While it is not recommended to irrigate the edible portion of a crop with graywater, it is perfect for plants with large root masses, such as fruit trees, berry bushes, artichokes, and other tall plants where the edible food is located off of the ground. Many water districts give classes on graywater use. Avoid laundry soaps that contain sodium, salt compounds and boron which can damage plants. For much more information on graywater and soap brands consult www.greywateraction.org.

Recycle unused potable water I keep a few plastic gallon buckets available from paint and hardware stores near my kitchen and bathroom sinks and put the buckets under the faucet when I'm waiting for the water to heat up in the sink or shower and then later use this water when watering edible plants.

Install rain barrels – What you say? Why have rain barrels when we are getting so little rain? Yes, I use two 75 gallon barrels all year long to store rainwater to irrigate my plants. [Gardeners Supply](#) or [The Urban Farmer Store](#) or have a diagram and guidelines on how to best use rainwater.



All my favorite culinary herbs can be grown in a few recycled wine barrels. Notice that there's a smaller one nested on top of a large barrel. Here Thai basil, chives, savory, tarragon, sage, French sorrel, and thyme are grouped together and watered by drip irrigation on an automatic timer that comes on twice a day for 5 minutes all summer. A bonus container of strawberries is on the same system.