

The Press Democrat  
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## **ADVICE TO GROW BY » MASTER GARDENERS**

### **How to measure the moisture in your soil during drought**

**Question: I know we are in a serious drought this year and I want to save water, but I don't want my plants to die, either. How can I tell if I'm giving them enough water?**

Answer: Great question and one that is on everyone's minds right now! The answer depends on the types of soil and plants you have in your yard and the amount of sun they get each day.

Your soil type may be sand, silt, clay or loam or a combination of these types. Water moves quickly through sandy soil but moves slowly through clay soil. Clay retains a significant amount of moisture, while sandy soil dries out quickly. In general, water sandy soil quickly, for short periods. Water clay soils slowly, until the soil no longer absorbs water and the water begins to run off.

Try this experiment in your yard: Water your soil as you normally would, then after an hour, dig down 6 to 8 inches to see how far the water soaked in. If the water in your garden reaches below the root zone of your plants, you are wasting water.

Overhead sprinklers spray water into the air, where it evaporates, or onto sidewalks, driveways and tree trunks. The most efficient way to give your plants water is with drip irrigation.

After July, even though it's still hot, the days are getting shorter and plants need less water. If you watered for 10 minutes in July, you may be able to cut back to 8 minutes in August and 6 in September.

Unlike young trees which require frequent watering to thrive, mature trees prefer less frequent but deeper watering in the summer. Native trees and shrubs are drought tolerant. Depending on rainfall in the winter, they require either no water or water once or twice over the summer months. Native oaks should not be watered in the summer.

Check with your water supply agency for current water-use restrictions.

Here are some useful websites to visit:

**How to program your irrigation controller:** [bit.ly/3xj0Fko](https://bit.ly/3xj0Fko)

**Santa Rosa Water Smart:** [srcity.org/820/WaterSmart-Center](https://srcity.org/820/WaterSmart-Center)

**Question: Everyone says zucchini is easy to grow, but the leaves of my zucchini are covered with a white powdery substance and the young squashes rot from the flowering end. What should I do?**

Answer: It sounds like your zucchini are suffering from a combination of powdery mildew and blossom end rot. These are two very different maladies that you can treat by improving your plants' growing conditions.

Powdery mildew is a fungal pathogen that, given the chance, will colonize an array of vegetables, such as artichokes, beans, beets, carrots, cucumbers, eggplants, lettuce, melons, peppers, radishes, squash, tomatoes and more. It thrives in our Mediterranean climate because it does not require moist conditions and favors the warm days of summer.

Powdery mildew on cucurbits (cucumbers, melons, squashes and pumpkins) first appears as pale-yellow spots on stems and leaves. The spots enlarge as a fluffy white fungal mat (mycelium) that grows and produces powdery spores. The affected leaves appear dull and start to fade, eventually becoming brown and papery. Plant death often occurs at this stage.

The best way to beat powdery mildew is to avoid the conditions that cause it. Start by controlling weeds and removing garden debris that harbors powdery mildew spores. Grow your zucchini plants in full sun, with adequate spacing between plants to allow for air circulation. Look for and plant varieties of zucchini that are resistant to powdery mildew.

We don't recommend overhead sprinkling because it may encourage other pathogens or plant pests. Organic fungicide treatments like sulfur can be used as a preventative or to treat an infection but must be applied no later than at the first sign of the disease. Once mildew growth is extensive, it's more difficult to control with fungicides.

Blossom end rot is a disorder of cucurbits, tomatoes, eggplants and peppers. It first appears as light-brown spots at the blossom end of immature fruit that expand to form a sunken, leathery dark lesion. Fruits with blossom end rot have a calcium deficiency. However, adding calcium, either by soil application or foliar sprays, does not help.

Blossom end rot is a physiological response to environmental stresses, such as drought, soil salinity, intense light, heat and over-fertilizing. You must address these factors to resolve the issue.

To avoid blossom end rot, take steps to decrease plant stress. In particular, avoid soil moisture fluctuations. Between waterings, do not allow the soil to completely dry out

or remain saturated. If using nitrogen fertilizer, use it only in accordance with package directions.

For more information on powdery mildew and blossom end rot, visit the University of California's Integrated Pest Management Program website at [bit.ly/2RRlsw5](http://bit.ly/2RRlsw5) for information on powdery mildew and [bit.ly/3pNFUL3](http://bit.ly/3pNFUL3) for blossom end rot.

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Save water in your garden this July by taking these steps:

- Check, adjust and repair irrigation pipes, valves and sprinkler heads to eliminate clogs or leaks.
- Convert sprinkler or bubbler heads to drip irrigation wherever possible.
- Water early, in the coolest part of the day (2 to 7 a.m.), and use just enough to keep your plants alive.
- Water the roots and not the leaves of plants.
- Prioritize which plants should get water. Assign highest priority to trees and shrubs. They provide shade, clean the air, are expensive to replace and take years to mature.
- Consider letting go of high-water use plants. You can replace them in the fall with drought-tolerant plants. Do not water lawns.
- Pull weeds that compete with your plants for water and nutrients.
- Provide a shallow water source, such as a bird bath, for thirsty birds and bees. Place some rocks and stones along the edges so insects can reach the water without risk of drowning.
- Cut or pinch flowers off basil plants so the energy continues to go into the parts you want to eat. When harvesting individual leaves, remember that the lower leaves are the oldest.
- Keep an eye on summer squashes such as zucchini, crookneck and pattypan; harvest when they are small and still tender.
- Dig up overcrowded bulbs after their foliage dies. Store them in a cool, dry place for fall replanting.
- To force new foliage and encourage repeat blooms, cut back perennials such as nepeta, daisies and penstemon.
- To stimulate additional blooms, deadhead plants that have a long bloom season, such as roses, dahlias, marigolds, coneflowers and geraniums.

*Contributors to this week's column are Janet Bair, Pat Decker, Karen Felker, Mary Lou Milkoff, Laura Southworth and Debbie Westrick. Send your gardening questions to [scmgpd@gmail.com](mailto:scmgpd@gmail.com). The UC Master Gardener Program of Sonoma County ([sonomamg.ucanr.edu](http://sonomamg.ucanr.edu)) provides environmentally sustainable, science-based horticultural information to Sonoma County home gardeners. The Master Gardeners will answer in the newspaper only questions selected for this column. Other questions may be directed to their information desk at 707-565-2608 or [mgsonoma@ucanr.edu](mailto:mgsonoma@ucanr.edu).*

