

## A Greener View: Blossom-end rot is the culprit

*by Jeff\_Rugg*

Q: Last year my tomatoes would ripen and mature but the entire bottom was black. This did not happen the previous two years.

A: Blossom-end rot is an environmental disease that affects tomatoes, peppers, squash and watermelon. It is caused by lack of calcium in the fruit because the roots of the plant are having problems taking calcium from the soil. A small area at the bottom of the fruit can be affected or most of the fruit can rot. Mold can sometimes be seen growing on the damaged area.

Roots are damaged in five ways. Extreme fluctuations in soil moisture from very wet to very dry is first. Water more often and evenly when the weather is dry and add more mulch to keep the soil damp between waterings.

Too much nitrogen fertilizer or fresh manure will cause the plant to grow too fast, which tends to slow down later in the season. Very often this results in blossom-end rot early in the season and then it goes away on its own.

Excessive water in the soil from rain or irrigation drowns root hairs that the plant needs to take in the calcium. Plant these crops in well-drained soils, or cut back on the irrigation.

Too much salt in the soil kills the roots. Plant in better soil or flush out the salts by applying more water, but not in poorly-drained soils or else you will have the previous problem.

Lastly, roots can be damaged through weeding or cultivating the soil too close to the plant. Don't go deeper than an inch within a foot or two of the stem.

Q: My question is due to the drought and water restrictions. Can I safely use water caught in a bucket while I shower to water my outside plants? While I know about using a dish soap mix for insect control, is bath soap (Dove or Olay body wash) OK too?

A: Let's take your questions in reverse order. Typical bath soaps and shampoos will be diluted enough to not harm the plants and microorganisms in your landscape. Toilet bowl cleaners, powdered sink cleaners, drain pipe plungers and chlorine-laden products will be bad for the plants.

Don't use anti-microbial soaps because they could reduce the number of beneficial bacteria in the soil. They are not more effective at hand cleaning or bacteria reduction on your hands than regular soap and in fact, could allow resistant strains of bacteria to develop.

As you mention, dish soap is sometimes recommended as an insect control chemical. There are insect controlling soap products that have been evaluated and approved for that use by the EPA. Dish soaps have not been approved for this use. They have other chemicals, such as skin softeners and fragrances that may not be appropriate for garden use.

You can follow label directions of the insecticidal soap and know that it will not hurt your garden and landscape plants. Since there are no evaluated and approved instructions for using dish soap, you can't tell under what circumstances it will harm your plants. The amount of soap in your bath water will not reduce the insect population in your garden. While I don't believe it will hurt your plants, and I know that isn't what you asked, I can't recommend applying any bath or dish soaps to the landscape as an insecticide.

I also cannot recommend that you do what you want to do from a safety standpoint as I will describe below, but first let me define some terms.

Wash water is known as gray water. It is all of the water from household use except from toilets and garbage disposals which is known as black water. Gray water is a valuable resource and it is used to irrigate golf courses and agricultural fields after it has been filtered. Gray water contains nitrogen, phosphorus, potassium and other nutrients in low levels, while black water contains high levels of these chemicals. The low levels in gray water make it a good source of nutrients for your landscape plants, while the higher levels in black water make it a pollution problem.

Gray water has low levels of bacteria as well. Typically, they are not harmful kinds. Wash water that includes diapers can add E. coli bacteria to the gray water.

Filtering gray water is similar to the familiar septic system filtering of black water. A series of settling chambers is followed by vegetative filtering. Usually, this is a specific bed of plants with a special soil that allows for good drainage. Any excess water that isn't consumed by the filter's plants is very clean and can be used in many ways, including watering more plants.

Taking unfiltered gray water from your shower or washing machine and applying it to your plants could be adding bacteria to your lawn, landscape or garden that could make you sick. Just think of the recent cases of people getting sick from unclean spinach and strawberries. It may be unlikely to make you sick, but you should probably restrict unfiltered gray water use to emergency landscape and not garden applications when the drought is in full effect and you have no other choice.

If you store gray water for a few days before using it, you will see it change to the appearance of black water. It has low levels of nutrients and bacteria. The bacteria will use the nutrients and what ever amounts of oxygen there are. When the oxygen is consumed, the bacteria that can grow in anaerobic conditions will continue consuming the nutrients. Their waste products include the rotten egg smelling hydrogen sulfide gas. This will confirm that you don't want to apply this to useable areas of your landscape.

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