



The Virtual Gardener—Down and Dirty

This month I'm going to put on my environmental steward hat and talk about a little discussed subject—septic systems—a topic I have personally become all too well acquainted with in the last couple of months.

Septic systems consist of two basic components, a container (called the septic tank) and an absorption field (usually referred to as a leach field).

The septic tank is a large box, typically holding 750 to 1,500 gallons, made of concrete (the most common material in this area), fiberglass, or steel. Older tanks have a single chamber while newer ones have two chambers. The tank is connected on the inlet side to the house through a wastewater pipe and on the outlet side to a leach field. There are two baffles inside the tank, one at the inlet and the other at the outlet ends. The inlet baffle is designed to keep waste from backing up into the house and the outlet baffle keeps solids from entering the leach field and clogging it up. In concrete septic tanks manufactured in the 1970s and earlier the baffles were made of concrete, which deteriorated in 5 to 10 years, leaving the leach field unprotected. Newer tanks use baffles made of PVC which are supposed to last indefinitely.

The leach field comprises a system of perforated PVC pipes buried in trenches

that are nominally 36 inches wide, scores of feet long, and up to 12 feet deep. The pipe itself rests on a thick layer of gravel at the bottom of the trench and is covered with a geotextile.

The tank provides a place for anaerobic bacteria to process the waste material. After 24-48 hours, the waste inside the tank separates into three layers. At the bottom is a layer of solids and at the top is a layer of floating greases and fats called the *scum* layer. Between these is a clear liquid layer that will ultimately drain into the leach field and percolate into the soil. It is extremely important to keep grease, fats, and solids from entering the leach field. If this happens, the field loses its absorbency and will have to be replaced.

Replacing a leach field is an expensive and traumatic experience, as I recently found out from personal experience. In my case it involved digging a 100' long trench nearly 12 feet deep. We were lucky to have a lot with adequate space to accommodate the new field, and fortunately the area had not yet been landscaped. If you have a normal sized lot and a landscaped yard, you may not be so lucky. You could lose all of your landscaping, including large trees, hardscaping, and even a swimming pool, if you have one.

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So what's the moral of my story? Take care of your septic tank!

Be careful what you put down the drain. Do not put any grease or oils down the drains; do not routinely use your garbage disposal to send solids down the drain; and don't use the toilet as a garbage disposal.

Have your system regularly inspected and cleaned. When it's cleaned, make sure that the solids are removed as well as the liquid. Merely sticking a hose in the tank and pumping will remove the liquid but not the solids at the bottom of the tank.

Have the outlet baffle of your septic tank inspected. If it's missing install a new style PVC filter. If you have a PVC filter make sure it is clean.

Do not use any chemicals or other products to *enhance* the operation of your septic system. At best these products are worthless and at worst may actually harm your system.

Avoid planting trees or other deep-rooted plants on top of or near your leach field (if you know where it is!) and don't drive or build on it.

To learn more about the care and maintenance of septic systems attend a class at the University of Arizona South (see

<http://cals.arizona.edu/cochise/waterwise/events.html> for details). The next class is scheduled for 6 November.

You can also find much more information on the Web. Google "septic systems" or check out this site

http://homebuying.about.com/cs/septicystems/a/septic_care.htm.

Until next time, happy surfing.

Gary A. Gruenhagen, Master Gardener
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Congratulations to the seventeen people who have just completed the 13 week University of Arizona Cooperative Extension 2010 Master Gardener Course. As Master Gardener Associates they will now volunteer 50 hours to the Cooperative Extension to become Certified Master Gardeners. They are:

(Back row from left) Richard Krug, Steven Fletcher, Meggen Connolley (Middle row) Area Horticulture Agent, Rob Call, Olivia Sinks, Michelle Goodman, Denise Sloan, Susan Mathews, Terri Kimball, Jody Sharp-Webb (Front row) Dan Evans, JoAnn Brown, Rod Boudreaux, Jessica Rigel. Not pictured: David Hosto, James Martin, Eddie Perez

Cuttings 'N' Clippings

* The next CCMGA meeting is 5:00 p.m. Thursday, **July 1** in the Public Meeting Room at the University of Arizona South. The speaker will be honeybee expert, Mark Carroll, from the USDA Carl Hayden Bee Research Center in Tucson. He will discuss the center's mission to improve bee nutrition for healthier colonies, especially those used for commercial pollination.

* Newly elected officers for 2010-2011 Cochise County Master Gardeners Association are:
President: Rebecca Hillebrand
Vice President: Terrie Gent
Secretary: Bill Schulze
Treasurer: Donna Blackburn

* The next Water Wise free workshop is scheduled for Satur-

day, **July 10**. It is a Rainwater Harvesting Tour. See how residents and commercial sites use rainwater instead of groundwater. Call the Water Wise program for a map and details at 520-458-8278, Ext. 2139. **July 17** Bisbee holds its first Rainwater Tour! Contact the Water Wise program for details.

* A 6-week course entitled "Learn to Identify Plants" will be taught by Cecile Lumer, Ph.D. The class will meet Friday mornings, 10:00 a.m.—noon from August 20—September 24 at the University of Arizona South. For more info call Cecile Lumer at 432-4294 or Joyce at the Cooperative Extension at 458-8278 ext.2141 or e-mail cecile-lumer@gmail.com

Gentle Creatures: Bahhh Humbug!

I remember an old Gary Larson *Far Side* cartoon. It showed a white bearded, long-robed God standing on a big, billowy cloud, surrounded by His gentle creatures: rabbits, deer, mice, doves and so on. The caption read "OK, now I need to make something to eat you guys." Well, let me tell you this, he didn't make nearly enough of the "eaters."

Our vegetable garden is under siege from supposed gentle creatures. It started a couple of years ago, right after we moved to Sierra Vista when we planted some fruit trees. It took most all day to dig the holes and get the young trees in the ground, but we went to bed with all of them planted, fantasizing about apple pie, cherry cobbler, and juicy peaches.

The next morning, those fantasies were interrupted by reality. Several of the trees were completely girdled. A six inch high strip of bark was chewed away all around their trunks just above the graft unions. &\$%!* rabbits! Fearing the worst, having heard that girdled trees will die, but unwilling to give up without a

fight, we ran down to the hardware store for some chicken wire and fashioned chicken wire cylinders around the trunk of each tree to keep the bunnies away. Miraculously, every girdled tree lived; apparently, the rabbits hadn't chewed deeply enough to kill the trees. The moral of the story--don't give up too early. Plants really want to live.

When we saw javelina wandering through the yard, it became obvious that we needed to fence the entire garden and orchard area to keep out critters of all kinds. Time to put in 360 feet of chain link fencing. Ah, it's only money... But, of course, rabbits go through chain link like it isn't even there. More chicken wire. I secured a two foot high strip of chicken wire to the bottom of the fence, burying the bottom six inches of the strip in a trench dug along the fence perimeter. That's 360 feet of trench dug in soil harder than diamonds. Attaching the chicken wire to the chain link meant twisting little lengths of wire every few inches to secure the chicken wire to the chain link. So much twisting of wire led me to discover that I have a tendency toward carpal tunnel syndrome.

This spring, we planted sweet potatoes, which seemed to take forever to start spreading, they just wouldn't put out leaves. Then one morning, I noticed a quail walking down the sweet potato row, nibbling the tiny new leaves off each sweet potato stem. Yep, more chicken wire. I cut small squares of it and formed them into little tents to protect the plants from nibbling quail. One positive take-away lesson from this: sweet potatoes are awfully hardy. They survived for

over two weeks without leaves! Absent quail feasting, they're now thriving. Oh, quail like freshly sprouted beans, too. More chicken wire solved that problem.

Once the peaches, cherries, and such start ripening, just about all birds, and squirrels, enjoy them. It seems that fruit is just fine for birds about a day or so before its ripe enough for our tastes. No chicken wire this time. Plastic netting over the trees minimizes the bird damage, but those big, metallic green June bugs (technically, they're Green Fig Beetles) can get right through it. They do more damage to a peach than the birds do. This year, we'll need a finer mesh netting.

By now, we've got so much chicken wire and bird netting in our garden that it looks like it belongs to the Beverly Hillbillies. Heck, we ought to put in a "seement" pond and have Granny and Jed over for possum stew. They'd be right at home.

There's a book in the library entitled *The \$64 Tomato, How One Man Nearly Lost His Sanity, Spent A Fortune, And Endured An Existential Crisis In His Quest For The Perfect Garden*, by William Alexander. It is, of course, the story of Alexander's struggles to grow a vegetable garden. I'm going to read it to find out how he grew things so cheaply.

Meantime, though, all the frustration and expense doesn't seem to be quite such a big deal with juice from a just-picked peach running down my chin or a garden-ripened tomato slice tucked inside my BLT.

Bill Schulze, Master Gardener

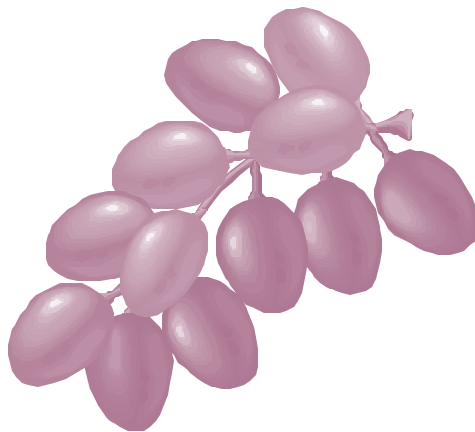


Making Raisins

During a trip to California, my husband and I visited the headquarters of the Sun-Maid Raisin Co-operative in the small town of Selma, California. My husband, who was raised in Phoenix, asked me, "What kind of a bush grows raisins?" (Yes, he was serious.) I pointed to the miles and miles of vineyards as we headed towards Selma. "There," I said, "raisins are dried grapes."

Sun-Maid has the corner on the growing raisin market (I could not resist this pun). They purchase from thousands of mostly very small growers who collectively farm about 125,000 to 150,000 acres of raisin grapes which produce about 350,000 tons (dry) of raisins per year. Professor Bert Mason, Department of Agricultural Economics, Director, Center for Agricultural Business, California State University, found that most growers have 50 acres or less of raisin grapes. According to the professor, there are several grape varieties used for raisins, including 'Muscat,' 'Sultana,' Zante currant, and 'Thompson' seedless. But about 95 percent of California raisins are made from 'Thompson' seedless grapes, with about 270,000 acres of this variety planted in various parts of the state.

Professor Mason also says that raisins are sold to up to 20 packers, including two cooperatives and 18 privately owned operations. One cooperative, Sun-Maid, controls about 40% of the annual crop. We went to the Sun-Maid Store hoping to get a tour of a production facility and, of course, some free samples. We



got the latter, but not the former. At the lovely Sun-Maid Store, you can get every kind of raisin product this co-op makes for the retail market, and lots of other raisin related items as well. I sampled all the raisin goodies. The 'Muscat' raisins in dark chocolate were absolutely sumptuous, the best chocolate and fruit product on earth. I don't think you will find them for sale anywhere but at the store.

Unfortunately, the co-op doesn't give tours of the packing or production facilities. We were allowed to watch a nice video, though, that showed how, in about mid-September, the grapes are picked and placed on paper drying "trays" that rest right on the ground in the rows between the vines. The grapes are allowed to dry in the sun for a couple of weeks. Then the "trays" are folded up, again placed right on the ground, with the raisins inside. In this large paper envelope, the raisins are allowed to dehydrate even further. Then the raisins are taken out of the paper and put into bins. But what happens after that remains a mystery to me. What about dust or foreign materials in the raisins? What about bird droppings? Frankly, I found the chocolate covered raisins so delicious, I forgot to ask pertinent questions and focused instead on how to get some of these rare treats mailed to loved ones.

Inspired by what I saw in California, I looked on the Internet to see how we might make our own raisins at home. Of course, you can make raisins like the commercial growers. Just place some sweet seedless raisins in the sun on an airy tray to dry for a couple of weeks. But unlike the commercial growers, you should probably cover them with cheesecloth to keep the bugs and birds away. One source said to sanitize them by baking in a warmish oven at 170–220° for ten minutes. Another website claims you can make raisins by baking them very slowly in a warm (not hot) oven for 170–24 hours. By whatever method you choose, it takes 4 pounds of grapes to make 1 pound of raisins.

So, to all of you who grow your own grapes or find a good sale at the store: if you have too many to eat and aren't inclined to make juice, jelly, wine, or vinegar, just let your seedless grapes dry slowly in a hot environment. You can easily make a delicious food that requires no refrigeration and will keep on the shelf for a long time. And if you have some dark chocolate on hand, the combination is unbeatable.

Bon appétit!

Terrie M. Gent, Master Gardener

July Reminders

- ◆ Keep the pests under control
- ◆ You can still plant something
- ◆ Keep watering!

Thrips

The invasion started without my knowledge. One day the petunias glowed with health and vibrant color. The next day they had odd splotches of white on the dark purple flowers. The leaves were limp and blotchy. Upon closer inspection, the flowers were swarming with tiny pale yellow bugs. I would soon learn my yard had been invaded by thrips, a nasty little bug that sucks the life out of your plants.

I've gardened in many states. Somehow I managed to evade thrips, making this my first thrip encounter. My first move was to pull out my bottle of trusty insecticidal soap. I drenched the plants with spray and went inside to do some research on the little buggers. There are many types of thrips. Some are actually good because they feed on damaging thrips, mites and small aphids. Other thrips feed on leaves, flowers and fruit. While feeding, they also can spread viral diseases among plants. I, unfortunately, had the western flower thrips (*Frankliniella occidentalis* B.) thriving and rapidly multiplying in my yard.

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Robert E. Call

Robert E. Call
Area Horticulture Agent
Carolyn Gruenhagen
Editor

The Agent's Observations

Q We purchased several 'Eldarica' pines from a tree growing farm. The trees tops have turned brown and are dying. They were dug in May and are six to eight feet tall. We purchased them for a great price, \$10 each! Some were in 15 gallon pots and others were bare root. We drove them to our property and planted them several days later. We have kept the trees well watered. What can we do to save these trees? Is there something we can put on the roots to help them survive like B-1, Super Thrive or a fertilizer?

A The great price is not so great if the trees die! Your trees were transplanted at the absolute worse time of the year. Mid-May and June are the hottest and driest months of the year, not to mention the drying winds that blow. The best time to transplant containerized trees and shrubs is the later part of September or October when temperatures are much cooler and the wind has diminished. Digging large plants out of the ground will decrease the root system and will not be able to support the above ground portion of the plant. Keeping the tree roots moist, not soaking wet, is the best thing you can do and hope the bargain plants survive. Too much water will suffocate the roots which need oxygen to grow. Placing mulch two to four inches over

the soil where the root ball sits will help cool the soil, conserve moisture and keep weeds down. Fertilizers should not be applied to newly transplanted trees and shrubs. The other products you mention have been shown in university studies, conducted as early as the 1950's, to contain minute quantities of fertilizers and "hormones" that in such small quantities do nothing for plants. B-1 is a vitamin essential for animal growth but has no effect on plants. However, using these products makes people feel they are doing something to nurture the new plants. So if this makes the owner feel better then go ahead and waste money on these useless products! The moral of this story is to plant at the right time of year. Smaller plants transplant much easier and will grow larger over the years than large "bargain" plants. With proper care the 'Eldarica' pines might survive, but there are no guarantees.

Robert E. Call
Area Horticulture
Agent



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811

**Know what's below.
Call before you dig.**

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Thrips are small, about 1/20 of an inch long. The insects go through four stages: eggs, larvae, pupae and adult. The eggs are small and kidney shaped. The adult female inserts the eggs into the plant. Larvae appear pale yellow or even white. This and the adult form are the active feeding stages for thrips. The pupae stage is a resting season which can take place on the plant or in the soil. The adult can be black, brown, orange or white and has wings. Unfortunately thrips can also overwinter in the soil, creating problems for next spring.

Thrips thrive in warm, dry conditions, so May and June in Cochise County are very favorable for this pest. Their life cycle can be completed in just two weeks during hot spells.

Thrips also favor rapidly growing plant tissue. This makes flowers, fruits, vegetables and ornamentals highly susceptible. Woody plants often are able to withstand a thrip invasion.

Like me, most people don't notice thrips until plant leaves begin to look stippled, fruit looks damaged, and flowers fail to open are distorted or discolored. You should check plants during peak times by holding a piece of white paper under the leaves. Shake the plant and look for the bugs as well as their black frass.

Treatment options range from a "wait and see" approach to total decimation with systemic insecticides. If the population is small you can do simple things like monitoring the thrips to see if natural predators take care of the situation. Predacious thrips, minute pirate bugs, lacewings, and predacious mites hunt thrips.

Other simple measures include keeping plants well watered and mowing grass and weed areas



Jewels of the Desert

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regularly. Thrips move from grass and weeds to the garden when those areas begin to dry out. Also avoid using excessive nitrogen-rich fertilizers which encourage the rapid growth thrips favor.

Putting down reflective mulch such as aluminum foil may help. The reflection seems to confuse adult thrips looking for plants. Be sure to remove the foil before temperature soars or the reflection may burn the plant.

Finally use thrip preferences to your advantage. Hang yellow sticky traps at plant level. The thrips are attracted to the color and become stuck.

If these attempts do not control the population, insecticidal soap or horticultural oils can be used. These work by smothering the larvae and adults. They are less toxic for other insects and wildlife than insecticides.

In dire circumstances, a systemic

insecticide may be needed. Because thrips often hide in the plant and are very small, complete control may be difficult to achieve. Keep in mind a systemic insecticide may kill beneficial insects as well as thrips.

While I was researching thrips and the best control method, the little buggers took over every flower in my backyard. I finally decided to use systemic insecticide the day I was inspecting the petunias and was enveloped in a swarm of angry thrips. Obviously the insecticidal soap I'd sprayed seven days ago was a temporary fix and needed to be repeated every couple of days. Lesson learned: Keep a close tab on thrips and act fast. Otherwise your flowerbed could become a little shop of horrors.

*Denise Sloan
Associate Master Gardener*