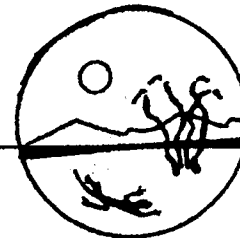


# High on the Desert

Cochise County Master Gardener

## Newsletter



The University of Arizona and U.S. Department of Agriculture cooperating.

### Good Morning!

One early Saturday morning I went out to the garden to harvest herbs for drying. About four hours later I finally returned to the house, without the herbs of course, but that is not the point of this story. I had been feeling down in the dumps about the garden and those few hours reinforced that my small efforts at organic gardening make a difference. Puttering around in the garden can do that—change one's perspective. While weeding the herb garden I saw the first horned toad of the season, in fact it was one of five I spotted that day. The horned toad's main food source is ants and that's good news for gardeners. Ants are also the Southwest's answer to worms, being the primary soil workers, aerating the soil which helps retain soil moisture, increasing drainage and fertilizes plants.

The rabbits did a terrific job pruning the plants during the winter. In particular they ate to the ground an overgrown and ratty culinary sage, *Salvia officinalis*. It has grown back

beautifully and I appreciate the work they have done for me. I notice too that they have left a lot of "fertilizer" in the garden to boot!

There are new birds visiting the garden, or least they are new to me, as I become keener at identifying them through my new binoculars. Black-headed Grosbeaks (*Pheucticus melanocephalus*) have been busy at the seed and fruit feeders. Upon looking up their "profile" I find that one fourth of their diet consists of insects. A Western Meadowlark (*Sturnella neglecta*) had me giggling as it entertained with its comical actions "jumping" over the water fountain trying to figure out how to obtain a drink. The meadowlark sings a beautiful song and their main diet consists of beetles, cutworms, grasshoppers, and caterpillars. I can now identify the mystery bird that always hangs out on the barbed-wire fence in the meadow garden. The meadow garden is half of our landscape left untouched as a natural habitat. It is a haven for birds, butterflies, snakes, desert tortoises, insects, hawks, owls,

rabbits, coyotes, and to all the other innumerable things I have yet to see. The mystery bird turns out to be a Western Kingbird (*Tyrannus verticalis*) and a connoisseur of insects often impaling its prey such as grasshoppers on to the barbed-wire. I am pleased that the garden is attracting these various types of birds as I could use all the organic pest control I can get! It also tells me that the balance of nature is working and a beautiful garden can and should be had without the use of pesticides.

I discovered the dreaded pests, the Agave weevil and myriad bugs, on one of my favorite agaves, *Agave parryi* var. *huachucensis*. I tried smashing them with my hand but only got stabbed by the agave sending me singing a song of my own! Agave tips contain a steroid compound that causes localized swelling and in some individuals an allergic reaction. For the next few days I tried to smash the bugs with a stick but they always disappear into safety when I cast a shadow over the plant.

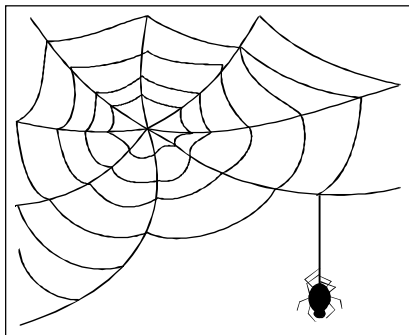
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#### Cochise County Cooperative Extension

1140 N. Colombo, Sierra Vista, AZ 85635  
(520) 458-8278, Ext. 141

450 Haskell, Willcox, AZ 85643  
(520) 384-3594

Then one day I noticed webbing on the agave and two days later there she was—a jet-black lady with an hourglass figure. Black widows



can achieve complete biological control on these pests. I hope that in exchange for a healthy agave she has many babies and plenty to eat!

I think the moment that stands out the most that Saturday morning in the garden was the first sighting of a Queen butterfly floating by and witnessing in awe a pair of black-chinned hummingbirds mate in the pines.

I hope the day never comes where our gardens are void of all our creatures, large or small. Now that would really be something to be down in the dumps about.

*Cheri Meadows  
Master Gardener*

first of the summer rains, only a few weeks away.

**Keep deep-watering:** If it seems we are harping on deep-watering, we are. Wise watering is one of the most critical skills of desert gardening, and often the hardest to master. Continue to deep-water every 10 to 14 days, but watch your plants for signs of heat stress: drooping leaves, white sunburned patches on leaves, dropped buds or flowers. A plant's primary means of cooling itself is through evaporation. The dryness of the air, the high temperatures, the extra hours of sunlight, and high winds all sap water from a plant and it will quickly show signs of heat stress.

**Mulch plant roots:** An excellent way to conserve water and keep plant roots cooler is to apply a mulch around the base of your plants. Use wood chips, gravel, hay, even shredded newspaper, but avoid plastic sheeting.

**Fertilize roses:** By now your roses have feasted happily on the fertilizer you applied in April and are hungry again. Give them and other plants in your garden an extra boost this month with a side dressing of ammonium sulfate, ammonium phosphate, fish emulsion, blood meal, or any of the other nitrogen-phosphorous fertilizers. Watch plants for signs of iron or zinc deficiency—a problem in our soils.

**Cool cool-season crops:** If you are planning on extending your cool-season crops into June, you will need to give them extra protection. Use shadecloth to shield them from the mid-day sun and mist them with water daily to lower the surface temperature of their leaves. You may also want to shade heat sensitive perennials if they begin to show signs of stress.

**Plant warm-season crops:** You can continue to plant warm-season crops such as melons and peppers. You will want to plant warm-season crops so that they will mature before the first frost, but that is about five months away.

**Watch for new pests:** Caterpillars of all sizes and colors (some quite beautiful) will be happily munching on your garden this month. Those beautiful black swallowtails, stunning sphinx moths, and cute little white butterflies that enlivened your garden this spring were busy laying eggs. Cabbage loopers and tomato hornworms (ick!) will be particularly troublesome. The best control for caterpillars is hand-picking, but this must be done daily and is not for the squeamish.

**Give your tomato plants some extra TLC:** Stake tomato plants that need extra support as soon as possible. Don't be concerned if your tomato blossoms are dropping or if fruit production has stopped. Temperatures may be too high for the pollen to remain viable. Be patient. Your plants will be fruiting again in another month or so. If you already have green tomatoes, be certain to keep a steady moisture level in their soil (damp, not soggy). Although there is still some debate, moisture stress is considered the leading cause of blossom-end-rot in tomatoes.

*Jackie Dillon-Fast  
former Cochise County Master Gardener  
(Reprinted from the Cochise County  
Master Gardener Newsletter, June 1990)*



## What to do... June

Summer is here in all its fiery glory and the June sky is a relentless, cloudless, rainless blue. All sorts of interesting and troublesome creatures begin visiting our gardens. The first tomatoes are ripening, the last broccoli is harvested and everyone—plants, creatures, and gardeners—wait patiently for the

*Robert E. Call*

Robert E. Call  
Extension Agent, Horticulture  
Carolyn Gruenhagen  
Editor

# Keeping "BAMBI" and "THUMPER" in Check

One of the most frequent questions posed to me by frustrated gardeners in the Apacheria is how to control damage caused by deer and other four footed pests. Even though to those whose landscapes are in reality "moonscapes" and thereby resistant to damage by other than the apocalypse, those whose gardens are full of nice green plants soon lose their fondness for desert fauna after discovering their entire garden has been devastated during the night by foraging javelina, deer, or rabbits. We all have to realize that due to ever increasing human population and dwindling natural areas that animals are forced to live among us. Or, looking at it from the animals point of view, we are increasingly living on their turf. But no matter how you look at it, gardeners must develop plans to deal with damage from high desert wildlife.

There are several reasons why the extent of animal damage, especially from deer, has been rising: 1. Rising deer, javelina, and rabbit populations primarily caused by diminished predator population (think of that the next time you dispatch a snake or berate the coyote or mountain lion) 2. human population in the United States is shifting to more suburban and rural areas 3. loss of natural habitat and unchecked development in those areas 4. loss of predators and landowner decisions to "assist" animals. Look around you and see if any or all of the above apply to the area in which you live.

Do not despair as there are some ways to minimize damage to your landscape. Some of the measures you can take in the high desert:

1. Plant susceptible plants near the house or in fenced areas. To prevent deer damage, fences must be high foot high and angled (capitalizes on problems with depth perception).
2. Plant susceptible plants inside a ring of less desirable plants.
3. Ask neighboring gardeners what plants the critters like and don't like. Targeted plants depend on many factors, *i.e.* previous habits and nutritional needs, plant palatability, seasonal factors, weather conditions, geographic area, and availability of alternative foods.
4. Be observant! Animals, especially deer, are creatures of habit. If they have foraged in a particular area once, chance are they WILL be back.
5. Avoid using lists of resistant plants unless compiled locally. Animal taste preferences vary. What they avoid in Dogpatch, USA may be at the top of the menu in Hereford.
6. During times of scarcity (like NOW) - animals will browse even the most undesirable plants—so plan accordingly.
7. Avoid planting flora that is soft to the touch or high in water content in known forage areas.
8. Surround your garden with plants that have a pungent taste.
9. Create a scent barrier by planting strongly aromatic plants throughout your garden. Deer, in particular, rely on smell to determine what is safe and desirable to eat. A variety of strong odors confuse the deer. Often the animal will leave the area and go to an area where it can clearly identify what it is eating.

10. Finally, four-legged varmints will eat almost anything in spring since it is all tender and new growth in general has more nutrients. So concentrate your prevention efforts accordingly.

Bottom line is this, NO PLANT is safe if animals are hungry enough. So try all of the above, hope for the best, and be thankful Cochise county is not the Serengeti where you'd have to deal with foraging elephants

*John Phillips  
Master Gardener*

## Did You Know...

According to a study, entomologists have discovered that bug zappers zap your wallet not the pests! These electric zappers tout that they kill mosquitoes and flies but mosquitoes are attracted not to the purple light these traps produce but to the carbon dioxide produced by animals and humans. Over a period of ten weeks, six traps came up with a bug body count of 13,789 and only 18 of those carcasses were mosquitoes! The majority of the dead were beneficial insects such as green lacewings that feed on pests in the garden. So bug zappers could actually increase the number of bad pests in the garden by killing the good guys! (Source: *Roots & Shoots*, Aug 97, Courtesy of Roberta Gibson, Research Specialist, U of A)

And before you turn on that zapper while sitting down to dinner on the porch, Dr. James Urban, professor of biology, found that when the common household fly gets zapped, it causes the insect to explode. Millions of bacteria on the surface of the fly are scattered into the air up to as far as six feet! Since the bodies of flies are covered with animal wastes, bug zappers may be spreading more disease than they prevent. Hungry anyone?

# THE VIRTUAL GARDENER

## Weed Warrior III

Listen up, Warriors! This month we are going to finish our discussion of conventional anti-weed weapons. Next month we will begin discussing the use of chemical weapons.

Back in April I mentioned the use of mulches to prevent weed germination but warned against the use of plastic sheeting as a mulch. There is, however, a use for plastic sheeting in weed suppression. Instead of using the plastic as a permanent barrier, use it as a temporary cover to kill weeds and weed seeds by heat. Simply cover the area to be cleared with a sheet of clear plastic that has been weighted down with stones to prevent it from blowing away. Leave the plastic in place for four to six weeks under the hot sun and weeds and seeds in the soil will be killed by the heat that builds up under the plastic. During this process, called solarization, soil temperatures can reach as high as 140°F at the surface and 100°F at a depth of 18 inches. This will kill weed seeds to a depth of up to 4 inches. Not only will this method kill weeds and weed seeds but will also pasteurize the soil to rid it of nematodes and harmful microorganisms. In fact, advocates state that soil solarization not only kills weeds and pathogens but actually improves the quality of the soil to grow healthy plants.

**There are five steps to successful solarization:**

**1.** Cover the soil for a minimum of four weeks during the hottest part of the year. May and June are ideal

for this area. Leaving the plastic on for a longer period has no detrimental effects.

**2.** Till and smooth the soil before covering it with the plastic. Ideally the plastic should lay tight against the soil surface without air pockets and the texture of the soil should be uniform to promote even heating.

**3.** The soil should be very moist before applying the plastic. Experts recommend saturating the soil with soaker hoses to a depth of a foot or so. Moist soil conducts heat better than dry soil and prevents some seeds from going into a protective dormant mode.

**4.** Mound the soil under the plastic slightly to prevent rainwater (what's that?) from pooling on the plastic.

**5.** Use clear plastic sheeting rather than black plastic to maximize the heating effect. Thinner plastic (1 to 2 mil) promotes faster heating than thicker (6 mil) plastic but is more susceptible to tearing.

If you would like to learn more about soil solarization, take a look at these Web sites:

> <http://hammock.ifas.ufl.edu/txt/fairs/42516>

> <http://scarab.msu.montana.edu/extension/weeds024.htm>

> <http://gardenguides.com/TipsandTechniques/solarization.htm>

Until next month, Happy Surfing.

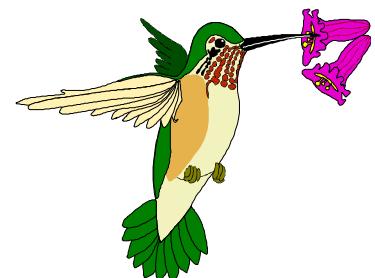
*Gary A. Gruenhagen, Master Gardener  
gruenha@sinos.com*

## Cuttings 'N' Clippings

> Cochise County Master Gardeners Association meets June 2 at the Sierra Vista Library for their annual business meeting and a picnic to celebrate the graduation of the Master Gardener class. See the CCMGA News for information or call the Sierra Vista Cooperative Extension office.

> Congratulations to the 14 people who have just completed the 13-week Master Gardener Class. They will now begin their 50 hours of volunteer work with the Cooperative Extension as Associates. At the end of the volunteer time they will be "official" Master Gardeners.

> The Sierra Vista Area Gardeners Club will be taking a trip to Mesquite Valley Growers in Tucson on June 3. The club meets every third Thursday of each month at the Sierra Vista Library from 2:00 - 4:00 pm. Guest speaker will be Mike Reimer who will talk about endangered species retrieval. For more information call 378-1399 or 378-2833.



> Southwest Wings Birding Festival will take place August 18 - 21 in Sierra Vista. For more information and to receive a brochure call 1-800-946-4777.

## The Agent's Observations

**Q** We are having problems with deer eating leaves and shoots on our fruit trees. We have a 4-foot high fence which obviously is not high enough to keep them out. I've been thinking of installing a one or two strand electric fence above the existing one so the fence is about 6 or 7 feet high. I have also heard about baiting the electric fence to train the deer to keep away. Do you have any advise on this subject?

**A** Yes, a taller fence can keep out most deer. Deer will also crawl under fences if not close to the ground and secure. Deer have hollow hairs that do not conduct electricity and so they do not get shocked by electric fences. You can train them however. The most effective way that I know of is by making 2-3 inch wide strips of aluminum foil and maybe a foot long. Heavy duty foil is the most robust. Fold the foil over the wire and staple the strip ends together. Place some peanut butter on the foil. Place these "training devices" every 20 feet or so a long the fence. Electrify the fence. Because of the dry conditions we are experiencing there is a lack of native vegetation. Hunger and thirsty wildlife will take chances they normal would not while looking for food and/or water. If you create a garden oasis in the desert you will have more wildlife pressure during drought conditions.

**Q** I have several trees, shrubs, and bushes that have leaves that are turning yellow but the veins remain green. I water them regularly at the drip line and feel that they are receiving enough water. What can I do to correct this problem?

**A** The leaf yellowing is called iron chlorosis and is caused by insufficient iron in the plant leaves. If you look closely you will see that the older leaves are not effected. Iron is necessary in the formation of chlorophyll, the green pigment of plant leaves and stems. Our soils are alkaline, meaning that they have pH's above 7.0. As soil pH increases above 7.0 iron forms other molecular complexes which are not taken up by plants. Water logged soils or anaerobic conditions can cause iron to be unavailable also.

Control: Decrease the amount of water given plants, checking the soil to see if watering is necessary. Lowering soil pH will make iron more available. Changing soil pH is a long term proposition and is hard, if not impossible. to accomplish. Iron can be applied to the soil or the leaves to help correct this problem. Iron applied to the soil is slower acting but is longer lasting than iron sprayed on the foliage. There are several dry products that can be soil applied; these include iron chelate, iron sulfate and other forms of iron. (University tests have shown that "Ironite," which has 1% iron content, is not as effective as the other products mentioned previously.) These products are poured into

holes made by pounding and then removing a 1/2 or 3/4 inch metal pipe. Poke these holes into the soil one to one and a half feet deep, four to five feet apart, around the drip line of the affected plant. The holes serve as reservoirs so the iron will be available to the plant. Foliar applied irons are normally liquids and can also come in chelated forms. Chelates are "chemical jaws" which protect the iron from becoming bound up with other chemicals before it is inside the plant. Once near or inside the plant the chelating agent is dissolved and the chelated chemical is available. Chelates can be applied to the soil also but only Sequestrene 138 (6% iron) will work well in our alkaline soils. It is red in color as a powder and when added to water has the color of blood and is as expensive as blood! The Sequestrene 330 (10% iron) is yellow in color and is applied to the foliage only. It should only be soil applied to acid soil, if not it will become bound up and not available to the plant. Look at the product color to know which chelated iron to use and where to apply it. Remember when applying iron chelates—red to the soil, red or yellow to the leaves. Always read, understand, and follow the label before using chemicals.

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**Maricopa Agent Wins Award**  
Congratulations to Terry Mikel as the recipient of the 1999 American Nursery and Landscape Association's Nursery Extension Award. This award aims to promote interest in and appreciation for the high quality of extension efforts that benefit the nursery industry.

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## **Protect Your Property . . .**

If you live on the wildland-urban interface, NEVER assume that, "It can't happen to MY home!" If you have not already scheduled a free risk assessment of your property with the fire prevention technician (Mary Dalton, 378-0311), U.S. Forest Service, Sierra Vista Ranger District, it is highly recommended that you do.

Mary's office has listed the following top ten tips for creating a protective (defensible) zone around one's property to prevent fire from reaching it.

1. A fuel break, clean of all vegetation except plants with high moisture content (cacti, succulents) should extend around all structures for a width of at least six feet--this is the "home zone." Beyond this, for at least thirty feet around each building (the "yard zone"), trees and shrubs should be spaced so crowns are at least fifteen feet apart, and lower limbs pruned 10-15 feet above the ground or ground vegetation. These precautions are the heart of the defensible space concept; just implementing them could substantially reduce your risk from wildfire.

2. All combustibles such as firewood, lawn furniture, propane tanks, sheds and lumber should be located at least thirty feet from the dwelling.

3. Regularly clean roofs, gutters, decks of vegetation debris: needles, leaves, twigs, cones, etc. Trim overhanging branches away from roofs, chimneys, and flues. Keep chimneys and stove pipes cleaned inside, too, at least yearly.

4. Post address--number and street name--clearly at entrance to your property. Report missing street intersection signs. Maintain adequate turn-around space, at least a forty-five foot radius for fire engine access. Roads and drives should be at least sixteen feet in width.

5. Substitute fire-resistant plants for conifers, eucalyptus and other highly flammable species. (Mary can give you lists of the "best" and "worst"). Keep all vegetation trimmed of dead branches; keep grasses within thirty feet of the home cut low, or consider alternatives to grass lawns: rock gardens, low-growing wildflowers, vegetable or flower plots spaced with gravel paths. Gravel conserves soil moisture just as efficiently as bark, mulch, or needles---

6. Dispose of charcoal debris or fireplace ashes only after soaking them in water in a metal container for 24 hours. Debris or garbage burning is by permit only. One can build a simple incinerator (metal drum with bottom vent and screen on top if one has a burn permit). Never leave fires unattended. Drown, stir, repeat, and check for heat to make sure fires are out.

7. Screen all vents with 1/4--1/2" metal mesh. Put spark arrestors, simple screen and cap (Mary will give you plans for fabricating them), on all chimneys and flues.

8. Install commercial spark arrestors on all internal combustion yard and farm equipment. Don't park vehicles in tall, dry grass; a hot tailpipe may ignite it.

9. Be prepared with garden hoses hooked up to reach all structures. Also have fire tools on hand: shovels, hoes, ax, ladder.

10. Discuss wildfire with your family. Keep emergency numbers by phones. Have an evacuation route and home escape plan rehearsed and ready. Check smoke detectors and home fire extinguishers at least twice yearly.

*Peggy Dierking  
Master Gardener*