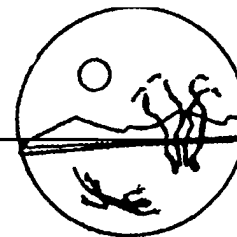


High on the Desert

Cochise County Master Gardener

Newsletter



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

What to do - - - April

April is an exciting month for gardeners. It's the start of a new and promising growing season full of potential. Bedding flats, vegetable plants, trees, ground covers, roses, shrubs, potting soil, fertilizers, spades, rakes, forks, everything but grass seed (too early!), fill row after row of our favorite garden centers. The daffodils and iris (planted last fall) have been up for weeks along with a few early wildflowers. Hummingbird scouts buzzing through the garden are a sure sign of spring!

Plant cool season vegetables: Lettuce, broccoli, onions, spinach, and cauliflower can be transplanted into the garden. It is really a bit late for seeds, though you can try with some short season varieties. Beets, carrots, and radishes can still be sowed by seed, but look for varieties that can be harvested in 50-70 days, before the high heat of June and July sets in. It is still a little early for tomato plants to be set outdoors unless you are willing to

give them extra protection on the cool nights still to come. April's weather can be tricky and young transplants are especially vulnerable. If you wait too long, however, your cool season vegetables will be trying to mature during the hottest, most arid part of our growing season. The Cooperative Extension has a pamphlet called *Vegetable Varieties for Arizona* available at either office.

Fertilizing: Your trees, shrubs, roses, and flower beds need a fresh supply of nutrients to support spring growth and build strength for the long growing season ahead. Nitrogen, phosphorus, zinc, and iron are four of the critical plant nutrients often lacking in Arizona soils. Of the remaining nutrients, carbon, hydrogen, and oxygen are absorbed from water and air, and potassium (or potash) is readily available in our soil as are many of the micronutrients (nutrients needed in small quantities only). The two nutrients to concentrate on when fertilizing in the spring are nitrogen and phosphorus.

You will need to apply fertilizer several times during the growing season, with the last application

in August. Remember, chemicals contained in fertilizer react with elements in the soil to form salts (nitrate & phosphorus) which your plant can then absorb. Too much fertilizer can kill a plant, especially if it is high in nitrogen. Read commercial fertilizer labels carefully and always measure and apply according to instructions. The pamphlet *Fertilizing Home Gardens in Arizona* is available at the Cooperative Extension offices.

Preparing for pests: After a few pest-free months, we are about to be invaded by ants, spiders, aphids, and codling moths—and they will be hungry. So, be prepared. Practice good gardening habits such as removing dead vegetation, keeping after weeds, and companion planting. You may want to consider introducing some biological controls into your garden in the form of beneficial insects such as lacewings, praying mantis, and parasitic wasps. Eggs and larvae of some beneficials are available in gardening catalogs.

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

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What's Happening to the Cacti at the Plant Science Center?

Many of the Bisbee Beehive (*Coryphantha vivipara* var. *Bisbeeana*), Rainbow Hedgehog (*Echinocereus pectinatus*), and Arizona Fishhook (*Mammillaria grahamii*) cactus are missing from their planters at the U of A Sierra Vista Campus Plant Science Center. Also, near the entrance to the Plant Centers' Office (the wide wood step to the trailer) there is a 2-3 inch hole. Could the missing plants and the 2-3 inch hole be the food and home of our thief? There is little evidence left by the thief. There are, however, small droppings that may be from a rat and entire plants are missing from their planters. Could one of the following animals possibly be the thief?

► White-throated wood rat, better known as the packrat (*Neotoma albigula*). The packrat builds its



house of sticks, twigs, cactus joints, animal dung, and assorted debris and often built within a prickly pear cactus patch. When night brings cooler temperatures and higher humidity, packrats emerge to forage for mesquite beans, cholla buds and fruit, prickly pear, palo verde seeds, and other plant material.

► Bailey's pocket mouse, the largest of the pocket mice. The pocket mouse is found in flat, open places with creosote and sparse grass and on bajadas (slopes at the bases of desert mountains) with palo verde and octillo. They feed on seeds of

various cacti, grasses, and other plants. They are active all year.

► Blacktailed jackrabbit (*Lepus californicus*) or the Antelope jackrabbit (*Lepus alleni*). Jacks are herbivores, feeding mostly on grasses, mesquite, prickly pear, acacias, palo verde, and snakeweed. They can survive in very dry areas getting moisture from plants and prickly pear cactus.

► Desert cottontail rabbit (*Sylvilagus audubonii*). Cottontails are herbivores, feeding on a wide variety of green plants, grasses, and other broadleaf flowering plants. They also use prickly pear cactus as a source of moisture.

► Harris antelope squirrel (*Ammospermophilus harrisii*). The Harris antelope squirrel's burrow entrance is typically found in sheltered spots—in cactus patches, under bushes, or among rocks. Bits and pieces of cactus fruit are often left lying nearby where the Harris antelope squirrel has been feeding. It feeds on seeds, mesquite beans, palo verde seeds, fruits of prickly pear, barrel cactus, and cholla.

Stay tuned—a trap will be set, the thief caught and identified, and then released. We'll keep you posted.

Source: *A Field Guide to Desert Holes*, Pinau Merlin, author, Arizona Sonora Desert Museum publication.

Maxine Walker
Master Gardener Associate



Book Review

The book, *A Field Guide to Desert Holes*, guides us around the region's amazing array of mounds, dust, baths, depressions, and divots (no, not as in golf!) in its 132 pages. You will also find 61 pen and ink drawings in this interesting little book. The *Arizona Daily Star* says, "We sincerely hope (the book) will tell us everything we ever wanted to know about holes—and the critters who make them."

Cuttings 'N' Clippings

► Cochise County Master Gardeners Association meets April 7 at the Sierra Vista Library. The guest speaker will be Jane Livingston, Waste Reduction Educator, speaking on recycling. All Master Gardeners, Associates, and Trainees are invited to attend. The meeting counts on your volunteer hours!

► A free Xeriscape class is being offered by the WaterWise program through Cochise College's non-credit program May 6, 6:00 - 8:00 pm. Call the Sierra Vista Cooperative Extension office for more information.

Robert E. Call

Robert E. Call
Extension Agent, Horticulture

Carolyn Gruenhagen
Editor

THE VIRTUAL GARDENER

Return of the Weed Warrior

At Ease, Warriors! Last month we took a look at the order of battle of our weedy foes; this month we're going to learn how to send them to the Great Weed Patch in the Sky. Although there are many chemical weapons at our disposal, these weapons may cause unacceptable collateral damage so I will limit the discussion to conventional weapons this time. Weeds are after all only plants. Like other plants, they must have a constant supply of water, mineral nutrients, and oxygen as well as a benign physical environment to survive. Anything we can do to deny them logistical support or interfere with the operational systems that transform their resources into energy, will damage or destroy them.

One of the oldest and most effective techniques to be used against weeds is hand to hand combat. Physically ripping weeds from the soil with the bare hands provides a certain satisfaction to the Weed Warrior and very effectively interferes with the logistics and operations of the weeds. These tactics are best used on moist soil after a rain or heavy irrigation. There are risks to this form of combat, however, as any Warrior who has grabbed a clump of burr grass can attest. The use of gloves is highly recommended. Although effective in most cases, hand to hand combat is not the most efficient way to deal with our sneaky weed foes. A better tactic is to use small individual weapons such as hoes and shovels.

One of the best weapons of this type I have found for use here in the High Desert is a tool shaped like a hoe that has been bent out so that the flat part of the hoe and the

handle are in the same plane—sometimes referred to as a Dutch hoe. The flat part of the hoe skims along just under the surface of the ground and cuts off weed roots. This weapon is particularly effective against annuals such as bunch grasses, but unless you cut fairly deep it won't kill those biennials with the large carrot style roots.

... suppression is one of the best anti-weed techniques.

Although you can cover large areas in fairly short periods of time, this weapon may cause a case of tennis elbow if used over an extended period. When used on slopes it also tends to loosen the soil and promote erosion.

Last month I mentioned that young weeds are particularly vulnerable just after they're sprouted and before they've had a chance to develop a self-sustaining root system. One of the best techniques for clearing a garden or flower bed area of weeds is to water the area for a few days prior to planting and attacking any newly sprouted weeds with a cultivating tool just before planting. By prematurely flushing those sneaky weeds out of hiding before you plant, you can dispose of them far more easily than trying to work around your own friendly plants without causing damage to them.

Once your plants are established, suppression is one of the best anti-weed techniques. Suppression involves the use of mulches around your friendly plants to deprive weed seeds the light and warmth

they need to germinate. Organic mulches such as straw not only inhibit the sprouting of any weed seeds that may remain in the soil, but they hold in moisture and keep the soil around your friendly plants cooler. Straw mulches should be at least 4 inches deep to provide an effective barrier against weeds and hold moisture in during the heat of the pre-Monsoon summer. You can also use various fabrics and other commercial sheeting to suppress weeds, but they are not as effective in retaining moisture as straw or other organic materials.

While I'm discussing mulches, I should address the use of plastic sheeting. Heavy plastic sheeting is relatively inexpensive and often used to suppress weeds in areas to be covered in gravel. Although this seems to work for a while, it is not very effective in the long run. Probably its biggest drawback is that soil begins to accumulate on top of it after a few years and weeds start to sprout in this soil. Also, plastic sheeting is not very effective against Bermuda grass. Rhizomes from this grass can travel long distances under the plastic and send up shoots wherever they find a break. Unfortunately, Bermuda is best controlled by chemicals.

Next month I will continue the discussion of non-chemical weapons in our arsenal. In the meantime, you might want to take a look at a couple of Web sites: <http://www.starnursery.com/403.htm> and <http://www.igin.com/weedcntrl.html>

Until then, Happy Surfing!

*Gary A. Gruenhagen, Master Gardener
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The Agent's Observations

Q I have noticed small holes in the bark of my apple, cherry, peach, plum and mulberry trees. It looks as if the trees have been shot with a shotgun. The stone fruits have gummy material coming out of the holes. What is the cause of these holes and how can I control it?

A The holes you see are caused by shothole bores (*Scolytus rugulosus* (Müller)). Shothole bores are beetles that were introduced from Europe in 1878. They can be destructive pests of fruit and ornamental trees, and shrubs. Numerous small "shot holes" are seen in the bark of twigs and branches. The gummy exudate from the stone fruit trees is their response to try and fend off the invaders. The adult beetle is 2.5 mm or less in length, brown-black, with a short stubby snout with chewing mouth parts. The thorax is shiny and elongated, the elytra, or wing covers, are dull. Adults burrow through the bark and live between the bark and sapwood of the plant. Adult feeding excavates narrow galleries running parallel to the wood grain under the bark. Eggs are oval to round and pearly white in color. Females lay 50 eggs in niches along the gallery she has made. As the eggs hatch the larvae excavate slender mines or burrows, usually at right angles to the maternal gallery, occasionally crisscrossing over one another between the bark and sapwood. The larval burrows are filled with excrement and grow wider as the larvae grow. They become fully grown six to eight weeks later and construct pupal cells at the ends of the mines. Upon completion

of pupation young adults burrow through the bark to the outside world, mate, and the cycle starts anew. The larvae of the last generation of the year complete development during late winter and early spring as temperatures rise. In Southern Arizona there are normally three generations per year.

Control: Healthy, vigorous, well cared for trees are less subject to attack by shothole borers. Plant maintenance through correct watering at the drip-line, proper fertilization, and pruning practices keep trees healthy. Affected branches should be pruned out and burned to decrease insect populations. Plants receiving a regular spray program are not troubled by shothole borers.

Sources: *Orchard Pest Management*. Elizabeth H. Beers, et al., Editors. 1993. Good Fruit Grower. Yakima, WA. Pages 186-187.

Insect Pests of Farm, Garden, and Orchard. Ralph H. Davidson and William F. Lyon. 1987. John Wiley & Sons, Inc. New York. Pages 404-405.

Q Can I prune my fruit trees even if they have bloomed? How late can I apply dormant oil to fruit trees?

A Pruning of fruit trees can be done through flower petal fall or even a little after. The only problem is that bees will be pollinating the flowers and you might be stung. Cut areas may also bleed but should not be of great concern. Dormant oils, used to suffocate overwintering pests, are best applied when green is just showing on the leaf buds. Horticulturists refer to this type of spray timing as a "delayed dormant" application. Spraying of dormant oils can be done up until the leaves are 1/2 inch long. If the leaves

are much larger the oil may burn them.

Q How can I tell if my apples, pear, peach, cherry and apricot flowers suffered freeze damage from freezing temperatures?

A Most of the fruit mentioned will freeze if in full bloom during temperatures from 23 to 28° F. To examine a flower or fruit remove one from the tree. Make a horizontal cut with a knife through the base of the flower just beneath where the flower petals are attached. If small fruits have already formed cut horizontally through them also. If the center of flower or fruitlet seed tissue, is brown in the center then the flower or seed(s) is/are dead. If the flower or seed tissue is green they are alive. If the seed(s) die then the hormonal stimulus that the seed(s) produce which signals fruit growth will not occur; therefore no fruit will be produced. Go around each tree and cut 10 or 20 flowers or fruitlets to determine the percent of survival. If only 5 to 10% of peach flowers survived there will be a crop. If only 10 to 20% of apple or pears survived you will have a full crop. If more survived you will probably have to thin the fruit in a few weeks to produce large fruit. If thinning is not done either by man or Mother Nature's freezes small, inferior fruit will be produced.

Robert E. Call
Extension Agent, Horticulture

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Want to keep the birds happy this spring? Drape short lengths of string over shrubs and scatter soft materials around—you'll help "feather" their nests!

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# Minimizing Pesticide Usage

The use of pesticides by the novice gardener and even by “experienced” gardeners has become the first course of action in dealing with insect management problems rather than being the last option. We have become enamored with pesticides and they fit well into our twentieth century immediate gratification culture. It is far easier to run to your local nursery or gardening supply outlet and grab up the first noxious chemical that catches your eye then beat feet back home and engage in chemical warfare to eradicate even the most minuscule insect infestation. Then we kick off our sandals, plop down in the shade of a tree, and feel smug that all is well once again in our gardens.

However, overuse or misuse of pesticides can be very deleterious to the environment and to the long term health of the garden. All too often the novice gardener looks at the pesticide label and decides, “Well, if one teaspoon per gallon will work then two will be twice as good.” Or, not being able to tell an aphid from a ladybug, they resort to chemicals to kill the intruder and wind up killing beneficial garden visitors and unknowingly thereby increase their dependence on chemicals. The goal must be to produce a garden environment where pesticides are seldom required.

So what are some of the ways one can minimize the use of pesticides in the home garden? The first step to minimizing pesticide use is to strive to have a healthy garden. Healthy plants are much more resistant to disease and insects. Fertile soil—along with proper amounts of fertilizer, water, sun or shade—is the basis for plant health.

Concomitant with fertile soil and proper plant care is selecting the right plant for the environment provided. When selecting plants, you must match each plant to the correct microclimate so that it can thrive. Too many times I have seen novice gardeners select a shade loving plant, plant it in the full sun and then spend enormous time and energy in a futile attempt to save the poor plant from a hideous, untimely death. A good rule of thumb is to always do some research into the cultural requirements of the plants you are considering BEFORE you purchase. Additionally, you can seldom go wrong if you select native plants appropriate to the microclimate you are considering. Plants that are native have developed an ability over the centuries to deal with our harsh climate without much care.

Too many times gardeners don’t take the time to become familiar with a particular plant’s cultural requirements before purchasing. If you don’t take the time to properly prepare the soil for the new addition, water them both before and after planting, monitor them intensively during their transitional stage, and provide care appropriate to the particular plant, you will be adding stress to the plants and leave them vulnerable to pest infestation or disease. Additionally, you must be willing to invest the requisite amount of time, energy, and money to care for each new addition to your garden. If you insist on planting water thirsty plants then be prepared to provide sufficient water to keep them thriving. If time is at a premium for you, don’t plant high maintenance plants such as roses.

All gardeners should be constantly vigilant to the onset of insect infestation. There is no substitute for taking the time to

carefully inspect your garden before severe damage occurs. Oftentimes, all you need to use is your hands to control minor problems. It may be yucky, but you can easily remove tomato hornworms and other garden pests by picking them off. Minor infestations of spider mites and aphids can often be controlled with a strong jet of water.



Using a soapy water solution can be an inexpensive environmentally friendly and effective way to control soft bodied insects. Letting problems grow may necessitate more drastic control methods. When you are surrounded by alligators, your original goal of draining the swamp becomes the least of your worries. Pro-active pest control will minimize stress to your plants and to you.

Many gardeners have found that the use of floating row covers quite beneficial in limiting or eliminating pest damage. These covers allow air, light and water through but keep pests out if properly installed. Putting paper tubes around the base of plants is effective in controlling cutworm damage. Sticky substances such as “tanglefoot” or just plain Vaseline can serve as an effective barrier to ants and other crawling insects.

Another way to deal with insect damage is to just accept it as a natural part of the environment. Seeing a small blemish on a piece of fruit should not be a cause for alarm but rather an indicator that the grower has chosen not to over

*(continued on back page)*

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use pesticides. The little bit of cosmetic imperfection that results from insect visits to your garden is a small price to pay to avoid killing beneficial insects or poisoning the environment from inappropriate use of insecticides. If you plant sufficient quantities of plants of each variety in your garden so that the loss of one or two is not critical and take the other precautions that I have discussed, you will seldom experience insect problems so severe that you have to resort to pesticide applications.

Finally, when all else has failed, seek advice from a knowledgeable professional BEFORE application of pesticides. Know what the pest is, which pesticide is safe to use, and in what dosage. READ the labels. Do not assume that any one pesticide is appropriate for all problems you encounter. Federal law requires that all pesticides specify for which insects the particular pesticide is appropriate, which plants on which it can safely be used, and the proper dosages required. It is absolutely imperative that you observe all precautions specified on the product label. Don't be

fooled; "organic" pesticides can have serious environmental effects if improperly handled. Treat all pesticides, whether organic or nonorganic, with respect and as the last resort means of control.

*John Phillips*  
*Master Gardener*



## WEED CLEAN-UP TIME

Or

Your Kids and Critters Will Thank You

Although this clean-up activity could have been done much earlier, in the fall or early winter, it's certainly not too late to clean up two very obnoxious weed seeds, the Silver Leaf Nightshade and the Puncture Vine, possibly located on your property, be it in a small yard, on a large lot, or on a considerable amount of acreage.

### GOLDEN GLOBE AWARD

Silver Leaf Nightshade is distinguished by its school bus-yellow globes, about the size of the end of one's little finger. Yes, the poisonous orbs do resemble

very tiny tomatoes or gourds. Gather the golden seed pods (some older pod material may have turned brown-black by now) and any dried foliage, and place them into a bag, tie it off and dispose of it.

Using large, paper animal food bags (aka horse pellets) for this purpose and fibrous twine from hay bales (to tie off the ends), I collected enough debris from Silver Leaf Nightshade plants and pods in a small ravine on our property to fill two, very large horse pellet bags earlier this year. I accomplished all of this within about a two-hour period on a sunny, weekend afternoon. I prefer to use leather gloves.

### THE PESKY AWARD

Puncture Vine (aka Goat Head). Pick up as many of these "stickers" as possible and dispose of them before they get a chance to sprout or to be carried indoors (usually on one's shoes) and get into your carpet. Inexpensive rubber thongs work well to pick them up.

*Peggy Dierking*  
*Master Gardener*