

High on the Desert

Cochise County Master Gardener

Newsletter

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Herb Gardening Part II: Watering, Mulching, & Maintenance

Choosing plants for your herb garden is an important step. Researching the horticultural requirements of each herb and selecting the ones that will thrive in your site will reduce maintenance chores. Be sure to factor in what herbs you will actually use in cooking or crafts. Since most herbs come in small nursery containers, usually 4 to 6 inches, it may be necessary to water them every day for the first 2-3 weeks. After that an irrigate once every 2-3 days for a couple of weeks then extend that to once every 5-7 days and so on until the plants become settled in and put down roots.

Knowing the origins of an herb will help you place the plant into the proper hydro-zone. Herbs that come from dry areas such as the Mediterranean regions, rosemary, thyme, oregano, lavender, and sage, thrive in well-drained sunny sites. Moist shady sites are well suited for bee balm, mints, and parsley. There are herbs, like roses, that do well in moist sites that receive half-

day sun, preferably in the morning. A good basic introduction into herb gardening is *The Herb Gardener—A Guide for All Seasons* by Susan McClure.

To conserve water and to make watering easier install a drip irrigation system or use soaker hoses. I use soaker hoses as my herb gardens are designed so that one 50-foot soaker hose waters an entire bed. Water in the morning or late afternoon and wet the soil to a depth of 12-16 inches. Check the soil moisture regularly during periods of hot weather if you have raised beds so they dry out quicker than ground level or sunken beds.

A 2 to 3 inch layer of mulch will reduce water evaporation and extend the watering timetable. In addition they will help keep the crowns of herbs stable during cold winters. Organic or “mineral” mulches (decomposed granite) works well. Aes-

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thematically speaking, decomposed granite looks good with the Mediterranean herbs and wood chips look nice with herbs that fall into the moderate to high water category. At the end of the gardening season I run through my chipper all the veggie garden debris to include corn stalks and newspapers, mix that with some composted manure and spread it over the herb beds and on to the tops of the container plants.

Annual maintenance of herbs includes removing spent annuals and deadheading flowering herbs. Other than that herbs are pretty self-sufficient. No wonder they are so popular!

Next month: What to Grow – A Herb Chart

Cheri Melton, Master Gardener

Cuttings 'N' Clippings

* The next regular meeting of Cochise County Master Gardeners Association will be September 5, 5:00 pm at the Sierra Vista Library.
* Saturday, September 8 from 9 a.m.—1:00 p.m. the Water Wise/ Master Gardener Xeriscape Tour is planned. This free self-guided tour will feature low water use landscapes in the Sierra Vista area. A must for all! Mid August, call the Cooperative Extension office in Sierra Vista for a map.
* Saturday, September 15 from 9 a.m.—2 p.m. at the U of A South the Cochise County Master Gardeners Association will be hosting the Fall Garden Fair. A terrific place to buy plants after you go on the tour the weekend before!

* Congratulations to the Cochise County Master Gardeners listed below who have been selected to attend the first Master Gardener University, August 10-11, on the University of Arizona Tucson Campus. Their hard work and dedication as volunteers is greatly appreciated. They are: Emily Boyd, Gwen Garcia, Carolyn Gruenhagen, Gary Gruenhagen, Janet Jones, De Lewis and Cheri Melton. There will be other opportunities in the future to attend the Master Gardener University. The next one is to be held in 2003.

* Thanks to Giselheid and Jim Regner for sharing their home with CCMGA members—everyone who went on the tour had a wonderful time!

Wettie sez...

BE Water Wise!



**Catch rain, dear!
Water harvesting
is a great way to
save water for
plants.**



The U of A Water Wise Program

458-8278, ext. 141

August Reminders

- Keep pulling weeds
- Fertilize
- Prolong annuals
- Plan spring wildflower garden
- Watch for nutrient deficiencies, sunburn, saltburn, over-watering, insects
- Plant cool-season flowers & veggies

* Saturday, September 8 from 9 a.m.—10 a.m. "It's All in the Timing—Irrigation Controllers" with Horticultural Extension Agent Rob Call. Given at the University of Arizona South campus 1140 N. Colombo (behind Cochise College), this free seminar will take the mystery out of irrigation controllers, and help to answer your questions about watering your plants. This is part of the Water Wise monthly series. For more info call 458-8278 ext. 2141.

Robert E. Call

Robert E. Call
Extension Agent, Horticulture
Carolyn Gruenhagen
Editor

The Virtual Gardener—Managing on a tight water budget

A few weeks ago I had the pleasure of attending a *Water Wise* seminar on water harvesting presented by a delightful and knowledgeable speaker, Ann Phillips. I came away from the presentation with some simple ideas for water harvesting that anyone can put to good use.

According to Ann, the best place to store water is in the ground. This idea really caught my attention, and I thought I would share with you this month some of the techniques I am using to harvest rainwater and store it in the ground.

Natural water arrives on your property in two ways. It either flows in from somewhere else or falls from the sky. Once it arrives it also leaves in two ways—by flowing on to another location or evaporating back into the sky. The objective of water harvesting for gardeners is to make best use of the water nature sends us by directing it to our plants and delaying its return back into the atmosphere until our plants have benefited from it. There are basically two strategies for accomplishing this.

The first strategy is to direct the flow of the water to our plants. One obvious way of doing this is to capture the runoff from roofs and paved areas and either place plants where they will receive the runoff or collect the water from the runoff and channel it to the plants. The effect of this is like multiplying the amount of rain that falls. For example, suppose you collect water from a paved area of 500 square feet and use it to water a flower bed of 100 square feet. If only 0.25 inches of rain actually falls, the flower bed gets the equivalent of 1.5 inches of rain. Not bad!

Of course you don't have to collect water just from rooftops and driveways. Even placing a plant next to a large stone results in an effective multiplication of the amount of rainfall. The size of the multiplication factor

depends on the ratio of the collecting area of the stone to the area to be watered around the plant. If the area that needs to be watered around a flower is 1 square foot and the collecting area of the stone is 1 square foot, the result doubles the amount of water received by the plant.

If your property has a slope, you can collect runoff by building U- or V-shaped berms on the down slope sides of your plants to collect the runoff and channel it to the plant. The opening of the U or V should point upslope of course. When building these berms, remember to think big. Plants get most of their water from the areas outside the drip line. Berms around trees should be at least at the drip line and ideally beyond it.

I have built berms like this to supply extra water to native mesquites growing on my property, and the results have been amazing. I think we often fail to realize how close to the edge most native plants live and how much the equivalent of an extra few inches of rainfall a year can mean to them.

If your property is flat, you can concentrate water by planting in sunken beds. Scoop out depressions for your planting beds and use the excess soil to create ridges between the depressions. Rain that falls on such an area runs off the ridges and collects in the bottoms of the depressions, providing extra water to the plants. Ann Phillips describes this as the "cupcake tin" approach to landscaping because your yard looks like a cupcake tin when you finish with the sculpting. Note that the depressions

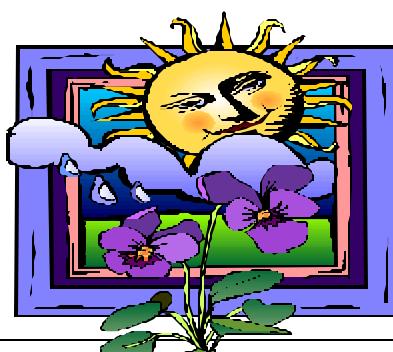
do not have to be very deep. Water only needs a slight slope to flow.

Collecting the water around your plants is only part of the job. The second strategy for water harvesting is to minimize the amount of water that evaporates directly back into the atmosphere. Although the water will ultimately return to the atmosphere by evaporation, in so far as possible we want to make that happen only after it has been taken up by our plants.

When rainfall collects on the surface of the ground some of it infiltrates into the soil and some remains on the surface. As soon as the storm is over (actually before it's over), some of the water that has puddled on the surface begins to evaporate and return to the atmosphere. Water that infiltrates into the soil is pulled downward under the force of gravity and soaked up (adsorbed and absorbed) by particles in the soil as it moves downward. The depth to which the water penetrates depends on the amount of rainfall, the rate at which the rain was delivered, and the quality of the soil.

Once the storm is over and the sun begins to heat the soil, water in the uppermost layers begins to evaporate. This causes the water in the layers below to be drawn upward by capillary action to replace the water lost to evaporation. By this process, water is drawn upward and the soil gradually dries downward. Of course plants also play a part in the process of removing water from the soil.

Plant roots "mine" water from the soil and draw it into the plant. Plants use this water in a variety of ways—to carry nutrients and sugars to all parts of the plant, to create the internal pressures that keep the plant rigid, to build tissues, and to control internal temperatures. Most of the water is pumped quickly through the plant, however, and exits through tiny pores in the leaves where it evaporates back into the



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atmosphere. This whole process is known as evapotranspiration. Ideally, we would like to make all the rain-water that falls on our property return to the atmosphere through evapotranspiration instead of losing it to direct evaporation.

We use two tricks to minimize water losses to direct evaporation. First, we eliminate puddling as much as possible by loosening and fluffing the soil and adding amendments to speed up infiltration and increase the water holding capacity of the soil. Second, we use mulches to place a barrier between the surface of the soil and the sun. Mulches are porous enough to allow water to penetrate into the soil but slow down evaporation by keeping the soil surface cool and by slowing the upward movement of water from the soil. Organic mulches such as straw and inorganic mulches such as gravel or sand have large pore spaces that minimize upward migration of water by capillary action.

If you have soil like mine, you need to apply one more trick to get water to infiltrate deeply into the soil. One area of my yard is a very fine clay that has been heavily compacted. I suspect that the compaction is at least partly due to vehicles and heavy construction equipment being parked there while the house was under construction. The soil in this area is so heavily compacted that by the end of the monsoon season, the moisture has penetrated only a foot into the ground. Below that the soil is as dry as a bone and has the consistency of face powder. I cannot lift it out of a hole with a clam-shell post hole digger because it is so fine and powdery.

To encourage deep rooting of my trees I must get water through the compacted clay layer to the more porous soil beneath. To do this I have constructed infiltration pipes at the apex of each of my U- and V-shaped berms. These infiltration pipes are 1 foot in diameter, 3 feet deep holes bored into the ground with a posthole auger and filled with sand. Water that accumulates behind the berms quickly

drains away through the infiltration pipes to the more porous layers of soil below instead of being trapped in puddles on the surface.

I hope this article has given you some ideas on how you can make better use of the water that nature provides for free. To get some more ideas, check out the following Web sites:

From the United Nations Food and Agricultural Organization (FAO), a manual on water harvesting: <http://www.fao.org/docrep/U3160E/U3160E00.htm>

From our own Cochise County Water Wise program, a brochure on water harvesting: <http://ag.arizona.edu/cochise/waterwise/rainwaterharvesting.htm>

An article from an Australian permaculture group: <http://www.rosneath.com.au/ipc6/ch02/orion/>

Until next time, happy surfing.

Gary A. Gruenhagen, Master Gardener
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The Time is Now!

I know that while the temperatures are still in the 90s it is hard to think of the return of Ol' Man Winter but by gosh by golly the first freeze could only be 90 days away! Historically, the first freeze can occur anywhere from late October to mid December. The actual date is hard to predict and varies widely in the local area due to elevation changes and many local micro climates. After 15 years here, I have learned that dilly dallying around when it comes to frost protection can mean that many of your plants are not long for this world.

First off let me say that generally if you stick to just native plants, you aren't going to need to do too much winterization. However, even some "natives"

might need a little assistance to make it through a harsh winter. Non-native or marginal plants require more care to successfully overwinter in our area. I am bombarded constantly by questions from gardeners who attempt to fool Mother Nature by attempting to grow what nature did not intend to be here.

Marginal plants should be planted as soon in the growing season as possible. You should also buy the largest container sized plant your budget will allow. These plants need time to develop a strong, healthy root system to sustain them through the cold months. If you don't have these kind of plants in the ground by mid August—I strongly suggest you defer planting such until next spring. Examples of such plants are: *nerium oleander*, *caesalpinia pulcherrima*, *salvia leucantha*, *callistemon citrinus* and all species of lantana. This list is not all inclusive. Generally, I would consider any plant that cannot readily survive to 20° in the city or 15° in the outskirts to be a marginal plant.

If you just have to have these plants, site them properly to take advantage of the natural environment. Marginal plantings need any additional warmth that Mother Nature can provide through proper siting. Warm southern locations near walls that retain heat and then release it at night are ideal locations. Never, ever site marginal plants in locations where cold air can pool. You'll be holding requiems for dead plants in the spring if you do.

Now is also the time to be aggressively composting. You will be

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generating a lot pf plant material to add to your pile. In addition, the warm temperatures and moisture of the monsoon are ideal for cooking your compost. You will need this composted material in quantity to not only enrich your garden soil in the fall but to add insulation around your tender plant's root systems. The key to survival for many marginal plants that die to the ground in the winter is survival of the root systems in the winter. Winter extremes vary widely here in the High Desert but it is always wise to plan for the worst case scenario. Any of you who don't believe that it doesn't get really cold here need to seek out someone who lived through the great freeze of '78. At that time, we sustained three days of subzero temperatures during the night and 18" of snow on the ground. Almost all marginal plants and many "native" went to that great plant heaven in the sky that winter.

You should also acquire insulation cloth or burlap now. There is always a run on such materials right at the time of first freeze. Don't be caught without. I prefer insulation cloth. Not only because it is relatively inexpensive but also its durability and ease of use. Also, I always watch for very early sales on Christmas lights. I keep a good supply of large Christmas lights on hand. During the late spring freezes last year, I had them all through my almond tree. It kept it warm enough that I did not lose my almond crop even though temps dipped several nights into the low to mid 20s in the canyons.

These are just a few measures that you can take to get ready for the return of cold weather. As they say, "An ounce of prevention is worth a pound of cure."

John Phillips, Master Gardener

The Agent's Observations

Q

Some of my crops are maturing and I am having problems with birds. They seem to eat only one bite from a fruit or vegetable. What can I do to protect my crops?

A

Birds such as meadow larks, horned larks, sparrows, blackbirds, starlings, doves, and grackles attack newly seeded and emerging vegetable crops causing major crop damage resulting in significant losses. Some common bird control practices include: 1) exclusion by installing netting to protect highly valuable crops; 2) auditory or visual frightening devices such as distress, alarm calls, propane exploding cannons, scarecrows and shiny reflective materials; 3) cultural practices to reduce attractive weeds and insects or other roosting sites; 4) shooting may be effective but most birds are protected by the Migratory Bird Treaty Act and depredation permits from the U.S. Fish and Wildlife Service and/or the Arizona State Game and Fish Department are required; 5) chemical repellents and toxicants have not been fully researched nor registered for use on many crops. Creating habitats or hanging nest boxes for large predatory birds may deter the smaller pest birds that invade crops. Hanging shiny mylar ribbons on fencing or sprinkler heads or hanging disposable pie tins in trees may work for the short term. Placing scar crows in the garden or orchard reinforced with "bird patrols" is a common, time honored practice but can be time consuming. Birds habituating to the various repellent and scar practices making it extremely difficult to exclude the various species from your crops.

Q

I have peaches that are ripening but they have bumps all over them. There is some brown discoloration on the skin also. What is causing this and what can I do about it?

A

After examining the fruit in question it was determined that the damage was caused by stink bugs, not to be confused with the black pinacate beetle (*Eleodes obscurus sulcipennis*) that raises its posterior and emits a foul chemical. These stink bugs are not beetles but true bugs-Order Hemiptera, which means half covered wing, that form a shield or scutellum on their backs. These insects will feed on several different crops with their long proboscis "beak" or "soda straw" piercing-sucking mouth. This feeding causes cell damage and thus the bumpy-lumpy and brown surface of the peach. Most adult stink bugs overwinter as adults in sheltered places like fence rows, roadsides, ditch banks or other places with abundant plant remnants. In early spring when temperatures reach 70° F. or above they become active. The female will begin laying eggs in clusters that average 30. She can lay 300-500 clusters. Depending on temperatures, eggs hatch in a week or so and after 5 nymphal instars or molts they become adults. This process take about 6 weeks depending on climatic conditions. There are several species of stink bugs in our area so it is difficult to say which ones caused damage on the peaches.

The following stink bugs are commonly found in Arizona: Say Stink Bug (*Chlorochroa sayi* Stål)adults vary in

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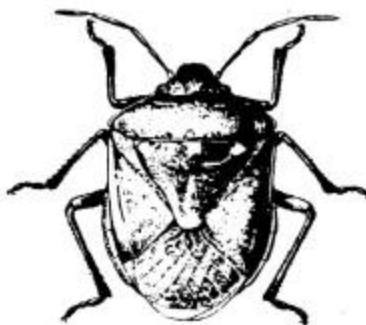
color from dark green in the spring to light green in midsummer, changing to olive green or red-brown in the fall and winter; the Western Brown Stink Bug (*Euschistus impictiventris* Stål) are smaller than the Say species, and are uniformly yellowish brown; the Green Stink Bug (*Acrosternum hilare* (Say)) is a large green species and is probably the one that attacked the peaches; and the Conchuela Stink Bug (*Chlorochroa ligata* (Say)) which varies in color from dull olive or ash gray to green, purplish-pink, or reddish brown, with an orange-red band along the lateral margin of the thorax and the wings with a similar colored spot on the scutellum.

Control: Destroying overwintering locations where practical and

controlling weeds late in the winter and spring will help control these pests. Pesticide use may be needed in particular situations.

Source: *Insect Pests of Farm, Garden, and Orchard*. Eighth Edition. 1987. Ralph H. Davidson and William F. Lyon. John Wiley & Sons, Inc. New York. pages 260-262.

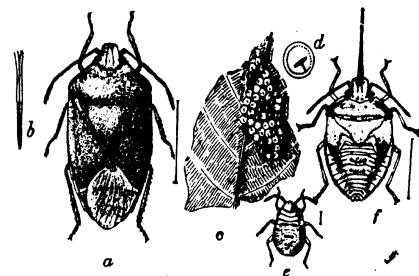
*Robert E. Call
Extension Agent, Horticulture*



Say stink bug, *Chilocroca sayi* Stål; 3X. (Caffrey and Barber, USDA)

The Bats are Coming!

To learn more about the fascinating bats that will begin migrating through Cochise County and who might be emptying out your hummingbird feeders see our article on our website at: <http://www.ag.arizona.edu/cochise/mg/bats.htm>



The green stink bug, *Acrosternum hilare* (Say), an occasional pest of cotton: (a) adult; (b) beak; (c) eggs; (d) end of egg more enlarged; (e) young nymph; (f) last stage of nymph; 2X. (USDA)