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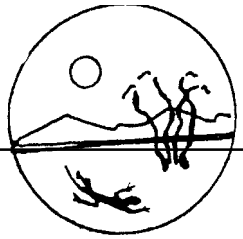
High on the Desert

Cochise County Master Gardener

Newsletter



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

Creating a Grassland Garden that Embraces our High Desert

If you're tired of the hot, sterile gravel look, have had it with blowing dirt in your eyes, or just bought a new place and want a natural looking garden, consider using native grasses. Most of Cochise County is defined as a High Desert region—that is we are a semi-arid grassland. May begins the season for landscaping with native grasses.

There are many reasons to landscape with native grasses. In addition to the aesthetic qualities, grasses work in harmony with the natural landscape and Mother Nature. Grasses prevent soil erosion, inhibit unwanted weeds, are much cooler than gravelscapes, and provide shelter, forage, and seed sources for insects, animals, and birds. When interplanted with a native garden grasses act as a natural mulch. Also, there is a long-term cost savings and increased enjoyment due to less intensive management because grasses are self-perpetuating, can be sustained on rainfall alone once established, and require no fertilizers or pesticides. After the first year no maintenance is required, and the grass is considered established. However, grazing or mowing it once a year after the grass has gone to seed in late fall/winter will help strengthen the plants.

Jim Koweek, owner and operator of Diamond JK Nursery in Sonoita, specializes in native and hard to find plants for Arizona and New Mexico. The nursery also carries native grass seeds and grasses grown in containers. Jim says the most popular grasses for High Desert gardens are Blue Grama, Side Oats Grama, Plains Lovegrass, Green Sprangletop, Cane Beardgrass, Arizona Cottontop, and the Muhlys (*Muhlenbergia*).

Jim's motto is: Revegetation with Native Grasses: "If You Water It—It Will Grow!" The formula to a successful revegetation project is: Seed + Proper Temperature + Sufficient Moisture = Grass.

Most of our native grasses are warm weather species and need warm temperatures to germinate. The soil should be at the proper germination temperature anytime after May 1st. The most important factor is sufficient moisture. The seed MUST BE KEPT CONSTANTLY MOIST for 8-14 days. This may require setting up a temporary sprinkler system to keep the area moist. Or one can sow seeds in July and hope that the rains are timely enough to provide the moisture needed for germination. After 14 days the grass needs irrigation once to twice a week, either by sprinkler or rainfall, to keep it growing and getting those extensive grass roots established. You may think that the irrigation required to get the grass seed germinated and growing the first year is wasteful. But consider the fact that after the first year the grass becomes established, will be there for years and years and can be sustained on rainfall alone – it's a pretty good thing!

(continued on next page)

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In terms of application rates, small, important areas should be seeded at a rate of approximately one pound to every 500 square feet. Pasture restoration is 15-80 pounds per acre depending on conditions and budget. Unless the ground is severely compacted, no ground preparation is needed.

According to Jim there are two methods of application: *Feeding the Chickens*, also known as hand broadcasting. Simply walk in straight lines while spreading seed. *Hydro-seeding* is seed mixed with mulch, fertilizer, and tackifier (something to make it stick) and shot in place with a pump.

I have used the "feeding the chickens" method in small areas and it works very well. For larger areas it would be worth the time and expense to choose hydro-seeding. I have talked with other gardeners who have had hydro-seeding done and they were very happy with the results. Wild-flowers can also be added to the hydro-seed mix.

Jim says the six top possible barriers to success are:

1. Lack of sufficient moisture
2. Lack of sufficient moisture
3. Lack of sufficient moisture
4. Grasshoppers (as in the Summer of 2000)
5. Rabbits
6. Harvester Ants

Resources: Special thanks to Jim Koweek for the grass information in this article. For more information contact Diamond JK Nursery at (520) 455-9262.
Desert Grasses, Arizona Native Plant Society.
Grasses of Southeastern Arizona, Coronado RC&D Inc. This is an excellent booklet for identifying grasses and is available for purchase through the Sierra Vista Cooperative Extension Office.

Cheri Melton
Master Gardener

Robert E. Call
Extension Agent, Horticulture

Carolyn Gruenhagen
Editor

Cuttings 'N' Clippings

➢ Cochise County Master Gardeners will hold their annual business meeting, election, and picnic on May 23 from 5:00 - 7:00 p.m. at Gwin Garcia's home. Nominees will be announced at the May 2 meeting. For more information contact the Cooperative Extension Office in Sierra Vista.

CCMGA Update

CCMGA is making a donation of 13 books to each of the Cochise County Libraries. The 11 libraries will receive the following basic books to be kept on reference–they cannot be checked out and are therefore always available.
Native Plants for Southwestern Landscapes, Judith Mielke
Sunset Western Garden Book
Sunset Western Landscaping
Sunset Western Problem Solver
Natural by Design & Plants for Natural Gardens, Judith Philips
Pruning, Planing, & Care, Eric A. Johnson
Rodale's Pest & Disease Problem Solver
Low Water Use Plants, Carol Shuler
Gardening in Dry Climates, Ortho Books
Xeriscape Plant Guide, Denver Water
Insects of the Southwest, Werner and Olsen
Plants of Arizona, Anne Orth Epple
Illustrated Guide to Arizona Weeds, Kittie Parker

The Bookmobile will receive:
Rodale Pest & Disease Problem Solver and Illustrated Guide to Arizona Weeds

CCMGA has made a donation to The Cochise County Herbarium at the UAS Plant Sciences Center. The donation of $2,600 will be spent for books and paper supplies for collecting and filing.

Our school grants program, small grants up to $250, has now awarded four grants. This year they went to Huachuca Mountain Elementary, Colonel Smith Middle School, the "Garden Power" Club of Sierra Vista Middle School, and to the Village Meadows Elementary class of severely disabled children to build an enclosed, handicapped accessible garden with raised beds. We hope to spread the word to our schools about the grant program to plan for fall—our best time to plant!

Barbara Kuttner, President CCMGA
Master Gardener

An Earthworm Paradise

Gardening in our soils here in the High Desert can be quite a challenge. Soils in this part of Cochise County are extremely low in organic matter, have high salt content, are very alkaline, and usually have poor drainage. Native plants have adapted to these soil characteristics and have learned to thrive in soils that non-adaptive plants do not like. It is not advisable to attempt soil modification (i.e. adding amendments) when planting trees or shrubs, however building a good garden soil can be the key to success when planting xeriscape zone one annuals and perennials.

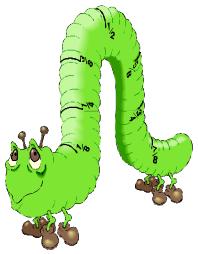
Most non-native annuals, veggies, and perennials prefer a soil rich in organic matter, neutral or slightly acidic in PH, and with good drainage—just the opposite of our soils. Adding organic matter to enrich your garden plot will not be a one-time undertaking however. Our year-round higher soil temperatures encourages a higher rate of decomposition and the organic matter you amended your garden with this year will generally disappear in 18 months or so. Therefore, amending the soil in your garden must be a yearly endeavor.

There are many different sources of organic matter for your garden each with its own pluses and minuses. I tend to rely more on my own compost rather than buying commercial products. This is not to say that the organic amendments found at your local gardening shop are bad; it is just easier on the pocket book to make your own. Residents of Southern Cochise County have an excellent source of humus provided by the City of Sierra Vista composting facility. (See back page.) But no matter whether you decide to make your own or buy make sure you know what you are putting into your garden! Always ensure that the humus product you are using to amend your soil is well composted. Mixing shredded bark into your garden soil, for example, is not recommended. The decom- position process takes nitrogen from the soil and can result in a nitrogen deficiency. Putting fresh manure in the garden can result in plant burn or the accumulation of excess salts.

Manure is a great way to amend your gardening plot. I generally add <u>well composted</u> manure in the fall after the freezes have done in my garden for the season. I can therefore rely on Mother Nature to correct any "stupid attacks" that I might have had in the process. I, like most zealous gardeners, tend to overdo it, so the winter rains can leach excess salts out and microbial action diminish the "hotness" of the added manure. Different types of manure have differing degrees of hotness. You should be particularly careful with poultry or rabbit manure. Horse manure must <u>always</u> be well-aged before adding to the garden. The digestive system of horses is not very efficient and so undesirable seeds can be introduced into your garden if the manure has not been well composted.

If you decide to make your own compost, be prepared for a little work but great rewards. The key to success is layering the ingredients in your compost pile, aerating the pile regularly, and of course, keeping the pile's components moist. Gardening shops in the local area sell products that speed up the decomposition process for those of you who cannot wait for Mother Nature to do her thing. A word of warning—DO NOT ever, ever, ever add Bermuda grass clippings to your compost pile. Unless you manage your compost like an advanced science project, the Bermuda will sprout and take over your compost destroying your hard work. For further information on composting, contact the cooperative extension.

If you generate excess vegetative matter from you kitchen as I do, you can bury it directly in the garden. My great aunt always did this and over a number of years developed a rich black loam. However, if you have nightly visits from our little mountain piggy friends, don't do this. It will only encourage them to root around even more in your garden. I routinely bury potato peels, carrot scrapings, old lettuce, *etc.* in my flower garden. I do this simply because my compost heap would be overwhelmed with excess "green" vegetative matter. This is a great way to dispose of this since those of us on septic systems should <u>never</u> use a garbage disposal and put these down the drain.



I have been following this regimen of adding organic material to my garden for ten years and I now have rich garden soil for my flowering plants and veggies. And lo and behold, it has become an earthworm paradise.

John Phillips
Master Gardener

Garden Tip No. 7563

Do you ever find yourself running back and forth from the business end of a hose to the faucet trying to get the flow adjusted to just the right level? I do—or more correctly, I did. Now I have a device that eliminates that form of aerobic exercise from my gardening activities.

I often use soaker hoses to water trees and shrubs and like to set the water flow so that the water doesn't puddle but is still sufficient to infiltrate the soil. Getting the flow just right requires a very light touch on my faucets. Perhaps the faucets on my house are unusual but it seems as if they are either full off or full on. I turn the faucet ever so slightly and run out to see how fast the water is coming out. Usually the flow is much too hard so I run back to the faucet and turn it just a bit and then run back to check the hose again. It often takes a number of trips back and forth to get things adjusted just right. The faucets are so sensitive that moving the handle just a fraction of a millimeter seems to make the difference between no output and a flood.

A couple of years ago I had an "aha" experience when turning the water on for my evaporative cooler. As I turned and turned and turned the tiny valve cock, I realized that the needle valves that control the flow of water to the cooler give you great control over the flow of water. Instead of turning the valve a sixteenth of a turn to get full flow as I can do with the hose bib faucets on my house, I have to turn the valve cock on my cooler five or six complete turns to open the valve to full flow. I thought if I could put one of those small valve cocks on the end of a garden hose, I could gain very fine control over the water flowing to my soaker hose.

I stopped by a local hardware store and took a look at the supply of brass fittings. I found that I could buy male and female fittings that would allow me to attach to a standard garden hose, but they were threaded to attach to a ¾ inch pipe and the valve cock I wanted to use was threaded for a ½ inch fitting. Not to worry, however, because the plumbers have adapters for almost every combination of sizes you can imagine. All I needed was the appropriate adapter to step the size down and it was available. Next I found that the valve cock was threaded to attached to a copper tube using a compression fitting, so I also needed to buy a couple of compression fittings and a short length of 3/8 inch copper tubing to bridge the gap between the adapter and the valve. After a bit of head-scratching, I found all the pieces necessary to kludge together a valve that I could attach to the hose and for about $10.00 assembled them into the device shown below.

Now I have a valve that allows me to precisely adjust the flow of my soaker hose from the end of my garden hose. This has saved me hundreds of trips between the faucet and the soaker hose and given me a lot more energy for cardio workouts on my exercycle. Humm!

Gary A. Gruenhagen, Master Gardener
gruenha@sinosa.com

May Reminders

✓ **Deep water**
✓ **Plant warm season crops**
✓ **Check tree ties**
✓ **Control pests**
✓ **Control weeds (*Controlling Weeds* - a bulletin available from the Cooperative Extension)**

Water Wise Workshop Series

All of the following workshops are free and open to the public. They are held at the University of Arizona South Campus located at 1140 N. Colombo in Sierra Vista from 9:00 - 10:00 a.m..

June 2: *Let's Get Our Feet Wet—Water Harvesting* presented by Ann Phillips, Water Harvesting Consultant, Tucson.

July 7: *Low Water Use Landscaping Plants for Cochise County* presented by Larry Park, Zamp Country Nursery, Douglas.

August 4: *Planting Techniques* presented by De Lewis, Certified Arborist and Cochise County Master Gardener.

If you would like a free on-site consultation, call the *Water Wise* Program at 458-8278, Ext. 2141 and a qualified water conservation educator will visit your home or business and give you tips specific to you!

Cado Daily
Water Conservation Educator

The Agent's Observations

Q I have seen some funny looking bees visiting apple blossoms and other flowers. They seem to be pollinating the flowers but they will hover and dart over the flowers at times. What type of bees are these and are they good pollinators?

A The insects that you have observing are syrphid flies, also known as flower flies. Most are pollinators, but maybe not the best on apple flowers. There are about 950 species in North America and they are important pollinators of many species of flowers. Syrphids are also called hover flies because of their flight capabilities. They will spread their wings when resting. They have been miscalled 'sweat bees' but cannot sting. Many syrphid flies are dark brown or black with yellow markings. Some common syrphids closely resemble bees and wasps in color, shape, and with the presence of dense hair mimic them pretty well. That's a trick most syrphids use for survival.

References: Carl Olson, Associate Curator of Insects, University of Arizona, Tucson, AZ.
How to Know the Insects, 3rd Edition. 1978. Roger G. Bland and H.E. Jaques. Wm. Brown and Company Pub., Dubuque, IA. Page 341.

Q I am confused about fertilizers. What do the numbers on the bag mean? What are the differences between organic and chemical fertilizers?

A By law three numbers are required on a fertilizer bag. These are the percentage by weight of nitrogen (N), phosphorus (P) and potassium (K) or N-P-K and in that order. Therefore, a bag of ammonium phosphate is marked 16-20-0 or 16% N , 20% P, and 0% K. The "N" is actual total nitrogen no matter what the form. "P" is really the percentage of P_20_5 and "K" is really percentage of K_2O. (A side note—to get the actual amount of P you must multiply the number on the bag by 43% and to get the actual amount of K multiply by 83%. These percentages are derived by taking the atomic weight of the element in question and dividing by the atomic weight of the total molecule. There have been efforts to revise the current labeling of fertilizers so only the percentage of P and K appear, but these efforts thus far have ended in failure.)

Our soils need N for normal plant growth. This is because it leaches from the root zone or is used by soil microbes. Plants absorb nitrogen in the inorganic form only. Most require N in the form of NH_4^+- (ammonium) and/or NO_3^-- (nitrate). These are both inorganic molecules. Generally plants use nitrate over ammonium. Ammonium is converted into NO_3^- by aerobic soil bacteria and some fungi. Cool, wet soils have less bacterial activity and will yield less nitrate nitrogen. Nitrate forms of nitrogen are taken up by plants directly and is better used in cool, moist soils. Many nitrogen based fertilizers are made by a process which uses atmospheric nitrogen (air), the stuff we breath is 78% nitrogen, and natural gas (methane) under high pressure and heat.

If the fertilizer for example is ammonium sulfate, 21-0-0, 21% of the material in the bag is nitrogen and the remainder is sulfate, hydrogen, and salts. Synthetic fertilizers may contain high portions of salt, not necessarily table salt, but other types of salt. These can cause excessive salinity in our soils. Excessive salt may be taken up by plants and cause leaf burn. To avoid this salts must be leached below the root zone with water. To leach salt from the soil, water three to four times as much as normal every couple of months.

Organic sources of nitrogen included blood meal and fish emulsion which are usually 5-15% nitrogen. Organic forms of nitrogen must be mineralized, which is the conversion process by soil microorganisms into inorganic nitrogen that is available for plant use. Plants do not use organic forms of nitrogen. Thus, carbon-based organic matter is slowly broken down into humus by soil organisms that use N as an energy source.

Our desert soils are also low in native phosphorus and it should be added at planting time. Phosphorus binds with soil particles and

(continued on back page)

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does not leach. It does not "melt" into the soil with water like nitrogen. There are several forms of phosphorus. Many are produced by treating phosphate rock with an acid. Treatment with phosphoric acid yields triple super phosphate or 0-45-0. Rock phosphate can be neutralized with ammonia to make ammonium phosphate, 16-20-0 or liquid fertilizers. Organic forms of phosphorus are available, with bonemeal, 0-12-0, being the most common.

Potassium is not normally needed in our desert soils. There are many fertilizers on the market which have other nutrients for plant growth. Higher priced fertilizers have some of these nutrients added, thus increasing the cost. Organic based fertilizers, like manures and composts, have lower plant nutrient levels but add organic matter and micronutrients. Thus, they are more beneficial than synthesized fertilizers in this regard. However, the higher cost and large amounts needed of organic fertilizers for normal plant growth must be considered when compared to bagged synthetic fertilizers.

Robert E. Call
Extension Agent, Horticulture

City of Sierra Vista Yard Waste Composting Program

Sierra Vista operates Arizona's only municipal yard waste composting program. It is one of the city's most popular environmental programs. City residential refuse customers may deliver yard waste to the facility free of charge. (Bring a copy of your City refuse bill to show the attendant.) They may also call 458-7530 to arrange for a free special pick-up of their yard wastes. Both mulch and compost are sold to the public at the site at bargain prices! The compost site is located adjacent to the County Transfer Station on Hwy 90 East (just past the entrance to the City Wastewater facility). Call the Environmental Services Division, Department of Public Works at 458-3315 for more information.