



High on the Desert Cochise County Master Gardener Newsletter

Vol. 15, No. 5 MAY 2004

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

Vegetable Gardening—What Shall we Grow

It makes sense to plant only what you like to eat! Sit down and make a list of the vegetables that you and your family eat the most. Then break this list under two headings: cool season crops and warm season crops. This will enable you to plan where and how many vegetables to plant in addition to planning for crop rotation. Right now is the time to plant warm season vegetables. I try to choose seeds or plants that are suitable/known to yield well in desert regions. I have found that short season varieties perform well in our climate in addition to vegetables from Italy and France. At the end of this article is a list of my favorite seed sources. I like to start seeds in the greenhouse in March for planting out on May Day. The benefit of starting plants from seed is that you will find a greater range of plant material to choose from, especially if you like to grow organic heirloom varieties.

When planting seeds straight into the ground I like to soak small seeds for 6-8 hours and large seeds 10-12 hours. This helps the seed imbibe water and germinate quicker. The common reason why seeds do not germinate is that they dry out, soils are too cold or wet and old seed. I direct seed corn, beans, and squashes.

You can bypass the seed starting procedure and plant vegetable plants. Many stores carry various vegetable seedlings although the selection of varieties sometimes can be limited. Most of the time I find that the root balls of the four-inch containers are very root bound so you may have to watch the watering to ensure the root ball doesn't dry out. A paper bag placed over the plant (both the top and ends are open) to help protect the plant from winds and heat until it gets

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In a Desert Garden

The sages—

No other plant family has as many choices for the beginning High Desert gardener as the salvias. They give color over many months and attract butterflies and hummingbirds to the yard. Most of them are robust and easy to grow. Salvias are part of the mint family including some 900 species from all over the world. All sages have square stems and two-lipped flowers in colors ranging from white, yellow to salmon, pink to scarlet, pure red to lavender, and blue to purple. Many sages have strong aromatic foliage which makes them uninteresting for deer and rabbits to eat.

As there are so many varieties, I will be only touching a few of them. These are easy to grow. First and foremost is *Salvia greggii*, Autumn sage, is native to Southern Texas into Northern Mexico. This plant is mostly evergreen and grows 1 to 4 ft. high and wide and has a long blooming season, from spring to fall. It comes in a wide variety of colors. The most common are shades of red but also white and yellow. I recently found one in deep purple and I also grow a variegated one. My white one, after 6 years, is blooming with white and red on the same plant—that is quite unusual. These plants are very easy to take care of. It is

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good to cut plants back in late winter before new growth appears to prevent plants from getting woody.

Another sage, one of my favorites, is *S. Clevelandii*, Cleveland sage. This is another evergreen shrub and gets very large, 5 to 8 ft. wide. In my yard it blooms all season long and it has the most fragrant foliage. After a summer rain my yard is full of this wonderful odor. I love blue flowers. It is very drought tolerant, and it almost dislikes water. After 2 years it should not be kept on irrigation. Only in very dry months one deep watering is necessary. It is easy to over-water this sage. There is also a miniature variety of this plant available. It only grows to 2 to 3 ft. I found it does not bloom as willingly.

Another beautiful and easy to grow blue sage is *S. chamaedryoides*, Germander Sage. These plants form clumps to 3 ft. wide and high and are evergreens. The foliage is almost silver and the flowers are true blue. It also has a long blooming season. It should be cut down in spring to avoid it going woody. It also is very drought tolerant but does better with some irrigation.

Another blue sage I want to mention is *S. farinacea*, Mealy Cup Sage. In higher locations it might not be fully hardy but as it self-seeds quite readily it is worth growing.

The last blue sage I am going to write about is *S. Pitcheri*, Pitcher Sage. It forms a bush to 3 ft. wide and high with absolutely lovely blue flowers. Unfortunately it is not that easy to get. It dies to the ground in winter and comes back in spring. Being drought tolerant it does not like wet winters.

S. elegans, Pineapple Sage, a deciduous perennial is a must for hummingbirds. The flowers are scarlet red and the plant grows to 4 ft. in one season. Blooming time is late summer and the plant does better with some afternoon shade and likes a bit more water. Keep in mind when you plant it that it will freeze to the ground. The foliage is very aromatic and makes a good tea.

S. leucantha, Mexican Bush Sage. This is another beautiful sage which grows quite large, up to 6 ft. wide and 3 ft. high. The leaves are velvety green and the flowers are purple and appear in late summer. Here it will freeze to the ground.

S. nemorosa. A small perennial from Eastern Europe grows to 1 ft. tall. It forms a tight rosette with erect flowers stalks. Flowers are violet to purple.

S. leucophylla, Purple Sage. This gray sage is a tall evergreen shrub and is very drought tolerant

S. mycophylla. Another evergreen shrub found native from Southeastern Arizona through Southern Mexico. This is the one found in most nurseries in a variety of colors. "Maraschino" is a hybrid form with beautiful red flowers.

Most Salvias need full sun while only a few like some afternoon shade. They need good air circulation and good drainage and dry conditions in winter. The drought tolerant salvias require deep watering in the dry season. Most do not like severe pruning in the growing season. Heavy pruning is best done in the dormant state.

Angel Rutherford,
Master Gardener



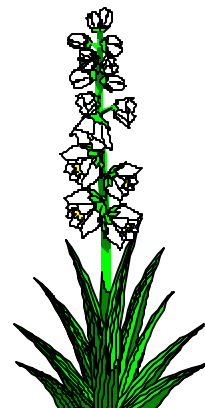
The Virtual Gardener—Chihuahuan Desert Plants

Those of you who attended the Friday night session of the 2004 High Desert Gardening and Landscaping Conference heard Wynn Anderson, Curator of Botany at the University of Texas at El Paso (UTEP) Centennial Museum, talk about the Centennial Museum Chihuahuan Desert Gardens at UTEP. Those of you who did not attend missed a great presentation, but fortunately the Centennial Museum has an excellent Web site (<http://nasa.utep.edu/chih/gardens/gardens.htm>) that allows you to take a virtual tour of the gardens and learn about the native plants that grow there.

We in Cochise County are located at the western edge of the Chihuahuan Desert (see <http://nasa.utep.edu/chih/chihdes.htm> for a more complete description of the Chihuahuan Desert), so most of the plants grown at the UTEP Chihuahuan Desert Gardens will also survive and thrive in our area. Here are a few points of comparison between Sierra Vista (as a representative location in Cochise County) and El Paso to show the similarities of the climates. On average, El Paso receives a little less annual precipitation than Sierra Vista (about 8.5 inches to our 14 inches) but the precipitation is distributed in nearly the same way. We get about 60 percent of our precipitation during the summer monsoon (Jul-Sep) to their 55 percent and we get about 20 percent of our rainfall in the winter (Dec-Feb) while they get about 15 percent of theirs during the same period. Our winter temperatures are a little warmer (only 2369 Heating Degree Days¹ to their 2603) and our summer temperatures are a little cooler (1739

Cooling Degree Days¹ to their 2210). All in all, plants that grow well in the Chihuahuan Desert Gardens in El Paso will probably also do well in this area. The only catch may be in finding sources for the plants.

Wynn's Web site is divided into a Home Page, a Garden Plan, pictures/descriptions of individual gardens in various Chihuahuan Desert Gardens, a plant list organized alphabetically by the scientific names of plants in the gardens, and a searchable database. The Home Page provides an overview of the complete site. The Garden Map and named links to the 5 individual gardens that comprise the complex allows you to take virtual tour of the gardens showing both pictures of each of the gardens and a short list of the kinds of plants grown there. The plant list allows you to select any plant grown in the garden by scientific name and view its characteristics, such as its common names in both English and Spanish, its family, its geographic range in the wild, its form (tree, shrub, etc.), and some remarks about its appearance and the environmental conditions it likes. In addition, there are pictures showing the entire plant and, where appropriate, the flowers. The searchable database allows you to access the same information about individual plants through one of five parameters—garden location, common name, scientific name, family, and life form. For example, if you pick *Life Form* as the search parameter, you can get a list of plants for each of 16 different life forms (annual herb, grass, ground cover, perennial, perennial herb, shrub, shrub to small tree, tree, shrublet, sub-shrub, subshrub, succulent, tree, tree or shrub, tree/shrub, or vine.



If you were interested in growing one of the plants featured in the gardens which is also native to Cochise County, the Fairy Duster, you would learn the following information about this plant from the Web site:

- **Common English Names:** Fairy Duster, Desert Fairy Duster, False Mesquite, Mock Mesquite, Hairy-leaved Calliandra
- **Common Spanish Names:** Mesquitilla, Cósahui del Norte, Anillo, Huajillo, Plumita, Gavia
- **Scientific Name:** *Calliandra eriophylla* (ca-lee-ANN-druh ear-ee-AW-fil-luh)
- **Family:** Fabaceae (Pea Family)
- **Geographic Range:** Southern Arizona, southwestern New Mexico into northern Mexico from Sonora to Coahuila and south to Puebla.
- **Plant Form:** Shrub 3' x 3'

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Remarks: Low densely branching plant with slender, ridged stems, small bipinnately compound leaves, and 2" flowering balls, formed by the long pink filaments of 20 or more exerted stamens emerging from small clustered flowers, provide a beautiful spring display and sometimes again in fall. Very xeric with low water requirements, full sun, good drainage, and hardy to 0° F. Good Hummingbird plant.

Until next time. Happy surfing.

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¹ Heating and Cooling Degree Days (HDD and CDD) are calculated from a base of 65 using the average temperature recorded that day. If the average temperature is above 65 degrees, a CDD is recorded for every degree above the base of 65, if the average temperature that day is below 65, a HDD is recorded. For example: If the average temperature recorded is 67, two (2) Cooling



May Reminders

- ⇒ Deep water
- ⇒ Plant warm-season crops
- ⇒ Check tree ties
- ⇒ Control pests
(The bulletin *Controlling Weeds* is available from the Cooperative Extension offices.)

Cuttings 'N' Clippings

* The next regular meeting of Cochise County Master Gardeners Association is 5:00 p.m. May 6, 2004 in Room 106 at of the University of Arizona South campus.

* The third season opened for the old-fashioned Farmer's Market held in the Warren District's Vista Park, Bisbee, on Saturday mornings from 8:00—noon. On May 8 the Sierra Vista Area Gardeners Club will hold their Spring Plant Sale at the Farmer's Market. They will have many plants grown by club members available at good prices. Other items available at the market include farm products, plants, home crafts, nature crafts, food products, yard and garden art. For more information or if

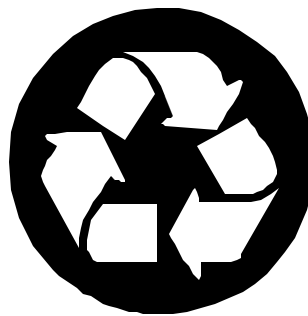
you would like to be a vendor call the Market Manager, Valerie McCaffrey at 432-7066 or e-mail: vallimac@intergate.com

* Cochise County Herbarium will sponsor a spring wildflower walk on May 15. Meet at the UAS at 8:30 a.m. There is a small fee to support the Herbarium for the not strenuous walk.

* Saturday, June 5 from 9:00—10:30 a.m. a free *Water Wise* Workshop will be held at the University of Arizona South called *Ay, Caliche! And Other Soils*, with Sandy Kunzer, Geologist, and Betsy Kunzer, Physical Scientist. Come play in the mud and learn about "caliche" and how soil type influences how to water plants.

Quick Gardening Tips:

1. Line a clay or plastic flowerpot with a coffee filter before filling the pot with potting soil. The filter prevents the soil from going through the drainage holes.
2. Sow small seeds like carrot or lettuce with a salt shaker for more even distribution.
3. To avoid dirt under your fingernails, rub them against a bar of soap before beginning garden work (or wear gloves!).



Recycling is the right thing to do!

The Agent's Observations

Q

I have elm trees that have beetles that have become quite a pest. They eat the Chinese Elm leaves. How can I get rid of them?

A

A sure way to get rid of elm leaf beetles is to cut down your tree(s) and those of your neighbor's! After examining the leaves it was determined that the tree was really the more common Siberian Elm (*Ulmus pumila*) rather than the Chinese Elm (*Ulmus parvifolia*). The Chinese Elm is a much more desirable tree than the Siberian Elm. Siberian Elms are a "trashy" tree and blowing seeds can sprout every where. The larvae of the elm leaf beetles eat the tender leaf parts leaving the veins. Adults will chew holes in the leaves. This feeding will not kill the trees but can make them look ragged and may cause premature leaf drop. Sprays of *Bacillus thuringiensis* or B.t., making sure it is the San Diego strain, will aid in controlling larvae. This product is sold under several trade names and is an organic insecticide that kills insect larvae only. It is not harmful to other insects or animals. B.t. is a natural occurring soil bacterium that must be sprayed on the leaves and the treated leaves eaten by the larvae. B.t. is washed off by rain and must be reapplied. Another solution is to spray a two-foot band of Sevin insecticide around the tree trunk, 6 to 8 feet above the ground. The elm leaf beetle larvae will travel down the tree trunk to pupate on the lower portion nearer the soil line. Crossing the Sevin strip will kill the larvae and over time reducing populations. Adults may be sprayed with general insecticidal sprays. These treatments will not control all adults if there are a lot of elm trees in the

neighborhood. Other mated elm leaf beetles may fly to your trees and lay eggs. However, these treatments can significantly reduce larval and adult populations and thus damage to tree leaves. If the entire neighborhood applies the suggested treatments the entire local populations of elm leaf beetles can be controlled.

Q

I am confused about fertilizers. What do the numbers on the bags 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, always 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 percentage nitrogen, no matter what the form. P is really the percentage of P_2O_5 and K is really percentage of K_2O . (A side-note—To get the actual amount of phosphorus you must multiply the number on the bag by 43% and the actual amount of potassium multiply the number on the bag by 83%. These percentages are derived by taking the atomic weight of the element in question and dividing by the atomic weight of the molecule that the element is in. There have been efforts to revise the current labeling of fertilizers so that only the percentage of P and K appear, but these efforts thus far have failed). Plants need N for normal growth. This is because it leaches from the root zone. Plants absorb most of their required N in the form of NH_4^+ (ammonium) and/

or NO_3^- (nitrate). These are both inorganic molecules. Generally plants use the nitrate form over the ammonium form. Ammonium is converted to N in the soil by aerobic bacteria and some fungi. Therefore cool, wet soils have less active bacteria and will yield less nitrate nitrogen. Nitrate forms of nitrogen are taken up by plants directly and is better to use in cool, moist soils. Many nitrogen based fertilizers are made by a process which uses atmospheric nitrogen, the air we breath is about 78% nitrogen, and natural gas or methane under high pressure and heat. Organic forms of nitrogen must be mineralized. This means converted into inorganic nitrogen by soil microorganisms for plant use. Also, carbonaceous material of organic matter is broken down in to humus by soil organisms that use N as an energy source. Organic fertilizer sources of nitrogen included blood meal which is usually around 15% or fish emulsion around 6%. Our desert soils are also low in native phosphorus and should be added before planting. Phosphorus binds with the soil and does not leach. It will not "melt" into the soil with water like nitrogen. There are several forms of phosphorus many being produced by treating phosphate rock with an acid like phosphoric acid. This yields triple-super-phosphate or 0-45-0. This form of phosphate can be neutralized with ammonia in factories to make ammonium phosphate (16-20-0) and liquid fertilizers. Organic forms of phosphorus are available with bonemeal,

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established will help. Wait a couple of weeks to fertilize so the root ball doesn't get burned. If you added some well-aged compost to the planting hole prior to planting you may not need to fertilize at all.

Native Seeds/SEARCH of Tucson has a handy planting and harvesting wheel in their catalog. Here's their seasonal planting guide:

- ✓ Early Spring (mid-January – late February) fava beans, garbanzo, lentils, peas, wheat
- ✓ Spring (early March – late April) beans, chilies, corn, cotton, black-eyed peas, gourds, herbs, melons, squash, sunflower, tomato, tomatillo, watermelon
- ✓ Monsoon (July) beans, corn, black-eyed peas, melons, squash, sunflower, watermelon
- ✓ Fall (late September – mid-November) fava, garlic, garbanzo, greens, lentils, onions, peas, wheat

My Favorite Vegetable Seed/Plant Sources
Diamond JK Nursery, Sonoita, AZ Tel: (520) 455-9262 www.diamondjk.com
Native Seeds/SEARCH, Tucson, AZ Tel: (520) 622-5561 www.nativeseeds.org
Ronnigers Potato Farm, 1-(208)267-7938,
www.ronnigers.com

Seed Savers Exchange, Decorah, IA Tel: 1-(563) 382-5990 www.seedsavers.org
Seeds of Change, Santa Fe, NM Tel: 1-888-762-7333
www.seedsofchange.com

Cheri Melton, Master Gardener

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0-12-0, being the most common. Potassium is usually not needed in our desert soils. There are many fertilizers on the market which include other nutrients for plant growth. Higher priced fertilizers have some of these nutrients added, thus increasing the cost. Organic based fertilizers have lower plant nutrient levels and are released slowly. They do add organic matter and micro-nutrients to soils. They are more beneficial in this regard than commercial fertilizers. On the other hand commercial fertilizers add salts to our soils over time and may have to be leached out of the root zone with water. The higher cost and application rates needed of organic fertilizers for normal plant growth, when compared to bagged convention fertilizers, are very high. Like most things there are pros and cons to the use of either organic or commercial fertilizers!

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