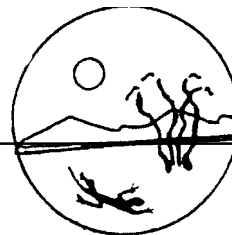


High on the Desert

Cochise County Master Gardener

Newsletter



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

Cheri's Favorite Annuals for 1999

Annuals are plants that germinate, grow, and set seed in one growing season. Annuals are wonderful additions to the garden and often are long blooming. Here are my favorite annuals in the garden this year:



Cosmos sulfurous a vivid orange flower, blooming continuously from summer until frost and is quite drought, heat and disease tolerant. This is the most visited plant for butterflies and bees in the garden. Seeds can be purchased in any

nursery garden shop. Will self-seed everywhere!

Savlia coccinea is a beautiful 1-2 ft shrub with scarlet tube-shaped flowers that attracts hummingbirds and sulfur butterflies. Cut spent flower stalks for repeated blooms. It prefers afternoon shade and slightly improved moist soils. They will enjoy being planted in the vegetable or herb garden. Often this plant can be purchased in four-inch pots or six-pack containers.

Zinnia angustifolia is a sweet spreading zinnia that comes in orange, gold, or white. The one-inch flowers cover the plant all summer long! They are exceptionally heat, drought and mildew tolerant which should make them a good candidate for containers. Dainty sulfur and Hair-streak butterflies love this flower. Spreading zinnia come in seeds or in four-inch pots.

Zinnia multiflora is an annual zinnia native to the Southwest. Compact 1-2 ft shrubs in deep,

dark musky red or a subdued, mellow orange make them a delight in the garden. I purchased my plants from Diamond JK Nursery. I am told the plants will re-seed in the garden.

Tithonia rotundifolia or Mexican tithonia is a wonderful six-foot plant with bright three-inch red and orange flowers with felty, intense green leaves. It is attractive to the Swallowtail butterfly family but I've counted five butterfly species on one flower alone! Watch the plants carefully to collect the ripe seeds for planting next year before the birds get to them first. Seeds can be purchased in any nursery garden shop.

Cheri Melton,
Master Gardener

► Now is the time to be thinking about planting your wildflower garden for spring bloom. See the back page of this newsletter for some helpful hints.

Cochise County Cooperative Extension

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

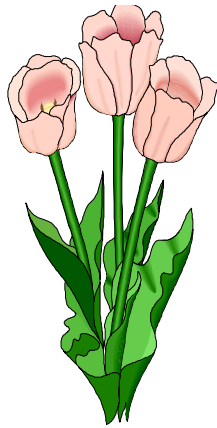
450 Haskell, Willcox, AZ 85643
(520) 384-3594

What to do . . . October

The coming of the first frost: The timing of the first frost is not necessarily tied to higher elevation. Both Willcox at 4,167 feet and Benson at 3,585 feet, may experience late October or early November frosts while Bisbee at 5,350 feet, may experience first frost two weeks later, even though it is at a much higher elevation. This is because colder air sinks, and if there is little air movement, the cold air becomes trapped in valleys and low areas of yards. Communities like Palominas are especially prone to October frosts. Of course, as with all attempts to predict weather, there are variations from year to year and sometimes from yard to yard. In mid-October, start paying closer attention to nighttime temperature and be ready to protect frost sensitive plants.

The hardest job of all: Most gardeners would rather eat shrink-wrapped lettuce than thin their tiny vegetable seedlings. Unfortunately, that is what we may end up doing. Without thinning, seedlings are often forced to battle each other for nutrients, water, and growing space. The result is weak, under-developed vegetables and disappointed gardeners. If you planted a winter vegetable garden, grit your teeth, steel-up your spine, and start thinning. Remove enough seedlings so that the remaining vegetables are the proper distance from one another. If you'd rather not thin, plant only one seed in each hole at planting. Your germination rate will be lower, but you will also not be faced with the "Gardener's Dilemma." Thinnings, by the way, make good salads!

Overseeding lawns: Warm season grasses such as Bermuda grass are entering a winter rest period. If you want to keep your lawn area green through winter, overseed this month with a cool season grass such as annual or perennial ryegrass. The cool season grass will flourish in the cooler temperatures and go dormant during the hot days of summer when the warm season grasses are at their peak.



Planting bulbs: Aim to have all of your spring and early summer blooming bulbs planted 4 to 6 weeks before the first hard frost. For most of us, the end of October marks the end of spring bulb planting.

Don't let your weeds go to seed: If you have let your weed vigilance relax a bit during the last month, go at them with a vengeance now. Bag, rather than compost, any weeds that already have seed heads.

Dividing perennials: Spring or early summer blooming perennials need to be divided every 2 to 4 years in the fall in order to keep them strong and blooming. (Late summer and early fall perennials should be divided in early spring.) A clumping perennial that is never divided often produces weak growth and is vulnerable to pests and diseases. Plus, dividing is a great way to get more plants without spending more money—every gardener's dream. Before dividing, prepare the hole where the

divided portion will be planted and don't let the roots dry out. To divide a clumping perennial (it's okay if it still has leaves as long as it is a spring or summer bloomer), cut around the plant's rootball with a shovel, then push the shovel underneath the rootball and lift the plant to pry the rootball loose from the soil. Insert two pitchforks or a small garden fork or knife in the center of the perennial and work them back and forth until the rootball begins to separate into two halves. You can often use your hands to divide smaller plants. Plant one half in its new location and return the other half to the original planting hole.

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



Thank you! Thank you!

Two exciting events this past month call for thanks to many!

The fall xeriscape tour of September 4 was a great success. There was an excellent turnout of approximately 150 - 175 people who toured the landscapes. Thank you especially to the docents and to the homeowners who worked hard at preparing their low-water-use landscapes for display, making the tour fun and educational.

On Saturday, September 11, the Cochise County Master Gardeners Association presented their second High Desert Garden Fair. Thanks to the City of Sierra Vista and David Gunkle, Library Director, for the use of the library facilities, vendors, speakers, and the public, it, too, was very successful!

TREE HUGGING

101

Anyone who has visited LA in a microwave (Phoenix) during the summertime, has learned very quickly just how important trees are in the arid southwest. As you use the T-shirt you were wearing or old gloves to open your car door without getting second degree burns to discover the interior of your car now resembles a turkey roaster (and you are the turkey); you bemoan the fact that our urban planners really don't understand the benefits of trees to the urban landscape. As human habitation sprawls across the desert, natural desert flora is displaced by an endless sea of asphalt, concrete, dark-colored landscape materials, and glass. One can feel the folly of our ways by taking a walk across a high desert grassland or in one of our special riparian areas and then comparing that to walking across an asphalt parking lot.

Even though it is as yet unfair to compare Sierra Vista to Phoenix, we seem determined to emulate the heat island effect of the valley of the sun. As I drive around town, I see a lot of new construction going on and most have decent landscaping on the periphery of the property. Little attention is given to putting trees throughout the vastness of their parking lots. And it is not just the business folk but also family housing. There are many homes here whose idea of landscaping it just to dump rock

willy-nilly over the land until their piece of Arizona looks more at home on the surface of the moon.



If trees are planted, more than likely they are trees inappropriate to the high desert. Add to that poor planting techniques and you can see the problem. Any fellow gardeners who have had the joy of digging a hole for a new tree in some of the quality soil that can be found around here, can appreciate that you don't want to have to keep redoing it. So how to avoid having to dig more holes than the moles do in your yard?

First off, select a tree that is appropriate for this climate. (WAKE UP DOROTHY; YOU AIN'T IN KANSAS ANYMORE!) There is a reason why you don't see weeping willows and Japanese maples growing wild across the Apacheria. Trees that will thrive here must be able to take intense sunlight, high temperatures in the summer, powerful windstorms, sudden hard early and late freezes, high soil alkalinity and excess salt in the ground water. Don't be wooed by the sweet images of the seed catalog sirens enticing you to select trees that are native to the East. Many of these trees are water guzzlers. A full grown weeping willow can use up to 1,000 gallons of water per week to stay vibrant. Most maples die a slow and painful death in the Arizona sun. Insects and soil fungus prevalent in the local area just love to feast on non-native trees.

Picking that appropriate tree is only half the battle; now you have to plant it. The more sweat equity you put into the project the more chance of success you will have. Good drainage is essential to tree health. You don't have to dig so deep that you can shake hands with someone in the People's Republic of China to assure drainage. Dig a hole about six inches deeper than the container that the tree came in and two to three times as wide. Fill the hole to the brim twice with water. On the second fill, the hole must drain at least two inches an hour. If not, you must dig deeper to break through the impermeable layer and take measures to assure good drainage such as adding gypsum or using "Alka-liche" or similar product. If you have a solid layer of caliche within 4 feet of the soil surface under the tee, you must punch 4-6 inch holes through the caliche and fill them with permeable soil. The number will vary with the size of the tree. Many a seemingly healthy tree has suddenly collapsed after a few years when the root zone was restricted by unseen caliche or the tree was over-watered and the tree drowned. There is a lot of debate about the appropriateness of soil amendments in the high desert. Native or adaptive trees definitely don't need any. Non-natives grown in light organic nursery mixes may do well to have some organic matter added to aid in establishment. Never, ever use more than one-third organic matter to the native soil or you can create a planting pot effect in the soil. And certainly don't replace the native soil if you can avoid it. Sooner or later your tree must adapt to the environment as the organic matter added at planting will disappear from the soil quickly.

(continued on next page)

Robert E. Call

Robert E. Call
Extension Agent, Horticulture

Carolyn Gruenhagen
Editor

Next, your new tree must be watered appropriately. New trees, whether native or not, must never be allowed to dry out. Drip lines must be placed so that the root balls remain moist. As the tree grows, the watered area must expand to at least the drip line of the tree. Don't give your tree daily spritzes! Water less often and more deeply when you do. I water established trees (non-native) once every two weeks during the summer and soak the root zone down to the depth of 4 feet (depending on number, size, and placement of drippers, that may mean all night). Native trees that have become established may only need water during times of prolonged drought. Remember a stressed tree is easy prey to succumb to insect and disease attack.

The Cooperative Extension and the local WaterWise office have lists of trees that do well here and can provide all the information you need to plant and water your selected trees appropriately. But remember after all the hard work, you'll have the pleasure of sitting in the shade of your healthy tree and watching the heat radiate off your neighbor's rockscape.

John Phillips
Master Gardener

The Agent's Observations

This column will diverge from the normal question answering format and instead feature information on one of the heroes of this Agent—Dr. Norman E. Borlaug, “Father of the Green

Revolution.” Dr. Borlaug was born on a small dairy farm in Northeast Iowa in 1914. He earned a Ph.D. in Plant Pathology from the University of Minnesota. After a brief stint in private industry, he began work at the International Wheat and Corn Improvement Center (CIMMYT) near Mexico City in 1944. His assigned task was to develop improved varieties of wheat, a crop he knew little about. He bred wheat and corn varieties that increased yields by two and three times when compared to other varieties. He also implemented the use of nitrogen-based fertilizers to dramatically increase plant growth. The new wheat varieties were introduced into India and Pakistan in 1963. These countries were at war and famine was common. Dr. Borlaug also introduced his plant materials and methods in Turkey, Malaysia, Burma, Indonesia, Afghanistan, Brazil, Paraguay, Kenya, Tunisia, and other countries with “wheat apostles.” These “apostles” were students that Borlaug had trained and thus multiplied his efforts.

In 1970, Dr. Borlaug was awarded the Nobel Peace Prize for his role in initiating the “Green Revolution.” At that time the Des Moines Register stated, “The Green Revolution is likely to affect more people in a short time than any other technological change in history.” Also, “Borlaug has made a greater contribution toward the end of hunger in the world than any other living man.”

Dr. Borlaug received the World Agriculture Award, September 13, 1999, at the National Association of County Agricultural Agents, held in Omaha, NE. I was privileged to attend these meetings.

I spoke with and shook hands with Dr. Borlaug. During his acceptance speech he spoke of the potato famine in Europe and Ireland during the 1840-60's which resulted in the immigration of millions to the Americas. More than 30 years later in 1895, Alfred Nobel died and left in his will provisions for the Nobel Prizes but did not mention agriculture. Dr. Borlaug tried to institute a Nobel Prize for Agriculture but was denied because Nobel did not leave provisions in his will for such a prize. However, the Nobel Prize for Economics was instituted in 1968! Dr. Borlaug commented that in a mere 30 years people had been starving but then a solution was found. Famine was forgotten by the survivors' children and grandchildren.

In the United States our society thinks that food is a given; that food will always be available and cheap. We fail to remember that food production is working with biological systems. Biological organisms can and do change because of the elasticity of DNA. Constant work is needed to maintain our safe, abundant, cheap food supply! Let us count ourselves lucky to live in a country and time when most of us are not hungry, but rather many are overweight. This is not the case worldwide. Dr. Norman Borlaug, at age 85, continues to travel the world trying to defeat hunger.

Robert E. Call
Extension Agent, Horticulture



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THE VIRTUAL GARDENER= Sustainable Landscape Design

Now that the weedy season is over and we have a little time to catch our breath, I thought it might be a good time to talk about a winter project—creating a landscape plan. Actually, I found a really great Web site on landscape planning from the Cooperative Extension of the University of Minnesota a few weeks ago and have been waiting for the opportunity to write about it. The URL is <http://www.sustland.umn.edu/>. Although landscaping advice from other regions of the country—especially ones so far away as Minnesota—is often not of much use to us here in the High Desert of Arizona, this planning guide is different. Because it deals with the process of planning rather than the specifics of what to plant, it is useful everywhere.

The focus of the guide is creating plans for **sustainable** urban landscapes.

According to the University of Minnesota planning guide, there are five considerations in designing a sustainable landscape. In order of importance, these are: Functionality, Maintainability, Environmental Soundness, Cost Effectiveness, and Visual Appeal. This order is backwards from the planning approach taken by many people, but as the authors of the planning guide explain, giving first priority to visual appeal and cost can only lead to problems later on.

Let's take a closer look at each of the planning considerations. Sustainable designs need to be **functional**. According to the planning guide, a functional landscape allows for the easy

accomplishment of movement, work, recreation and leisure that occurs in and around the landscape. For most of us, the area that occupies the space between the exterior walls of our home and the boundaries of our property must serve a multitude of functions. A space should be designated for each of these functions and the landscaping plan built to accommodate each of them. Some space might be given over to entertaining, other spaces to hobbies or play areas or storage. Our landscape planning must begin with the identification each of the functions we want the landscape to perform.

<http://www.sustland.umn.edu/>

The guide points out that functionality and **maintainability** are closely related. A functional design accommodates the needs of different users of the landscape while a maintainable design accommodates the needs of the landscape manager (a fancy term for you and me!), We should make sure our design makes life easier rather than more difficult for ourselves. In addition to minimizing labor, a maintainable landscape also reduces the need for inputs such as fertilizers, pesticides, equipment, and water. I think most of us would rather have a little time left over to enjoy our landscape than spend every waking minute taking care of it—not to mention that a lot of work is less likely to get done than a little.

An **environmentally sound** landscape design must first be functional and maintainable. In our region xeriscape designs are environmentally sound. Xeriscaping produces pleasing landscapes while reducing the need for water, providing habitat for native birds and animals, and minimizing the need for the use of environmentally unfriendly chemicals. Landscaping with native plants also saves effort because native plants are adapted to the climate and can thrive without a lot of human intervention.

A sustainable landscape should be **cost effective**. That doesn't necessarily mean inexpensive. What you should be interested in is getting the greatest benefit from the dollars and time invested in the landscape. Skimping on functionality, maintainability, or environmental soundness may be cheap initially, but it is not cost effective in the long run. What you

should be considering—to borrow a phrase from the military—is total life cycle cost. A cost effective landscape accomplishes the mission at a minimum total life cycle cost.

Of course we all want a **visually pleasing landscape**. Functionality, maintainability, environmental soundness, and cost effectiveness may be regarded by some as constraints that we have to take into consideration when developing our design. Others of us believe that true beauty results when form follows rather than leads function.

Next month we'll take another look at sustainable urban landscape planning. In the meantime, happy surfing.

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

ARIZONA COOPERATIVE EXTENSION
U.S. DEPARTMENT OF AGRICULTURE
Cochise County
450 S. Haskell Avenue
Willcox, AZ 85643-2790
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Wildflower Gardening

Here are some general guidelines offered by Barbara Mulford Franckowiak.

Since wildflowers do not transplant well, direct seeding is necessary. Also, the seeds need the soaking autumn and winter rains to germinate. So do your planning and planting by early winter.

Method: Select a spot in full sun, preferably free of perennial weeds. Slightly rake or lightly cultivate the ground. Adding a little compost improves upon nature, but too much may result in a leafy, non-flowering plant. Mixing the seed with a little sand or potting mix plus sand makes the seed distribution easier. Cover with 1/4 inch of soil. If there is a chance the seeds will be disturbed by wildlife, spread twigs, leaves, and/or chicken wire over the area. Water the newly planted seeds until the rains take over.

Cuttings 'N' Clippings

- ◆ If you can't sleep because a cricket has come calling, here is a sure cure. Put a wet washcloth in your kitchen or bathroom sink at night, and you'll find your noisy "neighbor" hiding there in the morning.
- ◆ If you are stung by a bee, apply a slice of onion to the spot and hold it there for a minute or two. It does the trick!

