

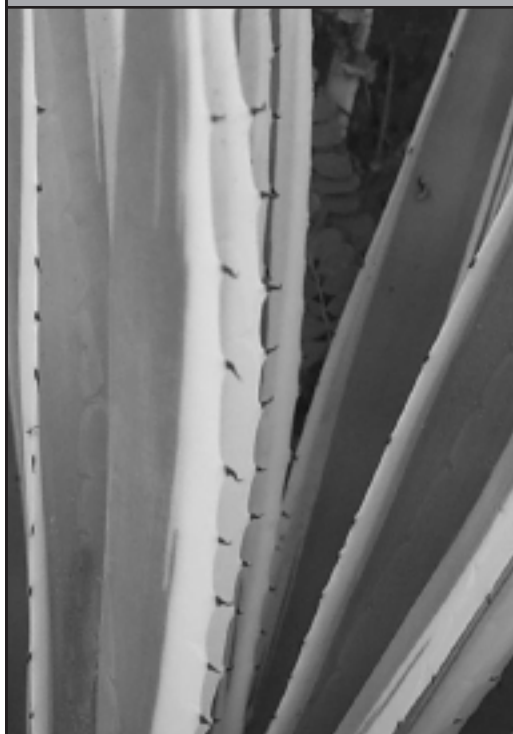
COOPERATIVE EXTENSION MARICOPA COUNTY

JOURNAL



HORTICULTURAL NEWS & RESEARCH

OCTOBER/NOVEMBER 2003



THE UNIVERSITY OF
ARIZONA®
COLLEGE OF AGRICULTURE
AND LIFE SCIENCES



INSIDE THIS ISSUE:

- 6 Ants: The Good, the Bad, and the Zany
- 8 Landscaping with Good Taste
- 12 Speaking of Spinach
- 18 Go Native with Xeriscape
- 20 Homing in on Jojoba
- 22 Of Friendships and Gardens



Master Gardener Journal

From Me to You: The Baker Endowment	3
Calendar of Events	4
Things to Expect & Do	5
Ants: The Good, the Bad, and the Zany	6
Better Landscape Design: Landscaping with Good Taste	8
Word Wise	11
A Bountiful Garden: Speaking of Spinach	12
Ask a Gardener: Beautiful Brittlebush • Computer Corner	15
Neophyte Nook: Invasive Plant Notes • Book Review	16
Harvest Time Puzzle	17
Earth-Friendly Gardening: Go Native with Xeriscape	18
Can You Identify This Plant?	19
Meet the Natives: Homing in on Jojoba	20
The Plant Vampires	21
Special Feature: Of Friendships & Gardens	22
Garden-Smart Tips	23

Maricopa County Master Gardeners: Cultivating Plants, People and Communities since 1980:

Master Gardener volunteers are trained by University of Arizona faculty and staff during a 17-week course. They provide educational leadership to the community with research-based horticulture knowledge. Volunteers promote efficient use of water, fertilizers, and pesticides, and preservation of our desert environment.

Editor: Candice Sherrill, candicesherrill@cox.net **Copy Editor:** Vicki Bundy, vicki2501@cox.net

Design/Layout: Donna Atwood, atwooddesign.com **Website:** Jo Cook, hemispheresinternet.com

The Master Gardener Journal, published 6 times a year by Maricopa County Master Gardeners, is printed on recycled paper under the direction of the Maricopa County Cooperative Extension Office, 4341 E. Broadway Rd., Phoenix, AZ 85040-8807. Phone 602-470-8086 Ext. 301. Fax 602-470-8092. Hours: 8 a.m.-5 p.m. weekdays.

Home page: <http://ag.arizona.edu/maricopa/garden/>

Subscriptions: Available to the public for \$18 for 6 issues. Rate for active Master Gardeners \$15 or free online at <http://ag.arizona.edu/maricopa/garden/html/pubs/mgjournal.htm>. Send name, mailing address, and a check payable to University of Arizona. Mail to: Maricopa County Cooperative Extension, ATTN: MG Journal Subscriptions, 4341 E. Broadway Rd., Phoenix, AZ 85040-8807.

Northwest Valley Satellite location: Property Owners & Residents Association (PORA) Office
13815 Camino del Sol Blvd., Sun City West, AZ 85375. Phone 623-546-1672. Hours: 9 a.m.-1 p.m. Monday-Friday.

East Valley Satellite location: East Mesa Multigenerational Center
7550 E. Adobe Rd., Mesa, AZ 85207. Phone 480-985-0338. Hours: 9 a.m.-noon, Mondays and Thursdays.

Northeast Valley Satellite location: Via Linda Senior Center
10440 E. Via Linda, Scottsdale, AZ 85258. Phone 480-312-5810. Hours: 9 a.m.-4 p.m., Tuesdays and Thursdays.

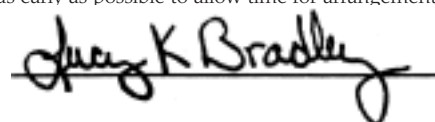
Urban Horticulture Staff: Lucy K. Bradley, Extension Agent, 602-470-8086 Ext. 323, BradleyL@ag.arizona.edu
Kelly Young, Program Coordinator, 602-470-8086 Ext.311, kyoung@ag.arizona.edu

Trade names given herein are supplied with the understanding that no discrimination is intended by the University of Arizona and no endorsement or criticism of similar products is implied.

Persons with a disability may request a reasonable accommodation, such as a sign language interpreter, at all events sponsored by the University of Arizona. Call 602-470-8086. Requests should be made as early as possible to allow time for arrangements.

Cover Photos: (clockwise from top left)

Agave, Lilies, and Cactus Blossoms by Candice Sherrill,
Cabbage courtesy of Publisher.



Lucy Bradley, Extension Agent, Urban Horticulture

The Baker Endowment: An Enduring Legacy

*by Lucy K. Bradley, Extension Agent,
Urban Horticulture*

For over 35 years, Jim and Collette Baker have helped bring beautiful gardens to the Valley of the Sun. Now, with the establishment of a new scholarship endowment in their name, that legacy will continue to blossom and bear fruit for years to come.

Mr. and Mrs. Baker have long been friends and generous supporters of Master Gardeners in Maricopa County. For donations of plants and material as well as financial help, Master Gardeners have always been able to turn to the Bakers. In honor of the Bakers' friendship and support, the Baker Master Gardener Endowment will provide scholarships for future Master Gardener Interns, as well as exciting opportunities for advanced training for existing Master Gardeners.

Master Gardener Update at Baker Nursery



The Baker Endowment was founded through generous gifts from Mr. and Mrs. Baker, from dozens of dedicated Master Gardeners, and from other organizations. Best of all, as an endowment every dollar donated becomes part of a permanent fund that will continue to provide benefits to Master Gardeners year after year.

Please join us all in thanking the founding donors to the Baker Endowment. And please consider joining them by making your own donation to the endowment. Your contribution will help to honor the Bakers, and make certain that the dedication and commitment of today's Master Gardeners will always be a part of our tomorrows.

Donations to the Endowment can be made by sending a check made out to "The University of Arizona Foundation" to: c/o Lucy Bradley, 4341 East Broadway Road, Phoenix, AZ 85040. Please be certain to write "Baker Scholarship" in the memo line.

FOUNDING DONORS:

Arcadia Garden Club, Arizona Wholesale Growers, Inc., Lee Ann Aronson, Judy Bates, Margery Bayless, Karen Berg, Copper Bittner, Lucy Bradley, Carol Brecker, George Chott, Sandy Cielaszyk, Cynthia Cox, Cathy Cromell, Desert Tree Farm, Sharon Dewey, Dorothy Dudgeon, John & Kim Eisenhower, James Ellner, Dick Gross, Tesfaye Gulilat, Linda Guy, Evan Hammond, Mike Hills, Linda Huff, Janet Jacobsen, Martin Johnson, Mavis Johnson, Tom Jones, Peggy Jukkala, Rick Kassel, Nancy Kinney, Joan McCarter, Susan Messerly, Don Nordlund, Diane Nowlin, Erin O'Dell, A. Gordon Olsen, Linda Overby, Barbara Parker, Rose Parker, Carol Peluso, Mary Pena, Phoenix Bonsai Society, Cynthia James Richman, Inese Santaromita, Fran Schott, Joan Schrempp, Joseph Sershen, Jo Ann Setliff, Deb Sparrow, Suzanne Stemnock, Charles Stephens, Marjorie Sykes, Marjorie Talbot, Amy Taylor, Valley of the Sun Gardeners, H. Bruce Vaughn, Ellen Scott Wait, Annette Weaver, Deborah Wolfe, Three Anonymous Donors. ■

*If you are planning for
one year, grow rice.*

*If you are planning for
twenty years, grow trees.*

*If you are planning for
centuries, grow men
and women.*

—Chinese Proverb

Calendar of Events

by Candice Sherrill, Master Gardener

OCTOBER 2003

10/1—Wednesday, 6:00 pm to 9:00 pm. **Container Gardening for Fall.** Master gardeners show secrets for growing a fabulous container garden. Learn the tricks of plant selection and enjoy beautiful year round color. Price: 20.00. Registration required. Cooperative Extension office, 4341 E. Broadway Road, Phoenix. Ainsley LaCour at ainsley@azorchids.com. (602) 470-8086. <http://ag.arizona.edu/maricopa/garden/>

10/2—Thursday, 6:30 pm to 9:00 pm. **Irrigation Maintenance.** Learn to troubleshoot and repair drip, sprinkler and bubbler systems. Price: Free; registration required. Southeast Regional Library at Greenfield and Guadalupe Roads in Gilbert, AZ. Lisa Hemphill at lisahem@ci.gilbert.az.us. (480) 503-6098. <http://www.ci.gilbert.az.us/water>.

10/4—Saturday, 9:00 am to 5:00 pm. **Fall Open House at the Arboretum at Flagstaff.** Crafts and activities, plus tours at 9:00, 11:00, 1:00, and 3:00. Free family event. (928) 774-1442

10/4 & 10/5—Saturday & Sunday. **Fall Plant Sale at Tucson Botanical Gardens.** Huge plant sale. Find drought-tolerant plants, including many natives. 2150 North Alvernon Way in Tucson. (520) 326-9686.

10/9—Thursday, 6:30 pm to 9:00 pm. **How Much Do I Water?** Learn simple techniques for efficient landscape watering and how to program your controller. Hands-on workshop using actual irrigation components. Price: Free. Registration required. Southeast Regional Library at Greenfield and

Guadalupe Roads in Gilbert, AZ. Lisa Hemphill at lisahem@ci.gilbert.az.us. (480) 503-6098. www.ci.gilbert.az.us.

10/11 & 10/12—Saturday & Sunday. **Fall Plant Sale at Tohono Chul Park.** Arid-climate plants, trees, shrubs and wildflowers at special prices. It's time to begin planting! 7366 N. Paseo del Norte in Tucson. (520) 742-6455.

10/12 thru 10/27—Daily, 8:00 am to 5:00 pm. **Fall Plant Sale at Boyce Thompson Arboretum.** Drought-tolerant plants for sale ranging from shrubs, vines, trees, cacti, and succulents. Horticulturists on hand to answer questions on weekend days. 37615 Hwy 60 in Superior. (520) 689-2723.

10/18—Saturday, 9:00 am to 1:00 pm. **Incredible Edible Fall Festival.** Farmers' Market, Entertainment, Healthy Eating Tips, Cooking Demonstrations, Food Vendors, Kid's Crafts & Games, Art Exhibit, Build a Garden To Go, G.A.I.N. (Getting Arizona Involved in Neighborhoods), Pie Eating Contest, Stuffin Muffin Contest, and MORE! Price: Free. Washington Adult Center, 2240 W. Citrus Way (23rd Ave. south of Glendale Ave). Marci or Judy at prlrecep@ci.phoenix.az.us. (602) 262-6971.

10/22—Wednesday, 6:30 pm to 9:00 pm. **Go Wild! Landscaping for Wildlife.** Create a colorful landscape with low-water use plants that will be a magnet for hummingbirds, butterflies, and songbirds. Price: Free. Registration required. Southeast Regional Library at Greenfield and Guadalupe Roads in



Gilbert, AZ. Lisa Hemphill at lisahem@ci.gilbert.az.us. (480) 503-6098. www.ci.gilbert.az.us.

10/25 & 10/26—Saturday & Sunday. **La Fiesta de los Chiles at Tucson Botanical Gardens.** Celebrate the chile pepper! Enjoy fabulous food, plus music, dancing, and crafts, all in a garden setting. 2150 North Alvernon Way in Tucson. (520) 326-9686.

10/29—Wednesday, 6:30 pm to 9:00 pm. **Plant Care Workshop.** Learn to grow and care for plants in the high heat, dry climate and difficult soils of the desert. Participants are encouraged to bring samples of plant problems from their yard. Price: Free. Registration required. Southeast Regional Library at Greenfield and Guadalupe Roads in Gilbert, AZ. Lisa Hemphill at lisahem@ci.gilbert.az.us. (480) 503-6098. <http://www.ci.gilbert.az.us/water>.

NOVEMBER 2003

11/1 thru 11/30—Sundays only, 9:00 am to 12:00 pm. **Roosevelt Neighborhood Farmer's Market.** Beaded jewelry, leather works, local honey, massage therapists, stained glass, baked goods, organic vegetables, yard ornaments and more! Price: Free. Portland Parkway, Portland Ave. (1 block N. of Roosevelt) between Central & 3rd Ave. Lucille Lipham at lucillelipham614@msn.com. (602) 252-0222.

11/8—Saturday, 10:00 am to 4:00 pm. **Folk Festival at Boyce Thompson Arboretum.** Live music. Singers and songwriters treat visitors to a variety of sounds, instruments, and styles. Look for the first red and gold leaves of fall

foliage and explore musical heritage as diverse as the season. 37615 Hwy 60 in Superior. (520) 689-2723.

11/8 & 11/9—Saturday & Sunday.
Annual Show and Sale presented by the Orchid Society of Arizona. This year's show theme is "ORCHID MARDI GRAS." Spectacular orchids in bloom. Plants, supplies, and gifts for sale, as well as FREE orchid culture information, educational displays, entertainment, and refreshments. Price: Free. Encanto Park Clubhouse, 2605 N. 15th Ave., Phoenix. Joe Bacik at bacikj@cox.net. (602) 363-1598. <http://welcome.to/orchidsocietyaz>.

11/29—Saturday, 11:00 am to 3:00 pm.
Fall Color Festival at Boyce Thompson Arboretum. Enjoy fall color, tangy Arizona apple cider, and live music. Arts and crafts for the kids, miles of nature trails, and beautiful picnic grounds. 37615 Hwy 60 in Superior. (520) 689-2723.

11/20 thru 12/15—Daily. **Holiday for the Park** at Tohono Chul Park. Artists who have shown their work in the Park's exhibits create and donate one-of-a-kind ornaments for this event. We invite you to purchase them! Funds help the Park fulfill its mission to educate the public about the Sonoran Desert and to celebrate the values, customs and beliefs of the peoples who dwell in the region. 7366 N. Paseo del Norte in Tucson. (520) 742-6455. ■

Things to Expect & Things to Do

by Terry H. Mikel, Extension Agent, Commercial Horticulture

GROWTH RECOVERY of summer-weary plants can be expected with the cooling nighttime temperatures.

PREMATURE LEAF DROP late in October is likely a result of the stresses of the summer.

ORANGES AND TANGERINES CAN SPLIT during this season as they enlarge in size. Earlier damage from the sun on the rind makes the rind less supple and less resilient to stretching as the fruits gain size.

MESOPHYLL COLLAPSE is a sudden wilt or drop of citrus leaves provoked by abrupt weather changes. Twig dieback and gumming often occur with this condition.

ALTERNARIA ROT may be found in blossom ends of Navels and occasionally tangelos. No chemical control is available.

FUNGUS DISEASE IN FREQUENTLY WATERED WINTER GRASS - Minimize watering frequency to slow succulent growth and promptly treat with recommended fungicides. This becomes worsened by periods of warm weather, causing even more soft, vulnerable growth.

PLANT WINTER-HARDY TREES, SHRUBS AND VINES. The frost sensitive ones (citrus, bougainvilleas, etc.) can be risky after October.

SOW WILDFLOWER SEED in October to have a spectacular show in late spring. Once tried, most people become addicted to the easy and natural color display.

PLANT ANNUAL SPRING COLOR in mid-to-late October. The nurseries will be packed with glorious selections in every size, color, and shape. Spend time preparing the soil for the explosive growth of the plants. Everything you do "up front" will show the most rewards. It's hard to overcome a poor start with flowers and vegetables.

CUT BACK WATERING FREQUENCIES. The shorter days mean cooling temperatures and slower plant growth, allow the soil to remain wetter longer.

OVERSEED ESTABLISHED BERMUDA GRASS LAWNS from mid-October through mid-November for green grass (and mowing practice!) all winter. If your lawn has suffered from the late spring and hot summer, it's best not to overseed this year to help it out.

BERMUDA RESPONDS with a light fall application of potassium, no matter whether you overseed or not. We rarely recommend potassium for plants here, but potassium for Bermuda helps it "rest" better and then come out of dormancy with improved vigor.

PLANT COOL SEASON VEGETABLES starting in October. The cool season vegetables are ones you eat the roots, stems, leaves or immature flowers. If planting these cool season vegetables is done and the days are still warm, you will find that sprinkling the seedbed with water will cool the soil more. Many of these seeds need cool temperatures to sprout.

ONIONS PLANTED FOR BULBS should be sown in mid-October (remember Grano 1015Y? The 1015 indicates the planting date). Seeds or seedlings work the best. If you want the best scallions, plant the onion sets. These grow quickly into luscious green onions, but rarely perform as well as seeds or seedlings for the later bulbs. The Grand Canyon Sweet™ variety works best here. ■

Ants: The Good, the Bad, and the Zany

by Sue Hakala, Master Gardener

A new ant colony begins when winged reproducing queens and males fly away from the colony where they were hatched to establish a new colony. This activity generally takes place on a warm sunny day following a rain, when temperature and humidity are right. Timing of the flight is specific to individual species, with some migrating as precisely as from 10 a.m. to 11 a.m. Migrating ants don't fly a great distance—maybe only 50 feet—attracted by specialized pheromones that call mates together.

The potential queen can mate several times, storing enough sperm packets within her body to last a lifetime. Males then either die or are eaten by predators. After mating the queen rubs off her wings and digs to get underground quickly to avoid predators. Out of 1,000 new queens, only two or three will survive to create a successful colony.

The new queen lays her eggs, and once they hatch she tends and cleans the young. She feeds them utilizing fat stored in her flight muscles. Once the first set of young goes through their complete metamorphosis from egg to larva to pupae to adult, the worker daughters take over and the queen begins to lay more eggs.

It is the job of worker ants to enlarge the nest, carrying the dirt to the surface in their jaws. Ant nests are generally 8 to 24 inches underground, but in hot desert climates they may go deeper to where the soil is cool. The mound serves to maintain the temperature of the nest. The higher the mound the more heat is brought into the nest. In

very hot weather other holes may be opened to let some of the heat out. Disturbing the mound with a careless foot quickly may change the temperature within the nest, jeopardizing the eggs. In cool weather ants may sunbathe at the entrance, then return to the nest to give out the heat stored in their bodies.



WHAT DO ANTS EAT?

Depending on the species, ants may eat sugars from plant juices, sweet liquids, protein from insects and animals, seeds, or fungus.

Leaf-cutting ants in Central and South America gather leaf bits and partially chew them to release nutrients. They then plant these leaf bits for fungus to grow on. Leaf-cutter ants get only 9 percent of their total nutritional needs from the fungus; the rest comes from the leaf sap collected while cutting the leaves. Any time toxic leaves find their way into the nest for the fungus, a chemical signal is emitted that alerts other ants to the danger and they then spread the word to stop gathering those leaves.

Some species of ants collect seeds. "Miller" ants, specialized ants with large heads and jaws, are needed to grind and remove seed coats. They hang out at the nest opening, and accept seeds for processing.

Other ants send out "scouts" that scurry around looking for a food source, mostly in the cool parts of the day. Any time they locate food that they aren't able to carry back to the mound themselves, they communicate this information to the others, and "soldier" ants

with larger, stronger jaws show up to assist by biting off pieces for other ants to carry. Then the familiar conga line forms, going to and from the nest. Ants can carry 50 times their own weight, which would be equivalent to a human being lifting an elephant.

Some ant species farm aphids. The ants tap the aphids with their antenna to let them know they would like some honeydew. The ants carry the "honey" back to the nest in their mouths and feed others. These ants will carry off aphid eggs and winter over with them to have a start on a new crop of aphids in the spring.

The western United States and Mexico are home to a species of ant that has specially adapted workers who store nectar within their bodies to feed the colony later. These ants sometimes swell with nectar until they are too large to leave the nest. When the weather gets very hot and the colony stays at home, it gets its nourishment from these living honey pots.



DO ANTS FIGHT?

Yes, like humans they fight and enslave their own kind. They raid other nests in their territory and are willing to fight to the death. Some species

maintain patrols at the edge of their territory that watch for intruders. A pheromone alarm summons others for defense. They surround the enemy, sting it with protein-digesting venom, squirt formic acid to paralyze it, and bite it with powerful jaws. If the battle isn't going well an alarm alerts the rest of the colony to take some eggs, larvae, and even the queen to a safer location.

Barnyard Trivia

by Jack Blake, Master Gardener

When ants swarm over human beings, they inject histamine that is irritating and causes us to itch.

Ant enemies include insects, spiders, birds, and mammals, as well as man. Small mites live on some ants, stealing food from them as it is passed to other ants. Invading flies will sometimes trick worker ants with chemical scents that allow entry to the colony so they can lay eggs on the queen. The newborn flies kill the queen, and then are cared for by the workers.

Slave-maker ants have large, strong mandibles that are great for fighting, but are too big to allow them to feed themselves. They raid nearby colonies, taking larvae and pupae to rear. When grown, these captives will fill the needs of the slave-maker ants.



HOW DO ANTS FIND THEIR WAY HOME?

Most ants forage close to home. They don't rely on pheromone trails, since the trails don't last very long. Instead, they use multi-faceted eyes to see landmarks or the sun's position. Ants use regular foraging paths that they keep free of obstructions and return to places where they have found food before.

Ants are useful in creating a stable ecosystem.

SO WHAT GOOD ARE ANTS?

They eat pests harmful to crops and orchards. They destroy garden pests, killing small larvae and culling aphids before they can destroy the plant they are on. Ants kill 40 percent of newly

hatched plant-feeding bugs and 30 percent of flies, making them more effective than some pesticides. One species of ants destroys up to 12,000 larvae a day!

Ants also pollinate while feeding on nectar, and their tunnels allow air to circulate in the ground, which is beneficial to the soil and plant roots. They are useful in creating a stable ecosystem.

Some ants do particularly strange things. "Rafting" ants (very small red ones) swarm from their mound in my yard at sunset every day, and during the next few hours they join together in a low birdbath in perfectly round quarter-size groupings. They float there until morning, when I dump them out and refill the bowl. I can't tell what they're doing other than just hanging out and trying to keep cool on a hot desert night. Not a bad idea, really. ■

- Cows have 4 stomachs and can hold up to 35 gallons of liquid.
- A cow can give 100 quarts of milk a week.
- A cow spends an average of 18 hours a day chewing.
- Cows can be identified by nose prints.
- On a day with a light wind, a cow can smell odors up to 6 miles away.
- There are more chickens than people in the world.
- The average American will eat 286 eggs per year.
- The turkey is widely regarded as the dumbest domesticated animal.
- An average American will eat 350 cows, 310 hogs, and 225 lambs in a lifetime.
- At 10 days old, a chick embryo is about 1 1/2 inches long and its feathers are already starting to grow.
- Chickens usually have 4 toes, but some breeds have 5.
- An egg is graded according to the quality of its shell, yolk, and white.
- A horse usually has 3 heartbeats for every 1 breath.
- As a horse matures, its legs grow more slowly than the rest of its body.
- Pigs are one of the few creatures beside humans capable of suffering sunburn.
- Pigs can run a 7 1/2 -minute mile.
- Ducks can swim while sleeping.
- The horse was first domesticated 5000-6000 years ago, in the region of the Black and Caspian Seas.

Okay, that's enough horsing around for now.

Landscaping With Good Taste

by Sandy Turico, Master Gardener

It has been said that nothing beats the taste of vegetables and herbs freshly harvested from the backyard garden. Considering the fact that consuming produce (preferably organically grown) is an excellent way to ensure good health, why would any enthusiastic gardener not want to include some delectable delicacies in their landscape? You might think you don't have the time or the space. Think again...per-

haps it's time to add some edibles to your landscape!

Determine the type and amount of produce you will consume, and how much time you can give to this endeavor. Even a minimum of space and effort can yield some tasty morsels for the dinner table. Will you be able to devote only an hour or two to the garden on the weekends, or can you schedule gardening chores on a more regular basis? A culinary garden can be as small as a single container or as



Photography: Candice Sherrill

large as the space you have available to you. Regardless of the amount of room you want to allocate to your food garden, it is important to integrate the edible plantings into your landscape in an attractive and practical manner.

FINDING THE RIGHT SPACE

The first step in designing your garden patch should be to evaluate your home site. Vegetables and herbs require 6 to 10 hours of full sun daily. Sunlight patterns change with the seasons, and since we are fortunate to have two different growing seasons in our region it very important to figure out where your edible plants will receive optimal sunlight during each season. Afternoon shade during our intensely hot summer months is also an important consideration.

Locating your garden plants close to trees or shrubs will result in competition for water, nutrients and sunlight. An ideal location for interplanting vegetables and herbs would be among annuals and perennials with similar watering requirements.

Unlike the desert trees and shrubs in your landscape, your edible plantings



will need frequent irrigations in order to thrive and bear fruit. Take into account the access you have to a water source. This will make your irrigation chores simpler. Using a drip system or soaker hoses are efficient methods to provide the water your edible plants will need. A level planting area with good drainage is another requirement for healthy vegetables and herbs. Waterlogged soil is an invitation to disease and rotting roots.

Locating your food garden close to your house is a practical idea, making it easy to get your veggies from the garden to the table in a minimum amount of time. A spot that provides good air circulation as well as protection from high winds will also aid in keeping your plants healthy.

LAYING OUT YOUR EDIBLE GARDEN SPACE

We're all familiar with the traditional vegetable garden planted in long rows, certainly an acceptable option if you have the room. But there are many other options to consider, no matter how much space you have, that can add charm to your landscape.

If you need to keep your garden in one designated area, contemplate a unique design that will complement the rest of your landscape. A garden plot in a circular, oval or freeform shape with well-placed paths for easy accessibility can become a highlight in the landscape.

If you don't want or need to limit your planting area to a single plot, think about interplanting your edible plants among the rest of your landscape. As long as you position groups of plants

with similar light and water needs, they need not be confined to a solitary location. Think about blending vegetables and herbs with annual and perennial flowers in various planting beds throughout the landscape.

Containers such as pots, barrels, or even an old wheelbarrow can be a perfect way to raise vegetables and herbs. Make sure the vessels are at least 5 gallons or larger, and that they have drainage holes. Bushy or dwarf varieties are a good choice, and more than one variety of food crop can be grown in one pot if it is large enough. Arrange complimentary containers in various sizes for a striking addition to your patio or landscape. An added bonus to container gardening is the ability to move them around to take advantage of sun and shade as the seasons change.

Raised beds are ideal for your backyard garden patch for a number of reasons. With this method, the soil is built up 12 to 18 inches above ground level. Gardening tasks are physically easier to deal with, the soil mix is better controlled, and drainage is less of a problem. Limit the size of the raised bed to 3-4 feet in width in order to maintain the bed without having to walk over it. Frame your raised beds with bricks, landscape blocks, wood planks (not chemically treated) or whatever your imagination conjures up to keep chores more manageable.

Plant UP! Think about vertical gardening to make the most of the space you have. Besides the time-honored trellis,

a fence, landscape tower, wooden stepladder or netting strung between two stakes can save valuable space. Try pole beans, cucumbers, peas or other vining plants for your vertical garden.

Take the time to plan your edible garden on graph paper. Sketching your design to scale will enable you to make certain that the spacing of plants is correct as well as help you to visualize the garden layout in relationship to the rest of your landscape.

Space plants fairly close together to shade the soil and help prevent weed growth. Be sure to position taller plants on the north side of your gardening area so shorter specimens receive sufficient sun.

Research the fertilizer needs of the vegetables and herbs you raise. Grouping the light, medium and heavy feeders together will result in healthier plants and simplify maintenance.

SOIL PREPARATION

Soil preparation should be a top priority regardless of where you choose to raise your edible plants. Our alkaline desert soil has little organic material. So adding amendments will improve the soil structure, enhance drainage and enrich the soil. If using containers or raised beds, getting the right soil mix is simply a matter of adding the correct combination of soil and amendments to fill the container or build up the bed.

When planting directly in our native soil, the ground will need to be loosened. Organic matter such as compost, mulch or aged manure should be added along with nitrogen and phosphorus. A supplement of soil sulfur or

gypsum will lessen salt buildup. If planting in containers, do not use native soil directly from your home site especially if it is composed mainly of clay. Instead, buy or blend your own lightweight soil mix that will allow roots to absorb enough air and water. Detailed directions on preparing garden plots and containers can be found in "Desert Gardening for Beginners" published by the Arizona Master Gardener Press.

This groundwork needs to be repeated before every planting season. The time and effort you spend getting your garden area ready for planting will pay off at harvest time, so don't skimp on your prep work.

WARM AND COOL SEASON VEGETABLES

Avid gardeners in Maricopa County will appreciate the fact that they can raise vegetables and herbs during two separate growing seasons. While there are numerous annual and perennial herbs, vegetables (with the exception of asparagus and artichokes) are grown on an annual basis. Vegetables that thrive in the warmer temperatures present from spring through fall are

beans, cucumbers, cantaloupe, peppers, pumpkins, sweet potatoes, and tomatoes. Cool-season crops that do well from fall through spring are beets, broccoli, carrots, lettuce, peas, and radishes.

COMPANION PLANTING

Plants have many properties that affect the environment around them.

Although plant life may compete for water and nutrients or even release toxins fatal to other vegetation, some plants flourish when they are grown near other specific plants. Vegetables and herbs can deter harmful pests, attract beneficial insects, add nutrients to the soil, enhance flavors, and shade smaller plants. For example, mints and lavender are natural insect repellents. Basil can be planted with tomatoes to improve growth and flavor. Beans and peas, which are legumes, enrich the soil with nitrogen. Many beneficial combinations have a basis in scientific fact, while others just can't be explained. Man has been observing the principles of companion planting for thousands of years; putting a few to work in your garden will help it thrive.



TIPS

Once you decide which edibles you would like to have in your landscape, do some research. Find out the best planting times, mature plant sizes, and number of days until a crop will mature.

Determine whether it is best to raise plants from seeds or transplants. If you choose transplants, water them several hours before planting, and plant late in the afternoon, early evening or on a cloudy day to reduce shock to the transplant.

To prevent insect and disease problems, rotate your vegetable crops. Don't plant vegetables from the same plant family in the identical spot more than once in a three-year period. For example, tomatoes, peppers and eggplant all belong to the "Solanaceae" family; once a growing season has ended a crop from a different plant family should be planted in its place and vegetables from the Solanaceae family rotated to other areas of the landscape.

CHOOSE VARIETIES THAT ARE RESISTANT TO PESTS AND DISEASE.

Take into account the color and texture of the annuals, perennials and other plants in your landscape. Repeat colors and textures and vary heights to achieve a pleasing display. Planting in



Photography: Publisher

odd-numbered clusters (3, 5, 7, etc.) will produce a satisfying balance in your landscape.

Put aside the chemicals and go organic if possible; fertilizers such as compost, manure, cottonseed meal, fish emulsion, and bone meal are less likely to burn plants. Natural pest controls are safer for your family and protect the environment.

Take care not to overwater or overfertilize herbs. Generally, they do not require as much water or nutrients as vegetables.

Plant aromatic herbs like lavender, rosemary and sage near patios, entries and patio areas where their fragrance can be appreciated.

If limited to a small space, keep your garden design simple.

Consider growing native crops such as fava or tepary beans, cilantro, chile peppers, or tomatillos that thrive in our desert environment.

Growing vegetables and herbs is a healthy, wholesome activity for the whole family. Your children, grandchildren or the neighbor's kids will get a thrill from planting and harvesting their own veggies, and will likely be more willing to try out a variety of foods they've actually helped raise.

There is a wealth of information concerning edible gardening available from your county extension office, the Internet, and books and magazines geared exclusively for our Southwest desert climate. Take advantage of classes sponsored by various municipalities and nurseries. Consider your vegetable and herb garden a work in progress; realize that success will be a matter of trial and error. Above all... enjoy reaping the rewards of your harvest! ■

Word Wise

Definitions for terms used in this issue...

annual (Good Taste p.8)—a plant that germinates, flowers, sets seed, and dies in the same year; as opposed to a biennial or perennial plant.

aphids (Ants p.6)—small, soft-bodied insects of the family Aphididae with mouthparts adapted for piercing and feed by sucking sap from plants.

bolt (Spinach p.12)—to produce flowers and seeds prematurely.

bulbils (Identify p.19)—small bulbs or bulblike structures in place of flowers, or in a leaf axil.

chlorosis (Vampires p.21)—lacking chlorophyll; the yellowing or whitening of normally green plant tissue because of a decreased amount of chlorophyll, often as a result of disease or nutrient deficiency.

ecosystem (Ants p.6)—a community of organisms and its environment functioning as an ecological unit

forage (Ants p.6)—to wander in search of food or provisions.

formic acid (Ants p.6)—a fuming liquid acid found in ants and some plants that induces blisters. Used commercially in textile dyeing and finishing.

habitat (Vampires p.21)—the area or environment where an organism or ecological community normally lives or occurs, as in a desert habitat.

histamine (Ants p.6)—a tissue compound released during an allergic reaction that causes dilation of capillaries, contraction of smooth muscle, and stimulation of gastric acid secretion.

honeydew (Ants p.6)—an excretion from insects such as aphids, mealybugs, whiteflies, and soft scales, consisting of modified plant sap.

host plant (Vampires p.21)—a plant that a parasitic plant or animal lives on.

leaf curl (Vampires p.21)—a plant disease caused by a fungus (genus *Taphrina*) or virus (especially genus *Begomovirus* of the family Geminiviridae), characterized by curling of leaves

mandibles (Ants p.6)—the forward-most pair of mouthparts of an insect.

metamorphosis (Ants p.6)—the change in form that takes place as insects grow from immature stage to adult.

offsets (Identify p.19)—a shoot that develops laterally at the base of a plant, often rooting to form a new plant.

organically grown (Good Taste p.8)—grown without the use of synthetic fertilizers or pesticides.

panicle (Identify p.19)—a loose, irregularly branched inflorescence with stalked individual flowers

perennial (Good Taste p.8)—a plant that lives 3 or more years

pheromones (Ants p.6)—substances secreted by organisms to affect the behavior or development of other members of the same species.

rosette (Identify p.19)—a cluster of spreading or radiating basal leaves

soil structure (Good Taste p.8)—the manner in which soil particles are aggregated or grouped together. The structure of surface soils is generally either granular or sandy. The four types of subsurface aggregates are: platy, blocky, prismatic, or massive. Good structure allows rapid movement of air and water through soil.

swales (Go Native p.18)—low tracts of land, especially where moist or marshy; shallow trough-like depressions that carry water mainly during rainstorms or snowmelts.

symmetrical (Identify p.19)—a exhibiting symmetry; evenly shaped as opposed to irregularly shaped; having balanced proportions; having the organs or parts of one side corresponding with those of the other

tibia (Vampires p.21)—shinbone; the inner bone of the human leg between the knee and the ankle; the corresponding leg segment in insects.

Speaking of Spinach

by Linda Trujillo, Master Gardener

BOTANICAL NAME

Spinacia oleracea (Spinacia comes from the Latin word for spine, and oleracea means edible plant).

COMMON NAMES

Spinach (English), épinard (French), spinat (German), spinace (Italian), espinaca (Spanish), and hispane (Arabic).

ORIGIN, HISTORY & FOLKLORE

The actual origin of this widely grown potherb is unknown, but we do know that it was cultivated in Iran more than 2,000 years ago. In fact, the word "spinach" is derived from the Persian word for "green hand." Spinach was introduced to China in the 600s and to Spain in the 1100s. By the 1200s, the prickly seeded varieties were known in Germany. Spinach has been grown in Europe since the 1400s and came with the first settlers to America. The first description of a smooth-seeded variety was recorded in 1552. By 1806, spinach was listed in American seed catalogs.

DESCRIPTION

Spinach is a hardy, cool weather member of the Chenopodiaceae (Goosefoot) family. Spinach has a deep taproot and a shallow yet extensive branching root system, with most of its feeder roots in the top few inches of the soil.

The plant produces a rosette of fleshy,

non-hairy leaves that tend to be broad and tender. There are two basic leaf types: 1) smooth or flat and 2) crinkled or savoy. Hybrid varieties now offer a semi-savoy type, which has a smoother, less crinkled leaf texture. Leaf shapes include round, oval, arrow-shaped, or triangular; borne on edible stems ranging from 1 to 6 inches long.

Spinach is considered to be dioecious, which means that male and female flowers appear on separate, unisexual

seeds tend to produce savoy leaves.

HOW TO GROW

Spinach can be planted from mid-September through the end of February. It tolerates partial shade, but grows best in full sun. The optimum daytime growing temperature ranges between 50 and 60 degrees Fahrenheit.

Spinach does well in a variety of soil textures, but prefers fertile, well-drained soil with a pH of 6.0 to 7.5.

Prior to planting, prepare the bed by enriching it with organic matter and turning it to loosen to a depth of 18 inches. Be sure to deeply water the bed prior to planting, since adequate moisture is essential to quick germination, and overhead watering can lead to seedling diseases.

Some experts suggest chilling seeds for 1-2 weeks prior to sowing, since germination is often slower in warm soils. Sow seeds 2 inches apart, 1/2 inch deep, and thin seedlings to 4 to 6 inches apart. If you plant in

rows, space them at least 12 inches apart. If you practice intensive gardening methods, thin seedlings to 6 inches apart in all directions. For square-foot gardening, Mel Bartholomew recommends 9 plants per square foot.

I prefer to space the plants at least 6 inches apart because overcrowding can lead to stunted growth and premature bolting. Lack of ample growing space also increases the plant's susceptibility to disease and pests.



plants. However, according to Taylor's Guide to Heirloom Vegetables by Benjamin Watson, the heirloom variety Bloomsdale Longstanding "was bred from a single monoecious plant."

Greenish-white, inconspicuous flowers appear in clusters along the seed stalk, which can reach several feet in height. Flowers are wind pollinated.

There are two types of seeds: round and prickly. Seed type can be an indicator of leaf type. Prickly seeds typically produce smooth leaves, while smooth



Soil temperatures for germination range between 45 and 75 degrees Fahrenheit. Germination usually takes place in 7 to 10 days. Once the seedlings have emerged, water plants deeply and regularly at ground level to provide uniform moisture and keep the foliage dry. Wet foliage can create a favorable environment for pests and disease.

While all gardeners agree that spinach is a heavy feeder, few agree on when and how often to apply nitrogen fertilizer. Spinach can be sensitive to fertilizer burn and its root zone is relatively shallow, so I carefully side-dress my plants with a complete fertilizer every 4-6 weeks to keep the plants healthy and the leaves dark green and growing.

Spinach can be grown successfully in containers. Be sure to choose plant varieties suited to container gardening and use containers with ample root zone room and good drainage.

VARIETIES AND SEED SOURCES

For best results, select varieties that are resistant to disease and have the leaf texture you prefer.

I usually plant several varieties throughout the long growing season. My current favorite is America, a savoy variety with a thin, medium- to dark-green, arrow-shaped leaf. Originally introduced in 1952, this variety is

extremely productive and relatively slow to bolt. The leaves have a wonderful sweet and peppery flavor, which remains even after steaming. It also stores and freezes well.

Bloomsdale Longstanding (savoy) and Indian Summer (semi-savoy) are two of my all-time favorites. Correnta (smooth) is a recent addition to my growing list because it is extraordinarily slow to bolt, which makes it a natural for late season planting. Its thick, roundish, dark green leaves are tender and sweet.

My preferred seed sources include Seeds of Change and Botanical Interest.

PESTS AND DISEASES

Fungal leaf diseases can appear if the weather is wet or humid. Downy mildew produces yellow spots on the topside of leaves and mold on the underside. The symptoms for cucumber mosaic virus include yellow leaves and stunted growth.

Aphids, nematodes, wireworms, cabbage loopers and other caterpillars can sometimes cause problems. If you spot the telltale sign of leafminers, chances are it's the larvae of a tiny black fly with yellow markings. Remove and destroy all affected leaves to interrupt the fly's life cycle.

Another possible pest is the spotted cucumber beetle, which is about 1/4 inch long with a black head and spotted, yellow body. The larvae are about 1/2 inch long and black at both ends. The larvae feed underground and the adults feed aboveground. This pest is a

vector for bacterial wilt and mosaic virus.

WHEN TO HARVEST AND HOW TO STORE

Spinach matures in 30 to 50 days, and is tastiest when picked young and sweet. Begin harvesting when the rosette has six or more leaves at least three inches long. To harvest a few leaves for use fresh, pinch off the outer leaves about an inch above the base of the plant.

For larger quantities, you may need to harvest the entire plant. Take a sharp knife in one hand and grab hold of the plant with the other and cut a swath through all the leaves about an inch above the base of the plant. This method is sometimes called "cut-and-come-again," because the plant will put out another set of leaves. When harvesting the entire plant, root and all, you may want to have a bucket of water nearby so you can dunk it in and remove any large amounts of dirt.

My standard short-term storage practice is to wash the leaves, shake of the excess water and lay them somewhat overlapping on a strip of paper towel. I then tightly roll up the spinach in the paper towel, place it in a freezer bag and put it in the vegetable drawer of my refrigerator. I've found that it usually keeps for a week or two.

My long-term storage practice is to wilt the washed spinach leaves in a dry pan for a minute or two and then transfer them to portion size freezer bags. I squeeze out as much air as possible, seal the bag and place in the freezer.

SEED SAVING

According to Susan Ashworth, spinach

seeds retain a 50 percent germination rate for 5 years when stored under ideal conditions. Seed saving for home gardeners is a difficult process, so please consult her book *Seed to Seed* for detailed instructions.

USES

Spinach is absolutely wonderful when freshly picked and eaten raw or quickly steamed. It can also be dried, crushed and used similar to other dried herbs.

NUTRITIONAL VALUE

Spinach has twice as much iron, calcium, potassium and protein as other leafy greens. It is an excellent source of the antioxidants vitamins A and C, as well as the B vitamins thiamin, niacin and folic acid. It also contains the carotenoids lutein and zeaxanthin.

HEALTH BENEFITS & CONCERNS

Spinach contains oxalic acid, which can interfere with the absorption of calcium and magnesium. In addition, if grown with large amounts of ammonia fertilizers, nitrate concentrations may reach near-toxic level.

References:

Ashworth, Suzanne. *Seed to Seed*. ISBN 0-9613977-7-2 (pp. 76-78).

Sunset Garden Pests & Diseases. ISBN 0-376-03302-9

UC IPM Pest Management Guidelines: Spinach is available online at <http://axp.ipm.ucdavis.edu/PDF/PMG/pmgspinach.pdf> ■

SPINACH RECIPES

SPINACH SALAD WITH VINAGRETTE

- 6 cups fresh spinach leaves, washed and patted dry
- 4 slices bacon, cooked, drained and crumbled
- 1/2 cup white mushrooms, sliced
- 1/4 cup sliced green onion
- 2 tablespoons olive oil
- 2 tablespoons balsamic or red wine vinegar
- Salt to taste
- Coarse-ground black pepper to taste
- Parmesan cheese, grated
- 1 or 2 eggs, hard-boiled and sliced



Remove stems from spinach leaves and tear into bite-sized pieces. Place in a large bowl, along with bacon, mushrooms, and green onions. In a small bowl, combine olive oil, balsamic or red wine vinegar, salt, and pepper. Pour over spinach leaves and toss to coat. Sprinkle with grated Parmesan cheese and garnish with hard-boiled egg slices. Makes 4 servings.

SPINACH STIR-FRY WITH TOASTED SESAME SEED

- 6 cups fresh baby spinach leaves, washed and patted dry
- 2 tablespoons peanut or other oil
- 2 tablespoons soy sauce
- 1 tablespoon lemon juice
- 1 small clove garlic, minced
- 3 tablespoons toasted sesame seed
- Coarse-ground black pepper to taste

Remove stems from spinach leaves and tear or cut into bite-sized pieces. In a small bowl, combine soy sauce, lemon juice, and minced garlic. Heat peanut or other oil in a wok or a large frying pan over high heat. Add spinach. Working quickly, use a wooden spoon or spatula to turn and cook 1-2 minutes until leaves are tender. Remove from heat and add sauce, toasted sesame seeds, and pepper. Toss gently with wooden spoon or fork to blend, and serve immediately. Makes 4 servings.

COOKING CONVERSIONS: One pound of raw spinach yields approximately 1 cup cooked. For each salad serving or cooked side dish serving, plan on starting with 1-1 1/2 cups raw.

Beautiful Brittlebush

by Judy Curtis, Master Gardener

Question: The brittlebush in my yard is beautiful in the early spring but during the summer it looks scraggly. Some have died, even with regular water. What is the problem?

Brittlebush (*Encelia farinosa*) is one of the toughest natives we have. In the wild it grows on the driest flats, and anchors itself in crevices of rocks. It will do best in your landscape if you respect the natural adaptations it has developed with its arid habitat.

Brittlebush produces two kinds of leaves. The larger, fleshier winter foliage supports the bloom period. Later on, smaller leaves covered with fine white hairs appear. They reflect up to 70 percent of the sunlight, and slow the rate of photosynthesis during hot weather. The lower stems are semi-succulent and hold water to help the plant survive the heat. The seasonal changes you observe in its appearance are a natural response to the environment. Too much



water in the summer can interfere with the plant's cycle and it may become leggy or die.

For best results in your garden you should water only occasionally to supplement natural rainfall, perhaps monthly in summer, less in winter.

Dried flower stalks can be left or cut off after blooming. Prune stems back to new growth in the fall. When pruning wear old clothes, because the sap is extremely difficult to remove. A face-mask and gloves are a good idea because some people have skin and allergy reactions.

While brittlebush is a perennial, it is not a long-lived one. It produces a lot of seed, which germinates easily. Let some of the new plants survive to replace older ones, and the plant can be a satisfying and lovely addition to your landscape. ■



Photography: Candice Sherrill

Computer Corner

by Candice Sherrill,
Master Gardener

CREATE YOUR OWN BOULDERS

Visit this site to find out how to construct and finish realistic-looking landscape rocks and boulders such as those found in many commercial landscape installations. Directions are shown for making lightweight rocks and boulders out of A/B foam, and finishing them in a variety of ways to mock nature's own. You can even install hidden lights inside these faux creations! <http://pages.prodigy.net/airs/rocks/making.htm>



GARDEN PESTS

Here's a website dedicated to garden pests. Complete with line drawings, it provides descriptions of each life stage from egg to adult. It also gives visitors important biological information about each insect, and suggestions for control. You can even learn what plants the pest attacks, and what the damage looks like. www.eap.mcgill.ca/publications/eap59.htm

ARIZONA FACTS

This is the website of the Arizona State Library, Archives and Public Records. Not only is it a good place to find out what the state bird, butterfly, colors, flag, flower, fossil, gemstone, neckwear and tree are, but you will also find articles on interesting topics such as the story behind Supima cotton. <http://www.lib.az.us/links/arizona.htm> ■

Invasive Plant Notes

by Mike Mekelburg, Master Gardener

Biologist Curt McCasland of Cabeza Prieta National Wildlife Refuge near Ajo, Arizona, is a walking infomercial against invasive plants of the Sonoran Desert. Two of his favorite targets are fountain grass (*Pennisetum setaceum*) and buffelgrass (*Pennisetum ciliare*).

Fountain grass is an ornamental often used in residential landscapes. Native to Africa and the Middle East, it produces many fluffy seeds on a long seed stalk. Seeds are dispersed by wind, water, wildlife, and vehicles, and can easily establish in the smallest places such as cracks in streets and sidewalks, and on rocky slopes. In a few short years they can choke out native species and become a fire hazard that "pull" a fire through an otherwise fire-resistant desert.

Buffelgrass was introduced into the southwest as a pasture grass in the

early 1900s. Like fountain grass, its seeds spread easily and it is now common along roadsides, in parking lots, and in native desert areas. It is considered one of the most seriously invasive plants of the Sonoran Desert.

How can the average homeowner help? First, don't buy these plants at nurseries or yard sales. If they are already in or around your yard, pull the plants up before they develop seed stalks. For larger specimens, a few hefty blows with a pick to the base of the plant should be effective. Resprouting can occur for several years, so keep an eye out for new volunteers.

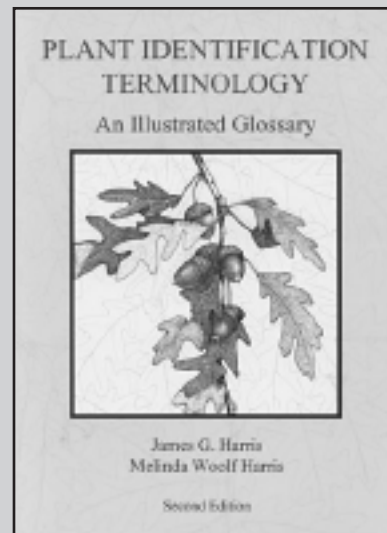
McCasland has compiled a short list of substitute plants with similar textures. These include several species of Muhlenbergia, bear grass and desert spoon (*Nolina* and *Dasylirion* spp). There is also a purple variety of fountain grass that is believed to be sterile.



Photography: Candice Sherrill

Book Review

by Candice Sherrill,
Master Gardener



Plant Identification Terminology: An Illustrated Glossary

James G. Harris and
Melinda Woolf Harris
Spring Lake Publishing,
second edition, 2001
Paperback, 206 pages,
\$18.95 at Amazon Books

Here's a volume gardeners are sure to appreciate: a comprehensive listing of plant parts and botanical definitions, complete with line drawings.

Originally written as a companion to a botany textbook, *Plant Identification Terminology* defines over 2700 terms, and provides more than 1900 line drawings to help clarify descriptive passages.

This book is divided into two useful parts. Part One is a basic alphabetical glossary for those who are seeking a definition for a known term or phrase. Part Two groups the same terminology into categories such as Roots, Stems, Leaves, etc. The authors have also thoughtfully provided a few convenient keys to help less-than-knowledgeable readers zero in on the correct term. ■

Harvest Time Puzzle

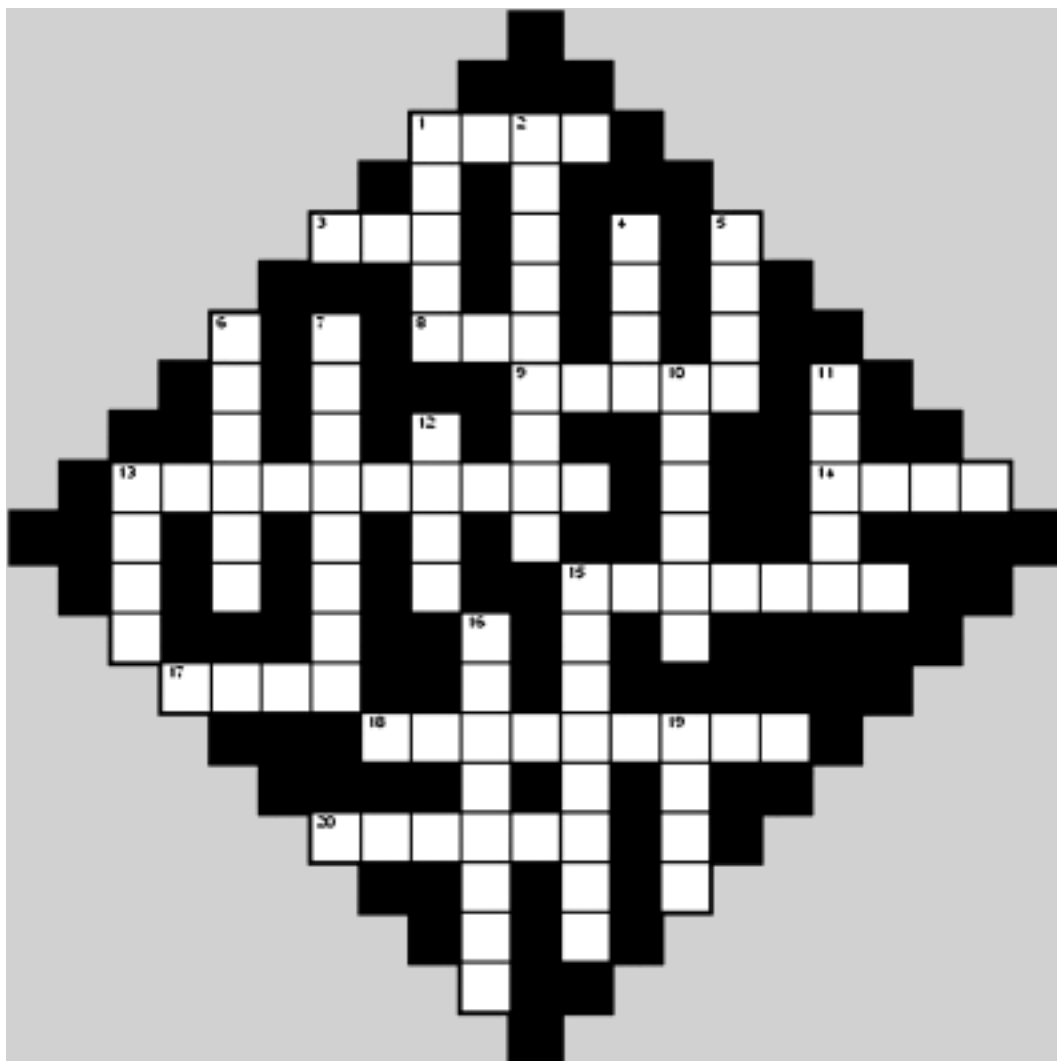
ACROSS

- 1 Harvard is one type
- 3 Earl Grey is one
- 8 Oriental sauce bean
- 9 Vine whose leaves are sometimes "skeletonized"
- 13 Jelly fruit
- 14 Pickling herb
- 15 Tart pie vegetable
- 17 We eat them mashed and candied
- 18 Tropical fruit
- 20 Large tuber whose white flesh resembles water chestnuts

DOWN

- 1 I'd ride my PINTO to LIMA in a SNAP to eat these veggies!
- 2 Popular slicing tomato
- 4 Gumbo vegetable
- 5 Halawy, Maktoom and Medjool are varieties of this fruit
- 6 Ba-da-BING! What a treat this fruit is!
- 7 Nocturnal larvae that feed on corn stems
- 10 Large genus of fruit trees
- 11 Beverage made from apples
- 12 This veggie is a SNAP, SUGAR!
- 13 Stuffing herb
- 15 Don't ROOT around there, I BEG 'YA
- 16 Pumpkin pie spice
- 19 She put in her thumb, and pulled out a _____

— solution page 21



Go Native with Xeriscape!

by Cathy Rymer, Master Gardener,
Water Conservation Specialist,
Town of Gilbert

We are so lucky here in the Southwest. We can enjoy being outside in our yards nearly year-round. Imagine relaxing in your lounge chair under the shade of a large tree, sipping a refreshing drink while you watch butterflies and hummingbirds visit the colorful and fragrant flowers in your landscape. This is the vision most of us have of a perfect afternoon in our backyards, right?

If you have been unsuccessful trying to create your own oasis, you're not alone. Trying to re-create the Midwest here in the Southwest can be very frustrating. The rules here are different, and the plants you grew "back home" just aren't happy here in our salty soils and challenging climate!

But don't give up! Our Sonoran Desert

is the most diverse desert anywhere, with lush plants and a variety of wildlife. Desert plants from around the world can be incorporated into our landscapes, creating a variety of colors, textures, forms, and even fragrances. With a little planning you can have plants blooming all year that attract butterflies and hummingbirds. You can celebrate the seasons with fragrant flowers and colorful foliage, even bringing some indoors as cut flowers. All this can be accomplished by using drought-tolerant plants! Using native and desert-adapted plants just makes sense. Plus, you can help conserve our most precious natural resource in the process. It's all part of the technique known as Xeriscape. Here are some simple tips for success.

DESIGN TO SAVE ENERGY AND WATER

Save on energy costs by placing trees on the west and east sides of your home.

As you contour your property, create depressions or swales that capture rainwater. Trees and shrubs located near these areas will benefit from the moisture, and you won't need to water as often.

Group plants with similar water needs. Put them on the same irrigation line if possible. This way, moderate water users won't overwater less thirsty cacti and succulents.

CHOOSE APPROPRIATE PLANTS

There are hundreds of colorful, attractive or fragrant plants that are also desert-adapted. These plants are happy in our salty soils and challenging climate.

Put the right plant in the right place. A Texas sage that matures to 6 feet in height by 6 feet in width will never fit into the 3-foot space between your wall and sidewalk without constant maintenance. Choose a 2- or 3-foot plant for this area instead. You can get more information about appropriate plants by contacting the Cooperative Extension or your local water conservation office.

USE APPROPRIATE TURF AREAS

Lawns that aren't used may not be necessary. Limit grassy areas to places where children and pets play, or areas that are used for outdoor recreation. If the only time you walk on your grass is when you mow it, you probably don't need it.

IRRIGATE EFFICIENTLY

Water only as much as necessary. Most plants die from improper watering, not diseases or insect damage. It is always better to water deeply and infrequently than to apply a little water every day.



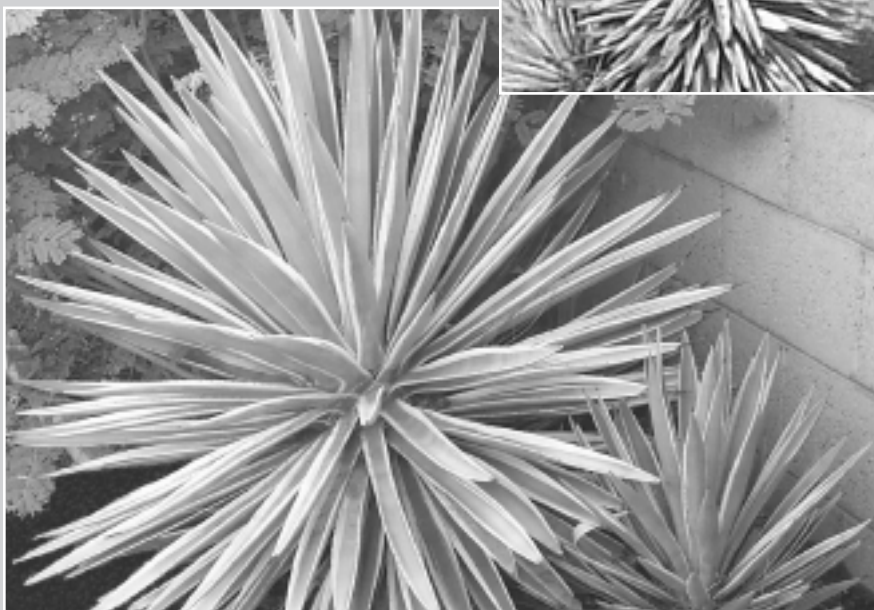
Photography: Candice Sherrill

Can You Identify This Plant?

FEATURES:

- Succulent accent plant.
- Dramatically symmetrical rosette shape.
- Long stiff leaves, generally 2 inches wide and 3 to 5 feet in length.
- Cream-colored stripes along leaf margins.
- Small, dark, evenly spaced teeth along leaf margins.
- Dark spine at leaf tips.
- Prolific producer of offsets or pups.
- Yellow-green flowers clustered in a candelabra-shaped array called a panicle atop a 10- to 15-foot stalk.
- Also bears clusters of bulbils or plantlets at branch ends. When separated from the plant, bulbils are capable of producing new plants.

For correct identification, turn to page 23.



Adjust your irrigation schedule periodically according to the seasons. Operate your system in the early morning hours. This way you are more likely to notice water spraying from missing emitters or running down the driveway or road.

PREPARE YOUR SOIL

Loosen soil with a spade or shovel to help compacted areas. Try amendments like gypsum to free salts so that they can be flushed down into the soil, away from tender roots.

USE MULCHES

Organic or inorganic mulches applied on top of the soil acts like an insulator, and will help reduce evaporation and keep soils cooler, especially in the summer. Don't pile mulches against the trunks of trees or shrubs; it can suffocate the tissues and lead to decay.

Mulches can effectively reduce weed growth by blocking sunlight. Organic mulches (mulch, compost, leaves, etc.) will decompose and release nutrients into the soil.

MAINTAIN YOUR LANDSCAPE APPROPRIATELY

Prune only when necessary. Over-pruning stresses plants and increases their demands for water. Fertilize only when necessary. Many desert-adapted plants don't need fertilizers. Overfertilizing can lead to excessive plant growth and higher water consumption. Provide adequate irrigation by not over or under watering. ■

Homing in on Jojoba

by Christine Bahto, Master Gardener

BOTANICAL NAME:

Simmondsia chinensis

COMMON NAMES:

Jojoba, goat nut, pignut, deer nut, coffeeberry

The Sonoran Desert is home to an amazing number of interesting plants; many of them used over the centuries by Native Americans for medicinal purposes and for food. Jojoba (pronounced hoe-HOE-buh) is no exception. It is an economically valuable native plant, but with its dense attractive growth it also makes a beautiful landscape plant.

CLASSIFICATION AND RANGE

Jojoba is a member of the family Simmondsiaceae, and its botanical name is rather confusing. In Latin, *chinensis* refers to something of Chinese origin. Which begs the question: How did a Sonoran Desert native that grows in Arizona, California, Northern Mexico and Baja California—but NOT China—get its name? The answer seems to be

that the botanist who first collected the seeds got them mixed up with ones collected in China, and the name has remained since.

DESCRIPTION

Jojoba is a woody shrub with an average mature height and width of 2 to 5 feet, although it can reach a height of 10 feet. Its gray-green leathery leaves have a vertical orientation, which is an adaptation to the extreme desert heat. The surface of the leaf is protected, while the edge receives the full brunt of the midday summer sun.

Jojoba is a dioecious shrub, meaning the male and female flowers do not appear on the same plant. The female flower is solitary and hangs downward at the leaf nodes, while male flowers appear in small clusters. The shrubs are wind-pollinated with the orientation of the leaves causing pollen to swirl around the female flower, thus ensuring contact. The seeds form on the female plant, and fall to the ground when fully ripe.

CARE

Jojoba grows best in sandy or rocky soils without soil amendments or fertilizer. Once established, it should be able to survive with little supplemental irrigation. Minimal pruning is required to maintain its beautiful naturally rounded shape. It flourishes in hot sunny spots in the garden, and makes an excellent border or a background plant for more colorful flowering plants. Jojoba is a long-lived, tough-as-nails shrub that deserves more consideration than it receives, especially when a native or natural desert landscape is the aim.



HISTORY AND USES

Native Americans have used jojoba oil for cooking, hair care, and as a treatment for medicinal problems such as poison ivy, sores, wounds, cancer, and kidney malfunction. Both Native Americans and early white settlers used the seeds to make a substitute for coffee. The seeds, as well as the leaves, were also used as a forage source for livestock.

In the 1970's jojoba became the focus of numerous commercial research and cultivation projects. The jojoba craze eventually waned, and since then the industry has struggled with development and marketing problems. The plant is currently being grown commercially in the US, Israel, Argentina, and Australia.

Jojoba seeds are unique in the plant kingdom in that they contain an oil that is actually a liquid wax. The oil is chemically similar to sperm whale oil; because it does not become rancid when exposed to high temperatures, it has been used to replace sperm whale oil in industrial applications. The oil is also similar to sebum, a substance excreted by human sebaceous glands. It is used extensively in the cosmetics industry as a valuable ingredient in



Photography: Candice Sherrill

The Plant Vampires

by Ellen Wait, Master Gardener

moisturizers, cleansers, and conditioners. One-hundred-percent-pure jojoba oil can be found in the natural goods section of some valley grocery stores, as well as in health food stores.

The next time you pick up a bottle of moisturizer or a new hair care product, check the label to see if jojoba oil is listed as one of the ingredients. Then take a look at the plants growing in your backyard, and consider how important it is to preserve the unique plant spectrum of the Sonoran Desert for the future. ■

References:

Benzioni, Aliza. "Jojoba."

Institutes for Applied Research.

Ben-Gurion University of the Negev. 1997.

Duke, James A. "Simmondsia Chinensis."

The Handbook of Energy Crops. 1983.

Tremper, Gary.

"The History and Promise of Jojoba."

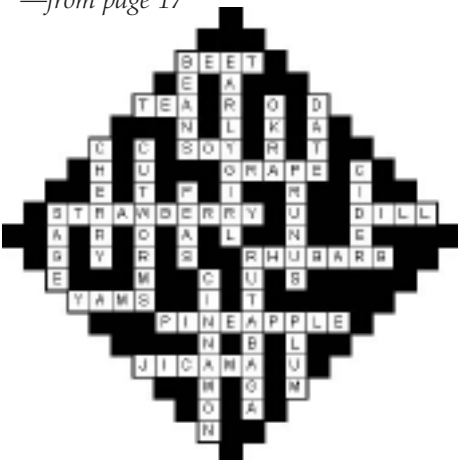
Arizona-Sonoran Desert Museum. "A Natural History of the Sonoran Desert."

Purdue University Center for New Crops and Plant Products. www.hortpurdue.edu.

HARVEST TIME

PUZZLE SOLUTION

—from page 17



What better time than Halloween to talk about... THE PLANT VAMPIRES! These insects belong to the order Homoptera (homo- meaning same, and ptera- meaning wing). The order includes about 42,000 species. With the exception of the cicadas and some fulgorids, most species members are small. Common names include plant hoppers, treehoppers, lantern bugs, aphids, whiteflies, scale, and the dreaded leafhopper.

These insects have earned the "vampire" label because they pierce tiny holes in plant tissue and suck out the sap. They produce honeydew, and often cause chlorosis and leaf curl in the host plant. They are exclusively terrestrial feeders and perhaps the most damaging order of insects to agronomic crops. In addition to direct feeding damage, many carry plant viruses.

LEAFHOPPERS

Belonging to the family Cicadellidae, leafhoppers are small (rarely growing larger than 13mm) yet destructive. They are distinguished from other families by the presence of one or more rows of spines extending the full length of the hind tibia. Some are marked with bright colors. Immature leafhoppers can't fly, but the mature ones have wings. They hop around erratically when disturbed.

Leafhoppers may feed on almost any type of plant, and have strong habitat affinities. They particularly like beans, beets, potatoes, and fruit trees. Cell growth is often inhibited on the underside of leaves where they feed.

They bring a special kind of misery to tomatoes in the form of "curly top" virus, which stunts the plant and causes hard, leathery leaves. Branches become stiff and erect, and the veins turn purple. Fruit, if any is produced, is deformed. Curly top will eventually kill the plant. The virus cannot be communicated from plant to plant; the leafhopper must carry the virus and inject it into the plant with its vampire bite. There is no treatment for curly top; affected plants must be removed and disposed of. But NOT in your compost pile!

WHEN LEAFHOPPERS VISIT:

Make a sticky trap with honey or molasses on a piece of stiff cardboard and wave it over the plants. Disturbed and disoriented leafhoppers will stick to the boards, which can then be destroyed.

Invite predators into your garden. Assassin bugs like sunflowers; lacewings enjoy citrus; and hover flies flock to cosmos, dwarf morning glories, marigolds and spearmint.

Try a Garlic-Pepper spray: (Wear gloves for this task). Liquefy three bulbs of garlic and five cayenne peppers in a blender with two cups of water. Strain off all the solids and add enough water to make one gallon. This is your concentrate. Use only 1/4 cup of concentrate to make a gallon of solution. Add a tablespoon of vegetable oil to each gallon of solution in your sprayer.

Be grateful you are not dealing with the leafhopper's cousin, the sharpshooter, who shares many of the charming qualities of the leafhopper AND practices "projectile defecation." It's not pretty! ■

Of Friendships and Gardens

by Sandra Forsey,
Master Gardener Intern

For most of my life I've been driven by a deep passion for both art and nature, often drawing artistic inspiration from the colors and lines and forms found in the outdoor world. I have seldom spoken with others about this passion because I felt they might not appreciate or understand it.

But then I met Sydney.

I first became acquainted with Sydney six years ago, when she moved into my neighborhood. At first our relationship was a low-maintenance affair that benefited us both; we shared many of the same interests, especially gardening, and I found that many tasks were made easier when we worked together. But then, like the aging of a particularly fine wine, our relationship slowly blossomed into a deep bond and friendship as we discovered that we were true kindred spirits. Sydney's calm exhorta-

tions of "Why not, let's just try it" would often turn doubt into action, and before long our gardens began to flourish and grow along with our souls.

From throwing eighty bags of dirt over a six-foot fence as the other empties them into raised garden beds in the heat of June, to setting up or repairing drip systems, each of us always knows the other will be happy to help out. We love spending the day at the nursery, learning about and selecting plants and then buying them in bulk. The saying "Our eyes are larger than our stomachs" no longer applies. Now it's "Our eyes are larger than the back of our car."

At the end of each season we visit the other's garden to help trim, rip out, mow, clean up, and load trash into the trailer to take to the dump. We come away aching and tired, but also with a feeling of fellowship and accomplishment that you don't often experience in



daily life. Once when the plants in a large flower bed suddenly died, spirits were quickly lifted when the other showed up with a couple flats of flowers and said "Come on let's plant these, it won't take long."

Somewhere along the way we decided our gardens could benefit from the addition of a few pieces of art. We settled on iron, but trying to find someone who worked with iron and thought like both an artist and a woman was virtually impossible. I knew I could meet at least one of these criteria so, I decided to sign up for a welding class at the community college.

Although welding turned out to be much more tedious than I had realized, after completing the course I assured Sydney that I could teach her to do it. We split the price of a MIG welder, a plasma cutter and few other tools and went to work.

As we saw projects progress from vague ideas to a few pencil sketches to final design to the actual welding, our enthusiasm and passion escalated. We set deadlines for completion of our projects, but as with the chess set "Strategy," we were often having so much fun that the deadline became secondary as we worked straight through from six in the morning until after midnight.



Photography: Sandra Forsey

With other projects such as the sand pendulum “Inertia” and the red person “Breaking Free,” our schedules and commitments didn’t allow us to devote that much time during the day, so we waited until we had put our families to bed to go to work. On those occasions we would work until two or three in the morning, and diet coke and Haagen-Dazs never tasted better than they did those nights. We laughingly agreed that no slumber party was ever as much fun.

We often refer to our gardening endeavors as “Survival of the Fittest.” (Hence, the inspiration for the sculpture of the same name). We sometimes decide to incorporate a plant that supposedly won’t flourish in our zone. When that happens, we cross our fingers and just try it. Amazingly, we sometimes find that we can get it to grow quite beautifully here.



There’s a powerful message in my relationship with Sydney that I would like to share with others: If you’re very lucky, you might someday cultivate a close friendship at the same time you’re cultivating a garden. I feel blessed that the seeds of our friendship were planted in the right season and the perfect zone, and have been able to flourish and bloom. We’ve formed a perennial friendship, and the plants in both our gardens have benefited from that bond. ■

*I suppose there is one friend
in the life of each of us who
seems not a separate person,
however dear and beloved,
but an expansion, an interpretation
of one’s self, the
very meaning of one’s soul.*

— Unknown

Garden-Smart TIPS

HANDY MEASURE

We gardeners often find ourselves in need of a measuring stick to space and plant shrubs and seeds evenly, or for determining depth when we’re digging a hole. You can put your shovel, rake, and/or hoe to this use by placing a yardstick along the handle and duplicating the measurements with a waterproof marker. Now you have a handy yardstick with you almost any time you’re working in your yard!

—Contributed by Annalisa Palacios, Master Gardener



Identification

—from page 7

Common Names: Variegated Caribbean Agave, Ribbon Agave, Pacific Agave

Botanical Name: *Agave angustifolia* var. *marginata*

Family: Agavaceae

Easy to confuse with: Caribbean Agave (*Agave angustifolia*), which has no leaf stripes

Of Note: Like most agaves, this plant will flower once after approximately 10 years and then die. Flower stalk may persist for many months. Cutting off the stalk will not prolong the plant’s life.



*When Summer is Done,
It's Time for Fall Fun!*

FALL GARDEN FESTIVAL

October 25, 2003 from 8:00 a.m. until 2:00 p.m.

Admission is Free

Located at Metro Tech High School
1900 W. Thomas Road in Phoenix

Refresh your garden for fall. Shop the Fall Garden Rummage Sale and select from hundreds of plants at fantastically low prices! Bring in your potted plants and exchange them for new ones at The Great Perennial Divide Booth. Get gardening questions answered by a Master Gardener. Check out garden-related projects done by students at Metro Tech High School.

Find out more about local gardening clubs.



For more information, phone (602) 470-1556.

Sponsored by Maricopa County Cooperative Extension.



Spread the Word! **Give a Gift Subscription**

The Master Gardener Journal is a great way to give your favorite gardener a gift they can really use.

Six 24-page issues a year packed with:

- Secrets for successful gardening in the low desert
- Upcoming classes and events
- Seasonal gardening tips
- Fruit and vegetable articles with tasty new recipes to try
- Book, Internet site, and publication reviews of interest to plant lovers
- Current environmental, pest, disease, and chemical bulletins
- Plant selections for the desert
- Exciting illustrations and photos

For information on subscription rates, please call 602-470-8086 ext. 308, or visit our website: <http://ag.arizona.edu/maricopa/garden/html/pubs/mgjjournal.htm>

Arizona Cooperative Extension
U.S. Department of Agriculture
The University of Arizona
Tucson, Arizona 85721

Official Business
Penalty for Private Use \$300

Issued in furtherance of Cooperative Extension work, acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture, James A. Christensen, Director, Cooperative Extension, College of Agriculture & Life Sciences, The University of Arizona. The University of Arizona is an equal opportunity, affirmative action institution. The University does not discriminate on the basis of race, color, religion, sex, national origin, age, disability, veteran status, or sexual orientation in its programs and activities.