

JOURNAL



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THE UNIVERSITY OF
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INSIDE THIS ISSUE:

- 3 Last Minute Holiday Gift Ideas

- 6 Does Your Landscape Have a Drinking Problem?

- 8 Lettuce for the Cool Season

- 11 Desert Milkweed



Master Gardener Journal

Last Minute Holiday Gift Ideas	3
Computer Corner	4
Arizona's Official Noxious Weed List	5
Earth-Friendly Gardening: Does Your Landscape Have a Drinking Problem?	6
Creature Comforts: Gambel's Quail	7
A Bountiful Garden: Lettuce for the Cool Season	8
Meet the Natives: Desert Milkweed, Fit for a Queen	11

BONUS HOLIDAY ISSUE

You'll find lots of interesting reading here in our special Bonus Holiday Issue. Next month, we will be returning to our former odd-even month publishing schedule. Look for our January-February 2004 issue in your mailbox soon!

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.

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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.

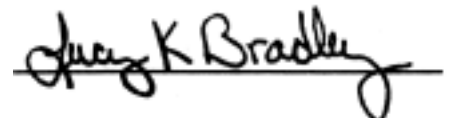
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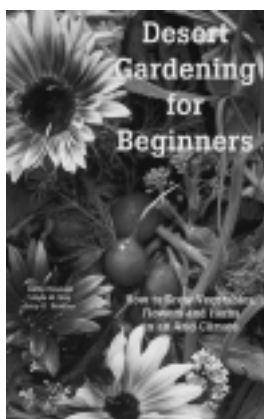
Citrus, Candice Sherrill; Desert Milkweed 1 & 2, Candice Sherrill; Lettuce, Carol Stuttard; Weeds, Courtesy UA/Wm. B. McClaskey



Lucy Bradley, Extension Agent, Urban Horticulture

Last-Minute Holiday Gift Ideas

DESERT GARDENING FOR BEGINNERS: HOW TO GROW VEGETABLES, FLOWERS AND HERBS IN AN ARID CLIMATE
\$8.95 by Cathy Cromell, Linda A. Guy and Lucy K. Bradley

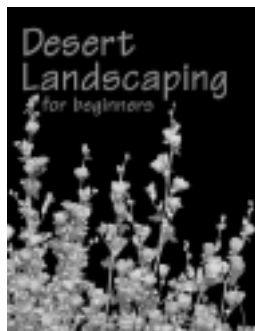


Allows anyone — no matter how “black” their thumb — to quickly discover the joys of gardening year-round in the desert. Desert Gardening for Beginners covers all the

basics for desert gardeners. There are chapters on desert soil characteristics, soil preparation, removing Bermuda grass, garden design and location, making compost, cultivation techniques, effective watering, managing insects, diagnosing problems, as well as specific tips for vegetables, flowers and herbs. As an added bonus, the book includes three planting calendars that provide the best months to sow hundreds of vegetables, flowers and herbs for maximum success.

DESERT LANDSCAPING FOR BEGINNERS
\$14.95

Successful landscaping in the Southwest requires a different set of techniques than those used by gardeners in most of the country. Desert Landscaping for



Beginners contains the latest research-based information from the University of Arizona, written in user-friendly language. This 224-page book includes illustrations, resources and index. Chapters in this book written by local experts:

- The Magic of Desert Plants, Frank Martin
- Selecting and Transplanting Trees and Shrubs, Shanyin Hosier
- Watering Desert Landscapes, Donna DiFrancesco
- Pruning for Healthy Trees and Shrubs, Lucy K. Bradley
- Plant Problems, Lucy K. Bradley & Shanyin Hosier
- Seasonal Pests, Terry Mikel
- Frost Protection, Lucy K. Bradley
- Cacti and Other Succulents, Kirti Mathura
- Wildflowers, Michelle Rauscher
- Landscaping for Wildlife, Catherine Rymer
- Citrus Trees, George Chott
- Roses in the Landscape, Marylou Coffman & Rod McKusick
- Growing a Healthy Lawn, Sharon Dewey

EARTH-FRIENDLY DESERT GARDENING
\$14.95 by Cathy Cromell, Jo Miller and Lucy K. Bradley

Regardless of your gardening experience, you can easily save money on utility bills, conserve water, reduce yard waste sent to landfills, and create a low-maintenance



landscape that is in balance with its natural surroundings.

Earth-Friendly Desert Gardening shows how to lower utility bills by locating plants where they moderate the sun and wind, reduce water

consumption by choosing plants wisely and watering effectively, make mulch and compost from yard waste, manage insects without synthetic pesticides, create a habitat for birds, butterflies, and other wildlife, and maintain the quality of water supplies by reducing fertilizer and pesticide use. It also explains how to add edible plants to the landscape, grow a low-allergen garden, create defensible space before wildfire strikes, direct thousands of gallons of rainwater to the landscape, and determine if a gray water system is right for you.

Information in this book is based on university research and is geared specifically to the unique growing conditions of the Sonoran Desert. The 136-page book includes illustrations, checklists, guidelines, guides, plant lists, resources and an index.

Mail orders to:
Arizona Master Gardener Press
4341 E. Broadway Road, Box 103
Phoenix, AZ 85040-8807

Make checks payable to: University of Arizona. Please include \$.50 tax for Arizona residents and \$4.00 shipping per book.

Also available at area bookstores and nurseries. ■

Computer Corner

by Candice Sherrill, Master Gardener

HOLIDAY HERBS

An article by Dr. Leonard Perry, University of Vermont Extension Professor on the subject of herbs that have a holiday history. Coverage includes English pennyroyal, rosemary, thyme, and lavender. <http://pss.uvm.edu/ppp/articles/xmasherb.html>

CARING FOR A HOLIDAY CACTUS

From the University of Illinois Extension Homeowner's Column page. Experienced advice for post-holiday care from light to temperature to watering regimen. www.urbanext.uiuc.edu/champaign/homeowners/011110.html

BUILD YOUR OWN BOULDERS

Visit this site to find out what goes into constructing and finishing those realistic-looking landscape rocks and boulders that you see around town. Directions are shown for making lightweight rocks and boulders out of A/B foam, and refinishing them in a variety of ways to mock nature's own. You can even install hidden lights in these. <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, as well as other important biological information and a dozen or so suggestions for control. Also included is a list of plants the pest attacks, and what damage looks like. <http://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 see what the state bird, butterfly, colors, flag, flower, fossil, gemstone, neckwear and tree are, but you can read about more interesting topics such as the story behind Supima cotton. <http://www.lib.az.us/links/arizoniana.cfm>



AGRICULTURE IN IRAQ

Check here to learn more about the country of Iraq. Website even provides detailed information about the country's water resources, livestock and agrarian reform history. <http://www.lupinfo.com/country-guide-study/iraq/iraq53.html>

SISSINGHURST GARDENS

Now you can pay a virtual visit to Vita Sackville-West's famous gardens at Sissinghurst Castle. The opening page shows a detailed map of the grounds, and from there you can link to different sections of the estate. Dozens of outstanding photographs showcase the verdant hedgerows, ivy-covered walls, glorious floral displays, and outstanding examples of garden statuary that make this a must-see when visiting the British Isles. www.invectis.co.uk/sissinghurst/

USDA ACRONYMS

Banish confusion. Here's a "living" list of acronyms commonly used by the US Department of Agriculture. <http://www.reeusda.gov/1700/what-new/acronyms.htm>

LATIN MEANINGS

At the website of WFPL, Louisville's Public Radio News Station, you can learn about many of the Latin terms used in plant taxonomy, from *Acuminata* to *Vulgaris*. http://wfpl.org/home-grown_latin.htm

ORNITHOLOGY

Here is a website that provides just about any type of information you might want to know about our feathered friends. There's a fantastic photo gallery included, as well as articles with titles like: *Be Careful When Mowing and Pruning, Clean Your Bird Houses to Prevent Disease, and U.S. Federally Listed Species*. <http://birdwebsite.com/articles/>

WEEDS OF ARIZONA

Bookmark this one. "An Illustrated Guide to Arizona Weeds" by Kittie F. Parker, published by UA Press, gives information on description and distribution of Arizona's weeds. Enlargeable illustrations take the guesswork out of identification. Just let your mouse arrow hover over the image that pops up, and then click on the button in the lower right-hand corner when it appears. <http://www.uapress.arizona.edu/online.bks/weeds/titlweed.htm>

Arizona's Official Noxious Weed List

The following plants are prohibited from entry into Arizona unless accompanied by the appropriate federal and state permits. (Additional weed species are regulated by the federal government and may not be transported without specific permit).

Acroptilon repens (L.) DC., Russian knapweed • *Aegilops cylindrica* Host., Jointed goatgrass • *Alhagi pseudalhagi* (Bieb.) Desv., Camelthorn • *Alternanthera philoxeroides* (Mart.) Griseb., Alligator weed • *Cardaria pubescens* (C.A. Mey) Jarmolenko, Hairy whitetop • *Cardaria chalapensis* (L.) Hand-Muzz, Lens podded hoary cress • *Cardaria draba* (L.) Desv., Globe-podded hoary cress (Whitetop) • *Carduus acanthoides* L., Plumeless thistle • *Cenchrus echinatus* L., Southern sandbur • *Cenchrus incertus* M.A. Curtis, Field sandbur • *Centaurea calcitrapa* L., Purple starthistle • *Centaurea iberica* Trev. ex Spreng., Iberian starthistle • *Centaurea squarrosa* Willd., Squarrose

knapweed • *Centaurea sulphurea* L., Sicilian starthistle • *Centaurea solstitialis* L., Yellow starthistle • (St. Barnaby's thistle) • *Centaurea diffusa* L., Diffuse knapweed • *Centaurea maculosa* L., Spotted knapweed • *Chondrilla juncea* L., Rush skeletonweed • *Cirsium arvense* L. Scop., Canada thistle • *Convolvulus arvensis* L., Field bindweed • *Coronopus squamatus* (Forskal) Ascherson, Creeping wartcress (Coronopus) • *Cucumis melo* L. var. *Dudaim* Naudin, Dudaim melon • (Queen Anne's melon) • *Cuscuta* spp., Dodder • *Drymaria arenarioides* H.B.K., Alfombrilla (Lightningweed) • *Eichhornia azurea* (SW) Kunth., Anchored waterhyacinth • *Elytrigia repens* (L.) Nevski, Quackgrass • *Euphorbia esula* L., Leafy spurge • *Halogeton glomeratus* (M. Bieb.) C.A. Mey, Halogeton • *Helianthus ciliaris* DC., Texas blueweed • *Hydrilla verticillata* Royale, Hydrilla (Florida-elodea) • *Ipomoea* spp., Morning glory. All species except *Ipomoea carnea*, Mexican bush morning glory; *Ipomoea triloba*, three-lobed morning glory (which is considered a restricted pest); and *Ipomoea aborescens*, morning glory tree • *Medicago polymorpha* L., Burclover • *Nassella trichotoma*(ees.) Hack., Serrated tussock • *Onopordum acanthium* L., Scotch thistle • *Orobanche ramosa* L., Branched broomrape • *Panicum repens* L., Torpedo grass • *Peganum harmala* L., African rue (Syrian rue) • *Portulaca oleracea* L., Common purslane • *Rorippa austriaca* (Crantz.) Bess., Austrian field-cress • *Salvinia molesta*, Giant salvinia • *Senecio jacobaea* L., Tansy ragwort • *Solanum carolinense* L., Carolina horsenettle • *Sonchus arvensis* L., Perennial sowthistle • *Solanum viarum* Dunal,

Tropical Soda Apple • *Stipa brachychaeta* Godr., Puna grass • *Striga* spp., Witchweed • *Trapa natans* L., Waterchestnut • *Tribulus terrestris* L., Puncturevine

From the Arizona Department of Agriculture website at <http://agriculture.state.az.us/PSD/quarantine2.htm>

Naming Names

by Kelly Young, Instructional Specialist, Maricopa County Extension

As seen in "Arizona's Noxious Weed List" on the left, when scientific or botanical names are written down, credit is traditionally given to the person who discovered the plant and "authored" its name.

If you look closely at the list, you'll notice that the letter L. follows several of the scientific names. This "L" stands for Carolus Linnaeus, aka Carl Linne, the Swedish botanist who over 200 years ago named thousands of plants and developed the system of classifying living organisms.

If a plant is renamed, as sometimes happens, the original author is given credit in parentheses out of respect, and the new author's name follows outside the parentheses. ■



Photography: Courtesy UA/Wm. B. McClaskey

Does Your Landscape Have A Drinking Problem?

Sent by Cathy Rymer, Water Conservation Specialist, Town of Gilbert

Are your plants' leaves wilted or curled?

Are the young shoots on your plants shriveled?

Do you have algae or mushrooms growing in your lawn?

Do your plants' leaves appear to be yellowing with green veins?

Do your plants' leaves have a "torched" look to the edges (dry and brown)?

Have you tried to install plants only to have them fail after a few weeks or months?

If you answered "yes" to any of the above, your landscape-watering schedule may need to be adjusted.

As could be expected, one of the most common reasons for plant failure here in the desert is incorrect watering. During the cool weather of late autumn and winter, over-watering is a common problem as temperatures drop and many residents forget to reduce their watering. Plants that are irrigated at the same frequency that they were in the sum-

mer are subject to root and stem rots. Soils that are too moist prevent the intake of nutrients through a plant's roots, resulting in yellowing leaves.

It's time to turn back the clock — the irrigation clock that is. If your schedule for watering was once a week in the summer, you can extend that period to once every two or three weeks in the winter. Landscapes that include native or desert-adapted plants may only need water applied once per month in the cool season. Dormant Bermuda grass only needs water once a month. Even lawns overseeded with rye should only be watered once per week when the weather is cool.

When spring arrives and temperature climb, the frequency of watering must be increased to keep up with plants' water needs. For instance, if you were watering once every two weeks in the spring, then increasing the frequency to a single watering once weekly should be adequate during the summer months. Too much water in the high temperatures and humidity of the monsoon season can cause root and stem rotting. Soils must be allowed to



Photography: Courtesy of UA

dry a bit in-between irrigations for the best plant health. This could save on your water bills as well.

Regardless of the season or the frequency of application, it is critical to apply enough water when you do. Irrigate to wet the soil to the proper depth. Trees should be watered long enough to wet the top two to three feet of soil. For shrubs, wet the soil down 18 inches or so. And for shallow-rooted turf, groundcovers, flowers and vegetables, wetting to one foot deep is sufficient.

To determine the depth of wetting, push a soil probe (metal rod) down into the soil after irrigation. The probe will push down through wet soil but will stop when it hits dry soil. If water isn't getting down deep enough, increase the length of time you're watering.

Finally, when selecting plants remember to choose those that are desert adapted. They can tolerate wide swings in temperature, intense heat and sun, drought, low humidity, drying winds, alkaline soils, high salts, and pests. Plants not adapted to the desert struggle and often fail.

For more information on watering your landscape plants and programming your irrigation timer, ask for the booklet, *Landscape Watering by the Numbers*. It's available FREE from your city's water conservation office. Or check on-line at <http://www.ci.gilbert.az.us/water/guidelines.html> ■



Photography: Candice Sherrill

Gambel's Quail

by Sue Hakala, Master Gardener

A Gambel's Quail begins life in a nest that is basically a scratched out depression in the dirt measuring approximately 1 to 1 1/2 inch in depth and 5 to 7 inches in diameter. This nest will be located in a well-sheltered, shady area.

Mom will lay one egg and then rest for a day, then lay again the next day and so on until 10 to 12 eggs are laid. She will incubate the eggs with dad keeping watch from a nearby perch. All the eggs will hatch at the same time, in approximately 22 days. Dad then typically leads the covey (group of quail) through the vegetation to find supplies of insects for the young to eat. Juvenile quail eat only insects for the first month, utilizing the protein to help them grow. After that, they add succulent leaves and vegetation to their diet. It takes three months for them to become independent adults.

Gambel's Quail live in the deserts of the Southwest and south into Northern Mexico, typically in family groups of 5 to 7 birds. In the Sonoran Desert, one breeding pair requires about 5 acres to raise their brood, and they need to stay within about a mile of a water source. They also require brush for cover, and for escape when they are threatened. Typically, this kind of habitat also provides the insects, seeds, and small plants that they eat.

Gambel's Quail are particularly fond of legumes. The leaves, flowers, and especially the seeds, make up about 95 percent of their diet. They also eat seeds from grasses, cactus fruits, and other plants. Since quail rest during the hottest part of the day, plants also



provide shade from the sun. If quail can't extract enough moisture from their food to survive, they must find supplemental water sources.

In the desert, quail reproduction rates are tied to winter rains. The rains influence plant chemistry, especially in legumes. Plants produce phytoestrogens, chemical compounds that regulate reproduction in birds and mammals. When rains are skimpy plants become stunted and produce more phytoestrogens. Eating these plants effects quail body chemistry, triggering lower reproduction.

To recognize a Gambel's Quail, look for their jiggling, forward-facing topknot. The plump birds are poor flyers, and spend most of their time on the ground. They are, however, capable of quick flight up into surround trees when danger threatens.

Look for them in mesquite habitats and riparian areas, and listen for their distinctive call. They make 10 different vocalizations. A good place to see them locally is on the "Quail Run" trail at the Desert Botanical Garden. Just have a seat on one of the benches and sit there quietly; it won't be long until these busy birds come by. ■

Irrigation Time Bombs

by Mike Mekelburg,
Master Gardener

Irrigation systems, like most things, are only as good as the effort you put into them. The following is a short list of the common problems found in do-it-yourself installations.

Not using a pressure regulator to limit water pressure in the line to 20 psi. This can cause drip emitters to come apart or pop off poly lines, and can cause the lines themselves to come apart at connections.

Putting drip emitters at the ends of 1/4-inch "spaghetti" lines where rabbits can chew the small tubing and create geysers.

Putting the main poly line above ground in unfenced areas where all manner of wildlife can feast and create huge leaks.

Using "flag" drippers that eventually wiggle apart and make geysers even with the proper use of pressure regulators.

Running 5/8-inch poly line farther than 500 feet and having more than 250 gallons per hour output, which will deliver progressively less water to emitters toward the end of the line.

Using a mix of high- and low-output devices, such as mushroom bubblers and 2-gallon-per-hour drippers on the same line, which can only overwater some plants or shallow water others.

Using cheap parts, such as home improvement store lawn timers, to water thousands of dollars worth of landscape material.

Slapping an irrigation system together and leaving for the summer.

Lettuce for the Cool Season

by Laurel Reader, Master Gardener

BOTANICAL NAME

Lactuca sativa From the Latin “lactis,” meaning “milk,” referring to the white sap found in the stems and veins, and “sativa,” meaning “cultivated.”

IN GENERAL

A favorite of gardeners, lettuce is the basic component of most salads. The word “salad” is said to come from the practice of dipping greens into “sal” or salt.

Although lettuce is one of the easiest vegetables to grow, many gardeners, especially desert dwellers, hesitate to try it. Once they learn that the secret lies in choosing the right varieties, however, they often become converts.

Gardeners frequently tuck lettuce into small areas between ornamental flowers and plants. Lettuce is highly ornamental as a border or container companion plant.

HISTORY

The original wild lettuces (*Lactuca serriola*, *Lactuca virosa*) are native to Asia and Europe, with some sources reporting that garden lettuce first originated in Turkey or Iran, and others citing a range from Siberia to North Africa.

The Egyptians first cultivated lettuce for the edible oil in the seeds as early as 4500 BC. It may have been considered an aphrodisiac. Egyptian tombs have been found that contain paintings of lettuce with long, pointed leaves resembling Romaine. The Greek physician Hippocrates (born in Cos in 456 BC) believed the milky sap of lettuce would induce sleep. Lettuce was also popular with the Romans, who believed that Augustus Caesar was cured of a serious illness by eating it. History has it that the emperor erected a statue to honor its healing abilities. Early herbalists often used the bitter juice or sap as a substitute for opium or laudanum.

The Romans introduced lettuce to Britain. It wasn't until the late 14th century that the English began mixing lettuce with herbs and other greens, and “mingling” it with oil, vinegar and salt—the early salad. Prior to the 18th century, however, it was mostly eaten cooked.

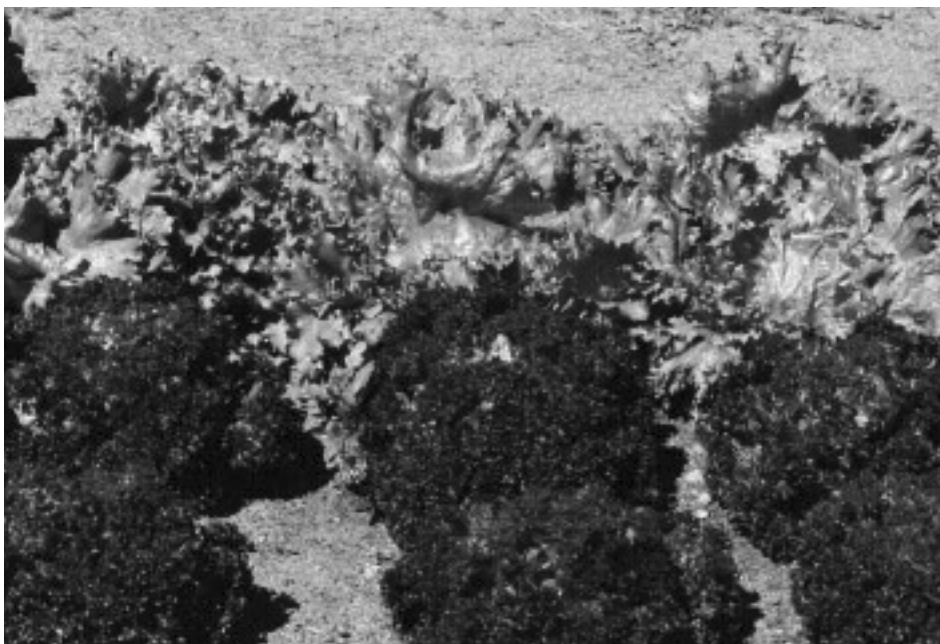
Modern breeding has concentrated on resistance to disease and bolting, as well as a variety of leaf shapes, flavors and colors. We now consume five times more lettuce than we did a century ago, with individual consumption currently exceeding 25 pounds per year.

VARIETIES

Lettuce is classified into four major groups based on growth habit: Looseleaf, Butterhead, Romaine, and Crisphead. A fifth group, somewhat of a novelty, is Celtuce.

Leaf lettuce (*Lactuca sativa crispata*) also called Looseleaf lettuce, forms clusters of leaves instead of rounded heads. They mature in 40 to 50 days, and are best for our short cool season. They do not require exacting conditions, tolerating heat, shade and varying soil conditions. All are exceptionally tender. These lettuces vary in appearance, with colors ranging from a blonde-green to dark green to red, and leaf texture from smooth to wrinkled to frilly. Simpson lettuce is one of the most popular varieties in the leaf lettuce category.

Butterhead, occasionally referred to as cabbage lettuce, has small, rounded, loosely folded heads with soft leaves. They mature quickly (in 50 to 75 days) and are more tolerant of poor soils and weather conditions than Crispheads. Leaf color ranges from pale-green to



Photography: Barbara Hamilton



medium-green outer leaves with pale green, cream-colored, or yellowish inner leaves. There are even red varieties such as "Sweet Red Butterhead." Their flavor is sweet and rarely turns bitter, and the leaves are tender and butter-textured. Buttercrunch, Boston and Bibb (also called Limestone) are among the most well-known cultivars of the Butterhead family.

Romaine lettuce (*Lactuca sativa longifolia*), also referred to as Cos, Roman and Manchester lettuce, produces tall upright plants that are perfect for fitting into tight spots. Their long narrow leaves are fairly stiff and heavy. The name "Cos" comes from the Greek island where it originated, and the name "Romaine" came into use because it was highly favored in early Rome. Although the milky fluid in older leaves can be bitter (yet nutritious), the interior leaves are paler in color and have a sweet, delicate flavor. Regular-sized Romaines mature in 70 to 80 days, but the mini varieties (Little Gem, Little Caesar, etc.) mature as early as 55 to 70 days. Young, tender leaves of all Romaines may be picked as they grow.

Head lettuce (*Lactuca sativa capitata*), also known as Roundhead or Crisphead, produces tight solid heads, usually light green in color due to lower amounts of chlorophyll in the

plants, and is the most widely sold lettuce. Although many people use the word "Iceberg" to describe head lettuce, Iceberg is but one variety; others are Imperial and Great Lakes. Most gardeners find Crisphead lettuce the most difficult to grow, especially in desert gardens. It requires a long season and is intolerant of hot weather, bolting in hot summer conditions.

Celtuce, also known as Stem Lettuce, Asparagus Lettuce and Chinese Lettuce, is common in Asia, though less familiar to Westerners. Called "Celtuce" because it resembles a cross between celery and lettuce, it is in fact a variety of lettuce grown for its thick, edible 6-inch stem and Romaine-like foliage. Celtuce stems can be cooked like broccoli and taste somewhat like a mild summer squash or artichoke. The leaves can be used in salads.

Note: Another term you might see is "Mesclun." Mesclun is not a lettuce variety, but a mixture of lettuces or other leafy vegetables and also called Baby Greens and Salad Mix. A Mesclun mix might include Arugula (*Eruca sativa*), Cress (*Lepidium sativum*), Mustard (*Brassica* spp.), Radicchio (*Cichorium intybus*), or Endive (*Cichorium endivia*), to name only a few. The word is derived from the Provençal, word "mesclumo," meaning mixture.

CHOICES FOR THE DESERT

Because we have a very short season before the summer heat comes upon us, it is important to choose lettuce varieties that have a short number of days from seeding to harvest. Look for heat-tolerant, slow-to-bolt varieties

that mature within 45 to 60 days (maturity times are usually found on seed packages and nursery labels). Good choices are Black Simpson, Slowbolt, Salad Bowl, Little Gem, Tom Thumb, and Red Sails.

HOW TO GROW

Lettuce requires cool conditions, growing best in temperatures between 55 to 70 degrees F. (Seeds fail to germinate, and young plants begin to bolt in temperatures exceeding 85 degrees). Lettuce crops require moist, fertile soil with good texture and good drainage. The ideal range of pH for lettuce is 6.0 to 7.0, although many varieties do well in soils with a higher pH.

Lettuce is happiest in light shade, and prefers afternoon shade in our hot climate. Interplanting between taller, later-maturing crops will expose tender young plants to the warm sun in the early stage of growth, and allow for increased shade as temperatures begin to rise and surrounding plants gain height.

Lettuce can be planted from September through February, either by direct seeding or by transplanting nursery plants. When starting from seed, sow directly where the plants will grow, and barely cover the seeds (no more than 1/4 inch) with soil. Keep soil moist for germination to occur. Water lightly to prevent seeds from becoming dislodged, and water often enough to keep the soil from drying out. Thin seedlings as they grow to 4 to 6 inches apart for leaf lettuce, and 6 to 8 inches apart for Romaine or Butterhead. Use the tender thinnings in salads. Use the same spacing for transplanting nursery starts.

WATERING

Lettuce is shallow-rooted, so for the most tender greens keep the soil evenly moist to a depth of about one foot and feed every two weeks with a soluble nitrogen fertilizer. Mulch the soil around young lettuce plants to maintain even soil moisture, but be careful to keep the mulch away from the plant stems. Regular attention to watering will encourage vigorous growth and minimize bitterness in the leaves.

PESTS AND DISEASES

Aphids, caterpillars, and slugs are common pests of lettuce. Monitor plants closely and often for their presence, being sure to look under the leaves where many pests reside.

Planting marigolds around lettuce is believed to repel aphids. This method of alternating lettuce with marigolds also increases the beauty of your garden. Insecticidal soap may be used to control aphids as well; just be sure to dilute the spray and test a few leaves first before spraying the entire plant. Be gentle when spraying lettuce; most leaves are quite tender. And don't forget the undersides of the leaves.

Bacillus thuringiensis is a safe and effective product for controlling caterpillars.

One way to control slugs is to incorporate a dry patch of sharp river sand between their daytime hiding places and their evening meal. Keep the garden clean to eliminate potential hiding places.

Foliage rots can be a problem, especially in hot or wet conditions. Providing good drainage and proper air circulation will minimize damage. Avoid overhead watering; use a soaker hose or drip irrigation covered with mulch to keep the leaves dry.

HOW TO HARVEST

Leaf lettuce may be harvested whenever it is large enough to use. Picking just the outer leaves (the "cut-and-

come-again" method) is a great way to harvest most types of lettuce, and regular picking will keep plants productive. Lettuce leaves turn bitter as they get older, so frequent picking is important. When plants are mature, cut every other plant to the ground to allow remaining plants more space for growth. If the season is still cool enough, you may want to set out new transplants between the remaining mature plants.

HOW TO STORE

Due to its high water content (nearly 95 percent), there is no method of preserving lettuce over the long term.

For best flavor and optimal nutrition, eat lettuce just after harvesting while it is fresh and crisp. If necessary, store freshly picked lettuce by wrapping unwashed leaves in plastic wrap, removing excess air in the wrap and placing in the coolest part of your refrigerator for a few days. The ideal temperature should be near 35 degrees F, but do not allow the temperature to go below 32 degrees, as this will damage the leaves.

Avoid storing lettuce with apples, pears or bananas. These fruits release ethylene gas, a natural ripening agent that will cause the lettuce to decay quickly.

Wash lettuce in very cold water just before serving. Ice water can revive limp leaves. For salads, pat lettuce dry with a clean towel so that dressings will cling to leaves rather than sinking to the bottom of the bowl. You should tear, not cut, lettuce leaves, since cut edges brown quickly. If possible, wait until just before serving to prepare lettuce. Damaged leaves lose vitamin C rapidly.

NUTRITIONAL VALUE

The nutritional value of lettuce varies with the variety. The darker the leaves, the higher the content of minerals and carotenoids, including beta-carotene. A green Romaine lettuce leaf can have six times as much beta-carotene as that of

a paler Iceberg. All lettuces have high water content and very few calories. They also provide fiber and folate.

One-quarter pound of Iceberg lettuce provides 14.7 calories, 1.13 g. protein, 2.4 g. carbohydrates, 1.6 g. dietary fiber, 21.5 g. calcium, 374.2 IUs Vitamin A, and 4.4 mg. Vitamin C.

One-quarter pound of Looseleaf lettuce provides 20.4 calories, 1.5 g. protein, 3.9 g. carbohydrates, 2.2 g. dietary fiber, 77.11 mg. calcium, 2154 IUs Vitamin A, and 20.4 mg. Vitamin C.

One-quarter pound of Romaine lettuce provides 18.1 calories, 1.8 g. protein, 2.7 g. carbohydrates, 2.7 g. dietary fiber, 40.8 mg. Calcium, 2948 IUs Vitamin A, and 27.2 mg. Vitamin C. ■

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Desert Milkweed: Fit for a Queen

by Kirti Mathura, Master Gardener

BOTANICAL NAME

Asclepias subulata

COMMON NAMES

Desert Milkweed, Jumete, Rush Milkweed, Reed-stem Milkweed

HABITAT & RANGE

Desert milkweed is often found along desert washes and sandy flats, and sometimes on rocky hillsides in lowlands up to 2,500 feet. Since it will settle into disturbed soils, it can be found along roadsides as well.

The range of desert milkweed extends from western Arizona and southern Nevada, into southeastern California and Baja California, Sonora, and Sinaloa, Mexico.

HISTORY & FOLKLORE

Historically, various Native Americans throughout its range have used desert milkweed as a medicinal plant. Others have considered it toxic. The Seris used the roots for headaches, toothaches and heart problems. Locally, Pimas used it as both a purgative and an emetic, and to alleviate sore eyes and stomach disorders.

Evidently the U. S. Department of Agriculture studied the desert milkweed as a potential rubber source for a time. No commercial use of the rubber was made, however.

DESCRIPTION

Desert milkweed forms a clump of numerous slender, erect, gray-green stems that arise from a woody base. This perennial can reach a height of 3 to 5 feet with a similar spread. Sparse linear leaves, 1 to 2 inches long and

1/16 to 1/8 wide develop on new growth but drop fairly quickly. Broken stems and leaves exude a milky latex containing rubber. Umbels of waxy pale yellow or cream flowers may bloom on stem tips any time from spring through fall. Typical of milkweeds, the seed-pods of *A. subulata* develop to approximately 3 inches in length, releasing tufted seeds when ripe.

Pineleaf milkweed (*Asclepias linaria*), a relative, is much leafier and typically smaller than desert milkweed. *Asclepias albicans* (white-stem milkweed) is a bit stouter with thicker, taller stems.

USES

Desert milkweed can be used as an upright sculptural accent in the landscape. Softer-foliaged perennials and annual wildflowers compliment milkweed's form. Producing practically no debris, desert milkweed is perfect for poolscape. It is tough enough to thrive in dry, hot, sunny locations, so use it in those difficult spots of full sun and reflected sun and heat. Preferring well-drained soil, it is quick to establish and very drought tolerant. For a natural look, use desert milkweed when planting wash areas.

And yes, desert milkweed is fit for a queen—a queen butterfly, that is. Typical of milkweeds, this species serves as a nectar source for the adult butterflies, as well as a food source for their caterpillars. The developing larvae will munch on the foliage as well as the buds and flowers. Don't worry—more will develop later! This milkweed also attracts the colorful tarantula hawk wasp.



Photography: Candice Sherrill

Other wildlife that may not be so welcomed are the milkweed bugs and aphids, although I've never noticed the bugs doing much harm, and aphid outbreaks aren't usually detrimental. To reduce aphid populations, use a strong jet of water or a soapy water spray. Less frequent irrigation can also make the plants less enticing to aphids.

If you're interested in propagating your own plants, milkweed germinates easily from seed planted in warm conditions.

HEALTH CONCERNS & CAUTIONARY NOTES

The milky sap of desert milkweed can be a skin irritant. ■

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Photography: Candice Sherrill

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THE EAST VALLEY CITRUS CLINIC:

Saturday, January 24, Greenfield Citrus Nursery in Mesa.

THE NORTHWEST VALLEY CITRUS CLINIC:

Saturday, January 31, at the U of A Citrus Agricultural Center in Waddell.

Gates open at 8:30 a.m. at each event with the clinic running from 9:00 a.m. to Noon. Tickets are available for \$5.00 by advance purchase, or \$8.00 at the gate and may be purchased from the Maricopa County Cooperative Extension. For more information, please visit <http://ag.arizona.edu/maricopa/garden/> or call (602) 470-1556 ext. 1012.



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