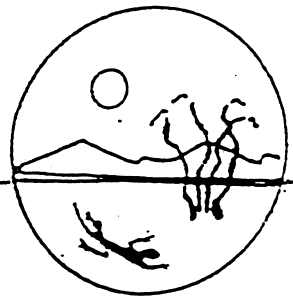
VOL. 8, NO. 6 The University of Arizona Cooperative Extension JUNE 1997

High on the Desert

Cochise County Master Gardener Newsletter



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

PLANT PROFILE–

Desert Willow

Botanical name: *Chilopsis linearis*
Family: Bignoniaceae
Range: Dry washes between 1,500 and 5,000 feet throughout the Southwestern United States and Northern Mexico

Desert willow is not a true willow but with it's long, slender weeping leaves it's a better substitute than the willow for the arid southwest region. A fast growing tree, it can grow 2-3 feet a year and reach heights of 30 feet. By nature it's a multi-trunked tree but can be pruned into a single trunk specimen or grown as a small shrub. Because it lacks thorns and the roots are not invasive, it can be planted close to walls and pavings without causing structural problems.

The flowers are fragrant, orchid-like and hang in clusters of five or more and range from white to pink to purple. Blooming from April to late summer the flowers are frequently visited by hummingbirds and butterflies. Desert willow is deciduous and the 8 inch seed pods will hang on the tree through the winter sometimes giving it a "shaggy appearance." The pods may be trimmed off, but consider leaving them on to provide food for birds. Inspection of a pod will reveal slender seeds with "hairs" on it. Hummingbirds use this to build nests with.

Desert willow prefers full sun but can take partial shade. Tolerant of drought, heat, wind, and cold, once it becomes established it can survive on rainfall alone. A deep watering once a month during the hot season will keep it more attractive looking. Discontinue irrigation in early fall as new growth can be damaged by frost. Thinning and shaping is best done in early summer. Seeds need no pretreatment for germination and desert willow are very easy to grow from seed. Because it has a very long tap root, I find it easier to start them in one gallon buckets. Plants will bloom the first year.

A related species, Chitalpa, *Chitalpa X tashkentensis*, is a hybrid of the desert willow and catalpa. Taking the best of both worlds, it matures at a height of 25 feet with a rounded canopy of stout branches. The leaves are dark green, an inch wide and three inches long which produces denser shade than the desert willow. The flowers are larger, bloom profusely, and are sterile so does not produce seed pods and gives it a cleaner appearance in winter. Taprooted like it parents, it can also be planted near structures and shares the same tolerances of harsh desert conditions.

Chilopsis linearis - grow a grove of them!

Cheri Melton
Master Gardener/Staff Writer

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Cuttings 'N' Clippings

► Peggy Dierking has pellet-fed horse manure - free, you haul. Call her at 378-7125 (leave message).

► Cochise County Master Gardeners Association will be celebrating the graduation of the new Master Gardener class at a picnic on June 17. For information, contact Carolyn at 458-0272.

► The June 19 meeting of the Sierra Vista Area Gardener's Club will be a tour of Mt. View Aquatic Plants. The group will leave promptly at 1:30 pm from the Ace Hardware parking lot in Sierra Vista. Questions? Call Yvonne at 378-2833.

► Remember, Cado Daily of the *WaterWise* Program is available for free water audits of your property. Call her at 458-8278, Ext. 141.

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Puncturevine (aka Goathead, Sandbur)

Tribulus terrestris L.
Zygophyllaceae
(Caltrop family)

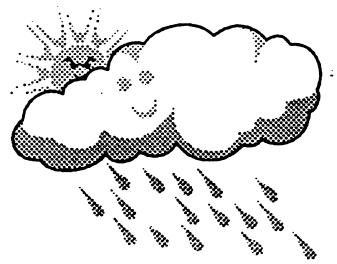
Puncturevine, Goathead, Sandbur. No matter what the name, children without shoes, most outside dogs, and bicycle tires, soon know the presence of this weed. Unfortunately, it readily attaches to the soft soles of most shoes and is too easily brought into one's home where it hides in carpeting and rugs, waiting to vaccinate the bare foot of its next victim.

Known for its dark-green, trailing stems, Puncturevine boasts up to eight small pairs of oval-shaped leaflets. Its strikingly bright, tiny yellow flowers are divided into five petals, and are highly attractive. The spiny fruit and sharp burs break into five sections, with each section sporting up to four seeds. July through October are the seed-bearing months for this weed. The seeds can remain dormant in soil for up to five years and will grow in almost any location: fields, pastures, roadsides, even in cultivated lawns.

This weed is undesirable in hay and may cause injury to livestock. The bur damages wool. The puncture-like wounds in the feet of children/adults and in the pads of dog feet may cause infections to develop.

Eradication of this weed takes persistence. All too often, especially on large tracts of property in Cochise County, this weed is ignored, and the seeds are permitted to develop and spread in abundance.

Peggy Dierking
Master Gardener/Staff Writer



Water Factoids

➢ The human body is more than three-quarters water. Water is essential to existence, not only for people but for plants and animals as well.

➢ Water, when evaporated from the world's oceans by the heat of the sun, leaves its salt behind. Winds blow moisture inland where clouds are formed and some of the water falls to earth as rain or snow. Then, by one route or another, it returns to the ocean.

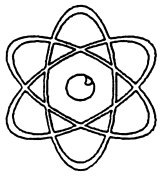
➢ In the Denver area, approximately 500 gallons per day per household are used, and an average of 150 gallons per household are used before breakfast. The average daily use in Canada is 1,090 gallons per person, in Australia it is 876, in Great Britain 185 gallons and in Switzerland they only use 77 gallons per person per day.

–Denver Water Department

The Virtual Gardener–
Alkaline Soils

As I attempt to dig planting holes on my property at this time of year I am reminded once again of just how poor my soil is—at least "poor" in comparison with those beautiful rich, fluffy loams I see in gardening magazines and on television. This prompted me to see what I could dig up about soils on the Internet. My search was rewarded with an excellent Web site maintained by the Cooperative Extension of Colorado State University (**http://www.colostate.edu/Depts/CoopExt/PUBS/pubsmenu.html.**)

Water, as most of us know, is made up of hydrogen and oxygen in a ratio of two parts hydrogen to one part oxygen (hence the famous formula H_2O). At any particular time in a container of pure water, most of the water molecules remain bonded together while a very tiny number break apart into free hydrogen ions (H^+) and free hydroxyl ions (OH^-). Normally there are equal concentrations (about one part in ten million) of each of the hydrogen and hydroxyl ions. A solution with equal numbers of both ions is said to be neutral, but if something upsets the balance and selectively removes either hydroxyl or hydrogen ions, the solution is said to become either acidic or basic (alkaline). Acid solutions have a larger concentration of free hydrogen ions, and alkaline solutions have a larger concentration of free hydroxyl ions.



The relative acidity or alkalinity of a solution is expressed as *pH*, which is a measure of the relative number of free hydrogen ions. The pH scale is a little tricky because it's inversely proportional to the concentration of hydrogen ions, that is, a higher pH number indicates fewer rather than more hydrogen ions. (For the technically inclined, pH is the negative of the base 10 logarithm of the reciprocal of the concentration of free hydrogen ions). A solution with a pH of 7 is said to be neutral. Solutions with pH values higher than 7 are alkaline, and those with pH values less than 7 are acidic. Another twist to the pH scale is that each unit value on the scale indicates a tenfold increase or decrease in the number of free hydrogen ions. For example a solution with a pH of 6 is ten times more acidic than a solution with a pH of 7, and one with a pH of 5 is ten times more acidic than a solution with a pH of 6 and 100 times more acidic than a solution with a pH of 7.

The details of the chemical reactions that determine the pH of soil are complicated, but generally where there is more than about 20 inches of rainfall in a year, the soils tend to be acidic. Where there is less than 20 inches of rainfall in a year, such as here in the High Desert, the soils tend to be alkaline. This is important to the gardener because certain plants—especially those that are most familiar to people who grew up in the Eastern United States where the soils tend to be acidic—are adapted to grow in acidic soils and will not do well in alkaline soils.

Gardeners trying to grow plants in the alkaline soils of Cochise County can pursue two possible strategies. The first is to attempt to alter the pH of their soils by the use of amendments such as sulfur so that they can grow the acid-loving plants they remember from another place. The second is to go native and grow only those plants that are adapted to our alkaline soils. Although attempts to lower the pH of soils can be successful in the short term, they require the repeated addition of huge quantities of amendments to maintain even a small change in pH. Ultimately the gardener will lose to Nature. The better strategy is to leave the soil pH alone and plant only those plants that are adapted to the soils of our area.

Gary A. Gruenhagen, Master Gardener
(gruenha@c2i2.com)

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Call before you dig!
Blue Stake
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June Reminders

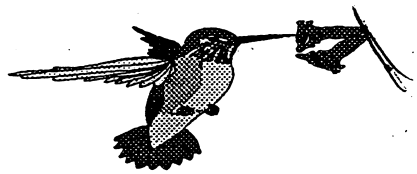
- ✓ Check tree ties
- ✓ Remove stakes if tree can stand alone
- ✓ Mulch trees & shrubs
- ✓ Removed faded flowers & fertilize roses
- ✓ Stake tomato plants & watch for curly top-remove
- ✓ Prevent blossom end rot by even watering
- ✓ Water! Water! Water!

Hummingbird Gardening

I was attracted to hummingbirds two years ago when I planted a lone *Salvia greggii*. It was the only plant in the garden. Two days later I heard this strange whizzing noise, looked around and to my amazement a hummer was feeding at the salvia. Since then I have collected books and plants to attract these jeweled beauties. (The books are for me, not the hummers!) The best time to attract hummingbirds is during spring migration and this hinges on two things: flower nectar and insects. Males arrive before the females searching for food sources and if found will signal to the females and the young to follow. The average life span for females is three and a half years and for males two and a half.

Since hummingbirds need to visit between two thousand and five thousand flowers a day to meet their huge energy needs, it makes sense to supplement the hummingbird garden with feeders. Males can be very territorial and sometimes claim a feeder for themselves so consider hanging a few around the garden and place them out of sight of each other. I put up a feeder about a week before the males show up to ensure that they stick around. I judge the time to put up a feeder by watching the *Salvia greggii* and when it blooms I hang the feeder. When hanging feeders make sure that there is enough air space for the birds to escape from predators. They like to be able to see all around them.

There are dozens of hummingbird feeders on the market so which one is best? I have found that a feeder that is easy to clean and doesn't drip is a good priority. My favorite are glass feeders. Dan True, author



of *Hummingbirds of North America*, has found that a glass hamster water bottle is the favorite feeder in his garden. With our high winds a pan or basin feeder works well because it is almost drip proof. You can combat wind problems by attaching a lead fishing weight from the bottom of the feeder. When buying plastic feeders look for a high grade plastic such as cellulose-acetate-butyrate or acrylics and polycarbonates that can withstand the desert heat. I also find that handwashing plastic feeders will extend their life cycle considerably. My favorite cleaning solution is soaking them in the sink of hot water with dishwashing detergent and white vinegar. The vinegar helps cut down on the soap film making it easier to rinse clean. Please note that vinegar is an acid and can discolor metals.

The ratio for feeder formula is four parts water to one part sugar–do not use honey or red dye in the solution. This produces a solution of 21 percent sucrose, which is the same ratio of nectar found in most hummingbird flowers. In the summer I up the ratio to five parts water/one part sugar. It gives the birds more water in the heat and keeps the solution from gumming up. The solution should be boiled on the stove for two minutes to retard fermentation and then cooled. A large batch can be made and the extra stored in the refrigerator in a glass container. Experts advise against microwaving the solution as the radiation alters the sugar's structure. Feeders should be cleaned and refilled every two to four days.

To control bees on feeders replace yellow bee guards with a red one since bees are attracted to yellow. For ants I find that rubbing lard or Chapstick on the pole keeps them from crossing the barrier. If bats are emptying out the feeders simply take them in every night, but bats eat such large quantities of insects (over 2,000 mosquitoes per night!) it may be worth feeding them also.

The ultimate feeding station would also include pieces of fruit that attract fruitflies and gnats. Next month we'll focus on nesting, plants, and water features that attract hummingbirds.

Cheri Melton
Master Gardener/Staff Writer

The Agent's Observations

Q I have a pear tree that has some bumps on the leaves. Over time the bumps turn into brown spots. Is this zinc deficiency?

A No you do not have zinc deficiency. The damage you see is caused by mites, most likely the pear leaf blister mites (*Phytoptus pyri* Pagenstecher). This mite was introduced from Europe, probably before 1900. It is a pest of most pear growing areas of the world. Feeding by these mites causes damage on leaves and fruit. Blister mites overwinter as mature females at the base of buds or under outer bud scales. Adults are light to amber yellow in color and cylindrical, tapered sharply at the posterior end and resemble a short worm. In spring, when buds begin to swell, overwintering females penetrate deeper into the buds and lay eggs on live tissues. Development from egg to adult requires 20 to 30 days during spring. Feeding of females and their offspring causes blisters on developing leaves. Blisters are green or red at first but turn light brown to black as affected tissue dies. As the blisters form, leaf cells near the center of the blisters die and pull apart as surrounding cells enlarge, creating a hole. Blisters vary in size, with the largest about 1/8 inch in diameter. Mites do not live in the blisters on the fruit, but the fruit will be scarred. Mites of the first spring generation enter blisters through these holes and feed on soft leaf tissue inside. Several generations develop within the blisters during a growing season. Summer generations require only 10 to 12 days to develop. When blisters become crowded or leaves become heavily damaged, mites may migrate to growing terminals where their feeding produces new blisters. Fruit damage is caused by injury to buds before bloom. Severe damage to foliage can cause leaf drop and reduce shoot growth. Look at young leaves before bloom early in the spring just as leaves are unrolling. Noticeable light green to light red rough areas where mites have been feeding will be seen. This damage becomes more noticeable as the growing season progresses.

Pear leaf blister mite
(Eriophyes = Phytoptus pyri)

Control: Blister mites are not normally controlled by natural enemies. Predatory mites will feed on blister mites when they are exposed. Blister mites often attack weak, neglected or abandoned trees. If a pesticide is used to control blister mites the best timing is after harvest when mites migrate from leaf blisters to terminal and fruit buds. They are exposed on those sites until buds swell in the spring. Pre-bloom treatments can prevent fruit damage that occurs just before and during bloom.

Source: *Orchard Pest Management.* 1993. Edited by: Elizabeth H. Beers, et al. Good Fruit Grower Publications, Yakima, WA. Pages 151-153.

Q My mesquite trees have brown round bumps on many of the limbs. In fact some of the branches have ooze dripping from them. Is this scale?

A Yes the problem is scale, soft brown scale in fact. Scale are a "super family" of over 200 insects that feed on plant sap while females protect themselves with a soft or hard "shell" body covering. Males can be winged. Scale produce young by eggs or by bearing live young. The young, called crawlers, may crawl out from under mother's covering and move to another location, usually close by, and then set up "housekeeping." One to five generations will be produced each year depending on the species and environmental conditions. Scale are protected by the covering they make for themselves and it is

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very hard to penetrate with pesticides.

Control: Physical removal by spraying a hard stream of water may work, however many times they are stuck on the plant very tightly. Even rubbing off the scale with a stiff brush can be effective. Using systemic insecticides can help control scale but many times does not work very well. Suffocating or penetrating their "shell" are methods also used to kill this pest. Dormant oil sprays are used when plant leaves are no longer than a half inch in early spring. If used later leaf damage may occur. Rubbing alcohol applied to scale will penetrate their waxy shell covering and kill them. Use 70% isopropyl (rubbing) alcohol, mixing 1 to 2 cups of alcohol per quart of water. Since alcohol can damage some plants first test spray on a small area. Wait for a day or two to see if damage occurred. If not it is safe to spray. You can mix insecticidal soap according to the label directions but substitute rubbing alcohol for half of the water. A recipe that has proven effective in the past for scale control and other insects is made by mixing one cup cooking oil plus 1 tablespoon of dish detergent (non-citrus). Mix one to two teaspoons of this solution with one cup of water. Spray mixture on the infected plant until it drips off. It is best to spray a few leaves and then check for leaf burn the next day before spraying the entire plant. With many of these treatments the scale will not drop off of the plant but will remain attached even though they are dead. Pry some off several days after treatment to determine if the scale are dead. If not treat again.

Robert E. Call
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