



# High on the Desert Cochise County Master Gardener Newsletter

Vol. 17, No. 11 NOVEMBER 2006

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

## The Virtual Gardener—Texas Root Rot

Cochise County Master Gardeners, along with their advisors, University of Arizona plant pathologist Dr. Mary Olsen and Extension Agent Rob Call, recently found a small area in the Plant Sciences Center at the University of Arizona South infected with *Phytmatotrichopsis omnivora*, a plant-killing soil-borne fungus. The pathogen had been suspected when several three-year old pear trees planted in the area died suddenly earlier this year, their dried leaves still clinging to the plants. Microscopic examination of root samples from the dead trees showed a distinctive cruciform network of whitish threads, technically called *hyphae*, on the surfaces of the roots, confirming the diagnosis. The trees had died of Texas (AKA Cotton) Root Rot.

Ordinary gardeners would be dismayed to find their gardens infected with this deadly fungus. The Master Gardeners and their advisors were overjoyed. Here in a controlled

environment they had located an area of proven lethality that can be used to test the resistance of a wide variety of plants to the disease.

Texas Root Rot is a serious problem for both home gardeners and commercial farmers. The fungus lives in alkaline soils that are poor in organic materials (sound familiar?). It can lie dormant in the soil for long periods of time, only making an appearance during the late spring to early fall when the soil is warm and damp, and often causing infected plants to die overnight. Many ornamental plants and agricultural crops are susceptible to the disease. To make matters even worse, there is no effective way of detecting the presence of the fungus in the soil before it begins killing plants; a plant, once infected, cannot be cured; and there is no way of ridding the soil of the fungus once it is discovered.

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Many of our favorite ornamental, fruit, and nut trees as well as other dicots (plants that sprout with two “seed leaves”) are susceptible to the disease, although some desert-adapted plants such as palo verdes, mesquites, desert willows, and prickly pear—all also dicots—are resistant. Grasses and other monocots (plants that sprout with only a single seed leaf) are immune. For more information about Texas Root Rot and the susceptibility of plants to the disease, check out <http://ag.arizona.edu/pubs/diseases/az1150.pdf> for a bulletin written by Mary Olsen. Another good article on Texas Root Rot, written by John Begeman, Extension Agent for Pima county, is at <http://ag.arizona.edu/gardening/news/articles/14.2.html>

Under the tutelage of Dr. Mary Olsen, Cochise County Master Gardeners are conducting a trial to determine the susceptibility of various landscape plants to the disease. On October 11 Cochise County Master Gardeners planted a total of 30 plants (5 of each of the following: Eldarica Pine, Plains Lovegrass, Escarpment Oak, African Sumac [*Rhus lancea*], Pomegranate, and Texas Ranger [*Leucophyllum frustecans*]) in the infected area of the Plant Sciences Center at the University of Arizona South. Typically plants sicken and die in the third year after they are planted. Plants surviving their third year in the ground will be judged to be resistant to the disease.

Thanks to Master Gardeners Dave Barry, Deke and Peggy Descoteaux, Anita Gollwitzer, Carolyn and Gary Gruenhagen, De Lewis, Penny Artio, Rosemarie Burke, Jim Byrum, Dave Crandall, and David Davis for their help in planting the sacrificial plants.

Until next time Happy Surfing.

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## November Reminders

- ◆ This is a good time to install a drip system
- ◆ Replace summer mulch with fresh mulch
- ◆ Start a winter herb garden
- ◆ Protect plants from frost (The bulletin Frost and Frost Protection is available from the Cooperative Extension offices.)

## High on the Desert

The 14<sup>th</sup> annual High Desert Gardening & Landscaping Conference will be held at The Palms, 255 W. Wilcox, Sierra Vista, AZ on February 15 & 16, 2007. The conference will feature 22 speakers over the two days. These experts will be covering “everything you want to know and more” about High Desert gardening. Registration forms will be available in the January 2007 newsletter, on-line at the Web Site, or at the Cooperative Extension office after January 1st. For more information call the Cooperative Extension at 458-8278, Ext. 2141.



*Robert E. Call*

Robert E. Call  
 Extension Agent, Horticulture

Carolyn Gruenhagen  
 Editor

## Tabletop Greenhouse Speeds Propagation

Southern Arizona's climate proves challenging for growing plants from seeds or cuttings. Seeds may germinate successfully only to produce seedlings unable to withstand dry spring winds and nighttime temperatures near freezing. Our annual monsoon, which features warm temperatures, plenty of precipitation, and a mix of sunshine and cloud cover offers ideal conditions for propagating young plants outdoors. But what if gardeners can't wait for summer rains to satisfy their green thumbs?

Plant propagation can occur any time of year with a tabletop greenhouse. Gardeners can assemble their own from available materials, or purchase a well-constructed seed-starting system like the one pictured. This lightweight unit occupies no more space than a standard placemat and can be moved easily to areas of the house with incoming sunshine. Plants will grow evenly if the container is rotated occasionally near south- or west-facing windows, which usually provide ample light in our climate. "Grow lights," or special lights with full-spectrum fluorescent bulbs may be suspended 6 to 12 inches above the container where natural light is unavailable.

Gardeners may select easy-growing seeds such as nasturtium,

marigolds, and cosmos to prepare for bedding season. Tomato and basil seeds provide a good head-start for a kitchen garden. In this example, cuttings of miniature climbing roses were obtained in early spring just as the leaf buds began to expand but before any leaflets unfurled. These plants were selected for their hardiness and impressive floral displays, and because it is not easy to locate a variety of mature miniature climbing roses in our area.

Growing medium can be sterilized potting soil mixed with additional perlite or vermiculite to provide aeration and retain more water. Gardening supply companies offer germinating mix, transplanting mix, and different cell trays for seed-starting systems.

For the rose cuttings a 15-cell tray was filled with the moistened soil mixture and allowed to drain outside. Rose cuttings were obtained using sharp clippers

sterilized with nine parts water and one part bleach. A total of 45 six-inch medial stem cuttings were taken from three different varieties of miniature climbing roses. Each cutting was immediately placed right side up in a glass of water and then dipped into a rooting hormone. A Popsicle stick was used to bore holes in the soil so that the root hormone would

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## Cuttings 'N' Clippings

\* The next CCMGA meeting is 5:00 p.m. Thursday, November 2, 2006 at the University of Arizona South campus, Room 505. The guest speaker will be Ted Mouras, with a talk on the San Pedro Riparian Area.

\* The free November Water Wise workshop will be held on Saturday November 4 from 9:00—11:30 a.m. at the UAS campus. The title is *Septic: Care and Well Water Quality*. Keeping systems working properly and well water safe is important. Dr. Kitt Farrell-Poe and Janick Arliola from the University of Arizona will talk about testing for water quality and how to care for septic systems. For more information contact Cado Daily at 458-8278, Ext. 2139.

\* Sierra Vista Farmers Market's New Winter Hours: Due to popular demand, the Sierra Vista Farmers Market will be open the first Thursday of each month this winter. The winter schedule with earlier hours will begin with the market on Thursday, November 2 from noon to 4:00 p.m. Lots of unsprayed fall produce, healthy meats, farm eggs & wild fish, desert health foods, honey, fair-trade coffee, pickles and preserves, baked goods, herbal remedies and healthy body care will be available. The market is held on the NW corner of Wilcox and Carmichael. For more information e-mail vallimac@cox.net or call 266-1976.

## High on the Desert

# High Desert Gardening & Landscaping Conference Scholarship Application

The Cochise County Master Gardeners Association (CCMGA) is awarding up to three full scholarships to the 2007 High Desert Gardening & Landscaping Conference to be held at The Palms, 255 West Wilcox Street, Sierra Vista, AZ, February 15 & 16, 2007. Applicants are invited to submit an essay on one of the following topics:

- Gardening for food production
- Landscaping with native plants
- Environmental stewardship

Essays must meet the following criteria:

1. 750 to 1,000 words in length.
2. Double spaced and typed on plain bond paper — if possible a disk or CD included.
3. Represent original scholarship and be suitable for publication. All references and authorities cited must be properly attributed.
4. Entries must be accompanied by an official cover sheet available from the Cooperative Extension Office at the University of Arizona South campus or from the web site: [www.ag.arizona.edu/cochise/mg](http://www.ag.arizona.edu/cochise/mg)
5. Entries must be received at the Cooperative Extension Office, 1140 N. Colombo, Sierra Vista, AZ 85635 not later than close of business on January 15, 2007.

Entries will be judged by the Cochise County Horticultural Extension Agent and a committee of Master Gardeners appointed by the President of CCMGA. The awardees will be notified not later than January 26, 2007 and their names published in the February 2007 Master Gardener Newsletter.

## Bear Alert!!!

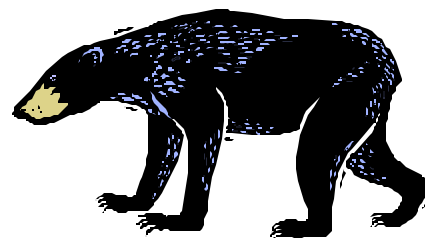
The prolonged drought has reduced the available food and water bears traditionally use. Because of this lack of food and water, the potential for bear/human interaction is high. To help protect both the public and bears, all homeowners are urged to remove all available food and water from the exterior of their residences.

One of the most important issues is garbage. Please adopt the practice of placing your garbage containers outside on the morning of pickup rather than the evening prior to pickup. Don't give bears the opportunity to dine on your garbage. All food and food containers should be stored inside.

Additionally, all feeders should be emptied each night and placed well away from buildings, inhabited or not. This is particularly important for pet and hummingbird feeders.

We request that you help get the word out to your neighbors and homeowners that are not participating in safe food and water management.

- Arizona Fish and Game



**REMEMBER:  
A Fed Bear is a  
Dead Bear!**

## The Agent's Observations

**Q** I heard that kudzu vines were found in Cochise County. Can I get some kudzu vines and plant them? It seems to grow very well and might be a good forage for my horses and grow to cover a trellis to provide shade to our home.

**A** Yes, kudzu is growing along Highway 90 in Cochise County. Arizona Department of Agriculture is aware of these plants and is planning on destroying them. You do not want kudzu on your property. It is a fast growing weedy vine that will cover not only your trellis but your home and anything that does not move! This is its down fall! If there was ever a plant on "steroids" this is it! Kudzu (*Pueraria lobata*, also *P. montana*, *P. thunbergiana*), is one of about 20 species in the genus *Pueraria* and is in the pea or legume family Fabaceae. It is native to southern Japan and southeast China. The name comes from the Japanese word meaning vine. The other species of *Pueraria* occur in southern southeast Asia. It is a climbing, woody or semi-woody, perennial vine and when climbing trees is capable of reaching heights of 66-98 feet. It also can cover lower vegetation and shrubs. It is deciduous with three broad leaflets that are alternate and compound. The leaflets may be entire or deeply 2-3 lobed, and are pubescent underneath with hairy mar-

gins. The flowers are long with about 30-80 individual blooms on a long panicle and are purple and highly fragrant. The flowers are copious nectar producers and are visited by many species of insects. The non-woody parts of the plant are edible. The young leaves can be used for salads or cooked as a leaf vegetable and the flowers can be battered and fried (like squash flowers). Kudzu roots are fleshy, with massive tap roots 4-8 inches or more in diameter, and may obtain 3-6 feet or more in length, and may weigh several hundred pounds. As many as thirty stems may grow from a single root crown. The starchy tuberous roots can be prepared as any root vegetable. Kudzu grows best where winters do not drop below 5°F and average summer temperatures are regularly above 80°F. Kudzu grows best where annual rainfall is 40 inches or more and sunlight is abundant. In areas where winters drop below 5°F, it will be killed to ground level, but the roots may send up new growth in the spring. Once established, kudzu plants grow rapidly, extending as much as 60 feet per season at a rate of about 12 inches per day. Branches of this vigorous vine may extend 30-100 feet in length with basal stems 1-4 inches in diameter. Kudzu is sometimes referred to as "the plant that ate the South," a reference to how kudzu's explosive growth has been most prolific in the southeastern United States due to nearly ideal growing conditions. The only environmental factor affecting the

spread of kudzu in Southeastern Arizona is the lack of rainfall. Significant sums of money and effort are spent each growing season to prevent kudzu from taking over roads, bridges, power lines, and local vegetation. **Control:** For successful long-term control of kudzu, the entire root system must be destroyed. If any root crowns remain, the plant will grow back. Mechanical methods involve cutting vines just below the ground then destroying all cut material. Close mowing every month or regular heavy grazing for two growing seasons or repeated cultivation may be effective. Cut kudzu can be fed to livestock, burned, or enclosed in plastic bags and sent to a landfill. If done in the spring, cutting must be repeated as re-growth appears to exhaust the plant's stored carbohydrate reserves. Late-season cutting should be followed up with immediate application of a systemic herbicide to cut stems to encourage transport of the herbicide into the root system. Repeated applications of several soil-active herbicides have been used effectively on large infestations in forestry situations. Efforts are being organized by the U.S. Forest Service to search for biological control agents for kudzu. Currently a particular fungus is being tested.

**Source:** <http://en.wikipedia.org/wiki/Kudzu>

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adhere to the stems during planting. Three cuttings were planted per cell and watered lightly from above.

The commercial seed-starting system is equipped with a platform that is placed on a water reservoir base, a capillary mat, and a clear plastic dome cover—all the ingredients of a mini-greenhouse. Once the reservoir is filled with water, the capillary mat draws water from the tray up onto the platform. The cell pack, once planted with cuttings or seeds, is placed directly on the capillary mat, which will

continue to transport water from the reservoir through holes in the bottom of the cells. Once the dome cover is placed tightly on top and the air vents are opened, a tabletop tropical environment is set in motion. Water can be added to the reservoir periodically through an easily accessed opening as needed.

The clear dome cover makes observing germination and new foliage growth fun and effortless. Checking for root growth can be done periodically when lifting the cell pack tray to moisten the capillary mat. Once young plants are established, a diluted solution of liquid fertilizer can be added to

the water reservoir. Hardening young plants should be done slowly, placing them outside just a few hours each day for one or two weeks. After gradually exposing the plants to sun and wind, they will be ready for transplanting to the garden or larger pots.

The plastic parts of a seed-starting system can be rinsed with water and placed in the dishwasher for sterilization, while the capillary mat should be soaked in a diluted bleach solution.

*Diane T. Liggett  
Associate Master Gardener*

## High on the Desert

**High Desert Gardening & Landscaping Conference  
February 15 & 16, 2007**