



The Virtual Gardener—Wanted Dead or Alive

When I was growing up, I remember being fascinated by the “wanted” posters displayed in the post office. The scowling faces of suspected criminals wanted for heinous crimes were frightening to behold. This month I want to talk about wanted posters but not ones displayed on the wall at the post office. The ones I want to discuss are posted on websites, and the “criminals” they portray pose threats far greater than any outlaw as I discovered last April when I attended a “First Detector” training class.

The class that I and several other Cochise County Master Gardeners attended was designed to teach us how to interact with a national threat detection system called the **National Plant Diagnostic Network** (NPDN). The NPDN was created in the wake of 9-11 as a part of the effort to protect the national food supply against manmade and natural threats by quickly detecting threats, identifying them, and reporting them to appropriate responders.

Of course, in addition to learning how to report threats, first responders

need to be informed of potential threats to be on the lookout for. And that’s where the “wanted posters” come in.

The latest edition of the quarterly **newsletter** for first detectors published by the regional component of the NPDN—the **Western Plant Diagnostic Network** (WPDN) at the University of California, Davis—describes two insect threats and provides a link to a new website created by the USDA Animal and Plant Health Inspection Service (APHIS), the agency charged with protecting American agriculture.

The new threats described in the newsletter, the Brown Marmorated Stink Bug (*Halyomorpha halys*) and the Red Palm Weevil (*Rhynchophorus ferrugineus*), are interesting to read about and only of academic interest to us at this point. Neither of them has been reported in Arizona so far but the stink bug has spread to 29 states including Oregon and the weevil has been found in California. We need to be vigilant because if introduced here, both

(Continued on page 2)

Inside this issue:

Cuttings 'N' Clippings	2
February Reminders	2
More Sources	3
Composting & Mulching	4
Did You Know . . .	4
Agent's Observations	5
Free Workshops	6

Cochise County Cooperative Extension

www.ag.arizona.edu/cochise/mg/

1140 N. Colombo, Sierra Vista, AZ 85635

(520) 458-8278, Ext. 2141

450 S. Haskell, Willcox, AZ 85643

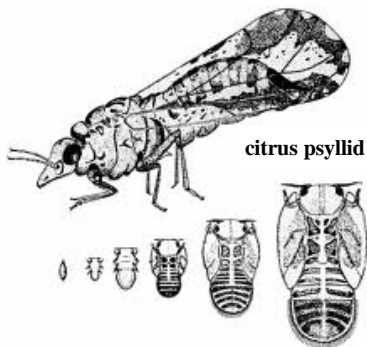
(520) 384-3594

(Continued from page 1)

could cause damage to us. Take a look at the newsletter for more information about them.

The third item of note in the WPDN newsletter is the reference to the new APHIS website. This [website](#), called *Hungry Pests*, contains lots of interesting information about invasive pests and their control as well as suggestions for how you can help in the fight against them. Check it out and see what threats have been identified.

To find out what threats have been detected in Arizona and read more about them, click on the "[See Where Pests Are](#)" link in the *I Want To...* box and then click Arizona on the map. You will see that we have an active Federal Quarantine Area in Yuma County for the Asian Citrus Psyllid (*Diaphorina citri*), a pest from south Asia that can infect citrus trees with a fatal disease and potentially seriously damage our citrus industry. The insect has been reported in 10 states and citrus greening disease has infected trees in four states (thankfully Arizona is not one of them). But



citrus psyllid

Robert E. Call

Robert E. Call
Area Horticulture Educator
Carolyn Gruenhagen
Editor

on January 4, this year, a live citrus psyllid was discovered at the Nogales port of entry on citrus leaves being imported from Mexico according to an article in the Sierra Vista Herald of January 19. Stay tuned.

Other potential threats identified for Arizona include the Gypsy Moth (*Lymantria dispar*), Light Brown Apple Moth (*Epiphyas postvittana*), and Mexican Fruit Fly (*Anastrepha ludens*). You can read more about them on the APHIS website and find out where they have been detected in the United States on the interactive [Pest Tracker map](#).

You too can play a part in controlling these threats. How? First, periodically check the "wanted posters" on the websites so that you know what to look for. Second, report the suspected presence of any of the pests described on the websites to a Master Gardener or the Cooperative Extension Office.

Until next time, happy surfing.

Gary A. Gruenhagen, Master Gardener
virtual.gardener@cox.net

February Reminders

- ◆ Winter prune
- ◆ Prune roses
- ◆ Cold-moist stratify seeds
- ◆ Plant bare-root trees
- ◆ Prepare spring planting beds
- ◆ Clean and repair drip irrigation systems
- ◆ Finalize spring garden plans
- ◆ Keep watering!

Cuttings 'N' Clippings

✱ The next CCMGA meeting is 5:00 p.m. Thursday, **February 3** at the University of Arizona South Campus Public Meeting Room. Area Horticulture Educator, Robert E. Call will present a lecture on *Ten Steps to a Great Vegetable Garden*. He will cover the proper location, layout, good variety choices, soil preparation, planting, irrigation, mulching, pests, problems, and harvesting. Everything you want to know about veggie gardening!

✱ On **February 5**, 9:00—noon the free Water Wise presentation takes place at the University of Arizona South Campus Public Meeting Room. "*Well, What Do We Know?*" is the title. Come learn about well maintenance, water quality testing, and drinking water contamination. Presenters are Kristine Uhlman, RG and UA NEMO Program, Dr. Janick Artiola, UA Water Quality Specialist.

High on the Desert

The **18th High Desert Gardening & Landscaping Conference** will be held **February 17 & 18, 2011** at the Windemere Hotel & Conference Center in Sierra Vista. For information contact the Cooperative Extension at (520) 458-8278, Ext. 2141 or ag.arizona.edu/cochise/mg.

2011 Master Gardener Class

The 13 week course begins March 2—there is a fee. For information contact the Extension Office at (520) 458-8278, Ext. 2141

✱ There were no applications for scholarships to the High Desert Gardening & Landscaping Conference.

More Seed Sources and Resources

In the January 2010 issue of this newsletter, there is an article listing a number of sources for seeds, plants and other vegetable garden supplies. In the June, 2010 issue, there's an article that discusses some garden resources. This month, I'd like to add to both of them.

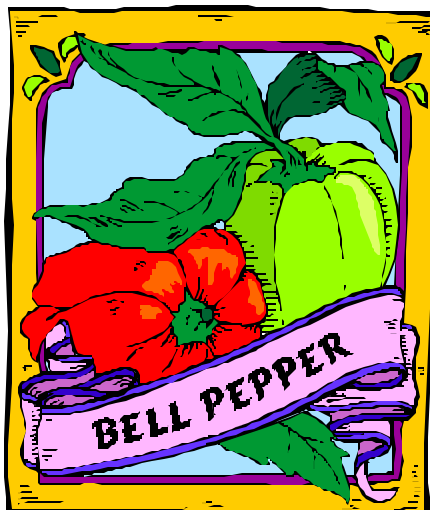
First, another resource: Dave's Garden. Dave's Garden is, by its own description, an informational website where a large, international community of gardeners can learn from each other and find resources offered by the gardening community. Some of the website content is free; other portions require membership, which costs \$19 per year, or \$5 for a two month trial period. Dave's has many dozens of Discussion Forums, covering topics ranging from tomatoes or peppers, to African violets or rhododendrons, to gardening in the American Southwest or Australia. You can post questions in these forums, complete with the ability to easily upload photos. You can also view fellow gardeners blogs and journals and a whole lot more. I've found it to be a very handy source of information; check it out at <http://davesgarden.com/>.

Now, some more seed sources. These tend to be small businesses, many of them specializing in old and rare vegetable varieties.

Gleckler Seedmen A small outfit specializing in (very) uncommon pepper, tomato, and watermelon seed. Online at

<http://www.glecklerseedmen.com/>, their address is 11411 State Route 120, Lyons, OH 43533.

Morningsun Herb Farm. Morningsun is a California company specializing in herbs, although



they do sell some vegetables. They sell plants, not seed, and they carry very many hard-to-find varieties. Online at

<http://www.morningsunherbfarm.com/ssp/home>, their address is 6137 Pleasants (sic) Valley Road, Vacaville, CA, 95688.

Pepper Joe's. A small, specialized source for hot pepper seeds, including new varieties said to be more than twice as hot as the habanero. Can you say "capsaicin"? Or AAHHHH! Online at

<http://www.pepperjoe.com/>, their address is 725 Carolina Farms Blvd, Myrtle Beach, SC 29579.

Reimer Seeds. A North Carolina based supplier of vegetable, herb and flower seeds, they say they offer over 700 tomato varieties and 2,100 varieties of hot peppers! Online at

<http://www.reimerseeds.com/>, their address is PO Box 236, Mount Holly, NC, 28120-0236.

Sand Hill Preservation Center. You never knew there were so many sweet potato varieties; Sand Hill lists well over 100! Sand Hill is a small, family run business in Iowa dedicated to the preservation of our genetic resources. They are strictly organic and offer many heir-

loom vegetables and poultry. Online at

<http://www.sandhillpreservation.com/index.html>, their address is 1878 230th street, Calamus, Iowa, 52729. (I've never heard of Calamus, but they apparently have at least 230 streets!)

Seeds of Change. A certified organic supplier of vegetable, herb, and flower seeds, they also sell garden supplies and some old time apple varieties. Online at <http://www.seedsofchange.com/>, their address is PO Box 152, Spicer, MN 56288.

Southern Exposure Seed Exchange. A Virginia based company, strictly organic, selling vegetable, herb and flowers seeds, along with some garden supplies. Online at

<http://www.southernexposure.com/index.php>, their address is PO Box 460, Mineral, VA, 23117.

Steele Plant Company. A small, family owned company specializing in sweet potatoes and onions. Online at

<http://www.sweetpotatoplant.com/>, their address is 202 Collins Street, Gleason, TN 38229.

Tatiana's Tomatobase. A small Canadian outfit dedicated to preserving heirloom and open pollinated vegetables, with an emphasis on tomatoes, of which they have over 600 varieties. Tatiana's was the only place I could find seed for an unusual tomato variety for which I was searching. Online at

http://t.tatianastomatobase.com:88/wiki/Main_Page, their address is 110 Lanson Crescent, Anmore, BC, V3H 4X6, Canada.

Terroir Seeds/Underwood Gardens. A small, family owned,

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Composting and Mulching Your Garden

Increase the fertility of your soil by composting and mulching your garden.

Soil is one of the most important factors in a healthy garden. The quality of one's soil determines the types of plants that will grow, and the overall health and success of the harvest. Healthy soil leads to a healthy population and planet. That is why it's important to add beneficial organisms to your soil thereby increasing its vitality. Organic methods of increasing the fertility of your soil include many forms of composting, mulching, mixing in animal manure, planting legumes, and intermixing different types of complementary plants to aid in the pollination and growth of their neighbors. Using these methods along with a regimented schedule of deep watering will create a bountiful garden for all. The two methods further discussed in this article are composting and mulching.

Compost is the accelerated process of breaking down organic materials into humus. Humus is dark colored soil organic matter. Humus represents the decomposition products of organic residue and materials synthesized by microorganisms. This includes anything from food waste to cotton t-shirts to human waste. Microorganisms will do the

work for you. Microorganisms are microscopic organisms like bacteria and fungi that will feed on organic material and break it down into simpler substances that are then used as nutrients for your soil. Composting can be achieved in both aerobic and anaerobic environments (for anaerobic composting look into bokashi buckets). Most people use the aerobic styles of composting which requires a certain amount of oxygen, temperature, and moisture.

Vermicompost or worm compost is a great way to create very rich humus for soil. A simplified model for vermicomposting includes first taking a Styrofoam container about two feet long, and one foot wide and adding a layer of sawdust, or peat moss or newspaper. Second, add a layer of shredded newspaper scraps. Third, add a handful of red wiggler worms. Fourth, add a handful of sand and a handful of soil and then a layer of compost from your kitchen. Water the worms and continue to add compost and water weekly. In three months you will have worm castings or worm compost—a very rich source of nutrients for your garden.

Mulching is very important in the desert landscape of southern Arizona. Mulching traps moisture and evaporation and decreases the rate of salinization which is the ma-

ior problem associated with water in Cochise County. One effective mode of mulching is to dig a trench around the seed so that water funnels down into the center and then add layers of newspaper, cardboard, and straw around the seed, with about two inches of soil available around the seed. This will keep weeds from growing, increase the growth of microorganisms, and keep water from evaporating on the ground surface.

Another effective way of trapping moisture in this environment is to build raised beds as you would normally. Rather than fertilizing and planting in the raised beds, double dig your irrigation canals and add your fertilizer and seeds to those instead. This will naturally send water downward toward your seeds. Since water is a scarce commodity it is important to utilize the most efficient styles when designing your garden.

Nature provides all the design tools necessary. Using the tools (like mulching) and methods of cycling nutrients (like composting) found in nature, gardeners find easy and cost efficient methods of producing a bountiful and beautiful garden.

*Meggen Connolley
Associate Master Gardener*

Did You Know . . .

Over the years the Master Gardeners of the Cochise County Master Gardeners Association (CCMGA) have identified and labeled over 100 plants on the UAS Campus. Recently, a committee with Steven Fletcher as the Chairperson, has produced a brochure identifying and locating these many specimens. The bro-

chure identifying the University of Arizona South Botanical Garden Plant List is funded by CCMGA and in the process of being published. It will be available at the High Desert Gardening & Landscaping Conference on February 17 & 18 as well as



Trichocereus 'Flying Saucer'

the pruning demonstrations on February 19. Following that, it will be available on campus for self-guided campus tours. The public is invited to pick up a brochure and take a look at the variety of mostly low water use plants that do well in the High Desert. More information is available on the Sierra Vista Area Plant List on line at www.ag.arizona.edu/cochise/mg/ click **Desert Gardening** and then **Sierra Vista Plant List**.

The Agent's Observations

Q In your newsletter article last month you answered a question about tillage equipment that can be used behind a tractor to work the soil. What are the components of a tractor's "business end" and what are they used for?

A The back end or "business end" of a tractor can be used with many implements/tools to aid in farming. (To help clarify the descriptions below please refer to the illustration.) Several common tractor components will be presented. First of all there is a towing hitch, much like those found on pickup trucks. Next is a "3-point hitch" to which implements are attached. It is composed of two "lift arms," located on each side, and a "center link." The center link is located centrally above the lift arms, behind the driver's seat. It has a large turn-buckle to adjust the position of an implement. They form a triangle configuration. The lift arms normally have sway chains or bars attached to them so they move side to side a little or not at all. At least one of the lift-arms has a screw adjustment to level the attached implement. Implements are attached to the tractor at these three points. Each point has an "eye" through which a lynch pin is passed attaching the implement. Eye openings and the lynch pins come in different sizes known as Category I, II, III, or IV, but most small and medium horsepower tractors use the first two. The lift arms can be raised and lowered by adjusting a handle normally located on the right side of the operator's seat, thus moving the implement up and down. Also, the "draft" handle can maintain a constant depth of an implement. A "draw bar" can be attached between the two lift arms' eyes and fitted with a towing ball or a lynch pin to pull wagons, carts

or other equipment. Most tractors come equipped with a "power take off" or PTO. The PTO is a splined shaft coming from the gear box of the tractor. Typically the maximum operating PTO speed is 540 RPMs. Variations can be made by changing tractor gears. Typical tractors have a high and low gear range and four gears, plus reverse, for a total of ten gears. Of course, there can be many variations of gearing. A PTO shaft is attached to the splined tractor shaft and to an implement. The shaft will cause an implement like a till, mower or sprayer to do its appointed work. PTO shafts are the most dangerous part of tractors. Getting clothing or long hair caught in them can cause much physical damage as one can be thrown around like a rag doll! PTO shafts have covers on them as a safety precaution. Never ever remove

them! Most, but not all tractors come equipped with a hydraulic system. There are a pair of hydraulic ports to which two hoses are attached, one for out-flowing and the other for in-flowing hydraulic fluid. Tractors may have one to eight pairs of hydraulic ports, depending on the size of the tractor. Pressurized hydraulic fluid can operate a number of useful implements/tools that are very useful for farming operations. When purchasing a new or used tractor some thought needs to go into what work will be required of the tractor so the appropriate implements can be used. This will determine which components will need to be available to allow the implements to do their appointed tasks.

Robert E. Call
Area Horticulture Educator



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Late fee waived —if
registration and payment is received
at the Cooperative Extension Office
by February 14!

High on the Desert

February 17 & 18, 2011

458-8278 Ext 2141 or

www.ag.arizona.edu/cochise/mg/

Click here for registration form!

(Continued from page 3)

Arizona based company dedicated to preserving heirloom and open pollinated varieties of vegetables, herbs and flowers. They also sell garden supplies and books. Online at

<http://www.underwoodgardens.com/>, their address is PO Box 4995, Chino Valley, AZ 86323.

Territorial Seed. A fairly large supplier offering seed and plants for vegetables, fruits, herbs, plus gardening and canning supplies. Online at

<http://www.territorialseed.com/>, their address is PO Box 158, Cottage Grove, OR 97424.

Tomatofest. A California based, family run outfit that sells over 600 heirloom tomato varieties, plus some gardening supplies. Online at <http://www.tomatofest.com/>, their address is PO Box 628, Little River, CA 95456.

Free Workshops!



Willhite Seed. A Texas firm that deals in vegetable seed and garden products. Located online at <http://www.willhiteseed.com/index.php>, their address is: PO Box 23, Poolville, TX 76487-0023.

Happy Planting!

Bill Schulze, Master Gardener

Fruit Tree Pruning Demo

A free workshop will be given **Saturday, February 19** from 10:00—Noon by Area Horticulture Educator, Rob Call. The location is 4608 S. Shoshoni Ave. Sierra Vista. South on Highway 92 approximately 3 miles past the Mall, West (right) on Choctaw. After one-half mile, turn South (left) on Shoshoni to address. Park along the side of Shoshoni.

Rose Pruning Demo

Another free workshop will be given **Saturday, February 19** from 2:00—4:00 p.m. by Cochise County Master Gardeners. The location is the UA South Rose Garden, 1140 N. Colombo, Sierra Vista. Bring your pruners and practice what you learn! For more information on either workshop call the University of Arizona Cooperative Extension at 458-8278, Ext. 2141.