



High on the Desert Cochise County Master Gardener Newsletter

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

The Virtual Gardener—Pressure Treated Lumber Revisited

Last month I wrote about the dangers of using wood treated with chromated copper arsenate (CCA). A number of readers were kind enough to point out that the use of copper arsenates for the treatment of lumber was banned for residential use by the Environmental Protection Agency (EPA) in 2003 (see <http://www.epa.gov/oppad001/reregistration/cca/>). Although I was answering a question about gardening in soil that had been in contact with old pressure treated lumber for several years—lumber that had presumably been treated with CCA—I should have picked up on the EPA ban in my research and reported it last month. But I didn't.

Interestingly, my searches for information about the use of pressure treated lumber around vegetable gardens only turned up information about the dangers of using lumber treated with copper arsenate and no mention at all of the new treatments that do not contain arsenic. This may be because the newer treatments are benign or because little or no research has been done on their biochemistry with respect to plants. I suspect the latter. I did read, however, that nails used in wood treated with one of the newer

chemicals should be hot-dipped galvanized or stainless steel because the stuff will "eat" regular nails. Hmmm!

Newer treatments include alkaline copper quaternary (ACQ), Polybor (disodium octaborate tetrahydrate), copper azole (CA-B), and others. The newer treatments are not supposed to pose a hazard to humans, but be aware that they are all pesticides and words ending in *-cide* (from Latin verb *caedere* = to slay) all refer to killing something. Whether that something is a bug, fungus, or plant is irrelevant. We do not fully understand the chemistry of life and are often surprised by interactions between chemicals and living organisms that we never suspected to exist. Witness the unexpected affects on humans of Agent Orange, an herbicide and defoliant used during the war in Vietnam.

So, as I concluded last month, it's up to you to decide whether to use the treated lumber in your vegetable garden or not. *Caveat utilitor!* Redwood or cedar is a safer choice.

Until next time, happy surfing.

Gary A. Gruenhagen, Master Gardener
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Cuttings 'N' Clippings

* The next Water Wise event is on **August 1** from 9:00 a.m.—11:00 a.m. in the Public Meeting Room on the UAS campus. *Nifty Natives With Petey Mesquitey!* “Petey” A.K.A. Peter Gierlach of Spadefoot Nursery and with national supplier, Mountain States Nursery, will have you hooked on natives before you know it! He is highly knowledgeable and highly infectious in his presentation. Plants will be for sale after the talk. For information, call the Cooperative Extension Office at 458-8278, Ext. 2141.

* The next CCMGA meeting is 5:00 p.m. Thursday, **August 6** at the University of Arizona South Campus Public Meeting Room. Rob Call, Extension Agent, Horticulture will speak on *Horticulture in China* following a recent trip to the country.

* **September 6**, 1:00—4:00 p.m. is the date for the next Xeriscape Garden Tour sponsored by *Water Wise* and the Cochise County Master Gardeners. Call the Extension office (458-8278, Ext. 2141) for maps that will be available mid-August for this **FREE** tour. Docents will be at each yard to answer questions and plant lists will be available.

Robert E. Call

Robert E. Call
Extension Agent, Horticulture

Carolyn Gruenhagen
Editor

Home Canning—Do it Correctly—Part 1

Summer's here and the garden is exploding with fruits and vegetables (OK, that may be a wee bit of an exaggeration).



What to do with all of this bounty?

Why, can it, of course! A jar of homemade tomato sauce or raspberry jam from your own garden will brighten the dreariest of winter days.

Well...a recent disaster that a friend experienced reminded me that, like so much else in life, one has to be careful about following the rules. In this particular case, my friend didn't can her home grown green beans properly. She canned quite a few quarts of fresh green beans, and not too many days later, each and every jar exploded, leaving her pantry a smelly, sticky mess. Thankfully, no one had eaten any so no one got sick...or worse.

Her mistake? She canned the beans in a boiling water bath instead of using a pressure canner. Low acid foods like meat, poultry, fish, mushrooms, and most vegetables must be processed in a pressure canner which ensures that the temperature of the canned product gets high enough to kill harmful organisms and toxins that can survive ordinary boiling temperatures in a low acid environment. If the temperature doesn't get high enough to kill all of the bacteria and other organisms these organisms produce gases that eventually build up to high enough pressures, and...BOOM. Broken glass and food all over the pantry.

Worse yet, someone gets sick from Aunt Fanny's prized canned beets.

Improperly canned food can harbor many bad things. Perhaps the worst is a bacteria called *Clostridium botulinu* which can produce a food poisoning known as botulism. Botulism can be fatal. The bacteria and its spores, which produce the toxin that causes botulism, thrive in a low acid, moist, anaerobic (no oxygen) environment, which unfortunately perfectly describes the environment in a canned product. Proper processing not only kills these and many other bacteria but also yeasts, fungi, and other toxins. High temperature processing also destroys natural enzymes in the food. If active, these enzymes can produce undesirable flavors, textures, and colors in your home canned product. Destruction of these enzymes is the reason for blanching many vegetables before freezing, as freezing alone does not destroy enzymes. Generally speaking, blanched vegetables last longer and stay fresher in the freezer than do unblanched vegetables.

Let's review a few canning basics to help you can your produce correctly. First of all, get a good canning book and follow the procedures and recipes to the letter. *The Ball Blue Book* (published by Alltrista Consumer Products and widely available) has been a home classic for many decades and it contains all of the canning information you need, plus a wealth of recipes for nearly every garden product you can imagine. It

(Continued on back page)

Grand Opening of Farmers Markets

It's been a cool pre-monsoon season, but a hot one for new farmers markets in Cochise County: one in Douglas (May 31) and one St. David (June 27). The Cochise County Master Gardener Association (CCMGA) was present for both.

The Douglas market is held in the beautiful Raul Castro park under the cover of large shade trees. The St. David market has the distinction of being the only farmers market in Arizona to be held at a school (St. David Schools), in this case under the protection of the large solar ramada. Both had live music for entertainment.

Happily, attendance was good, considering they were new events. It was encouraging to see how far many vendors traveled to be at the Douglas market and to see the strong local vendor presence at St. David.

The CCMGA booth was busy at both events, distributing information, trying to answer questions, and sharing experiences with other Cochise County gardeners. We will try to supply booths at these markets periodically going forward.

The markets are being held weekly: on Saturdays for St. David and Sundays for Douglas. Hours are 9:00 a.m. to 1:00 p.m. for both.

Special thanks to Bill and Vicky Schulze for working the booths at both markets and Rick Thomas for his help at Douglas.

Bret Galloway, Master Gardener



Bret Galloway, Vicky Schulze,
& Valerie McCaffrey at
St. David Farmers Market

Local Farmers Markets:

- ◆ **Correction:** Elfrida Farmers Market is Fridays from 9:00 a.m. to 1:00 p.m. in the Elfrida Community Garden located just north of Elfrida off of Hwy 191 behind the clinic.
- ◆ Sierra Vista Farmers Market is held Thursdays from noon to 4:00 p.m. on the NW corner of Carmichael and Wilcox.
- ◆ Bisbee Farmers Market is held Saturdays from 8:00 a.m. to noon in Vista Park in Warren.
- ◆ Douglas Farmers Market is open Sundays from 9:00 a.m. until 1:00 p.m. in Raul Castro 10th Street Park.
- ◆ St. David opened a new Farmers Market on June 27. It is held from 9:00 a.m. to 1:00 p.m. on Saturdays at the St. David School's solar ramada area just off Hwy 80.

Did You Know?

Bad News: the new compact fluorescent light (CFL) bulbs contain mercury and must not be disposed of in the trash.

Good News: Home Depot will accept worn out CFL bulbs for proper disposal. At the Returns Counter drop the bulb in the plastic bag provided for them and place the bag in the disposal container.

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Know what's BELOW.
Call before you dig.

**Friendship
Friendship,
I think, is the
choicest flower
that grows in
nature's garden.
It will always
flourish if
watered by truth,
guarded by
sincerity, and
shaped by the
gentle boughs of
virtue.**

—Unknown



Douglas
Farmers Market

Desert Broom—Part 1

A favorite landscape shrub in the Hereford area is a non-native, invasive plant known locally as Spanish desert broom. (*Baccharis sarothroides*). It is native to the southern Mediterranean region of Europe, including Spain, Morocco, the Canary Islands, Madeira, and the Azores. The broom's North American distribution is from Washington to southern California. It has also established in Hawaii and in other states as a cultivated ornament.



A review of the federal government's data base paints a grim picture of the broom in North America.

Spanish broom was introduced into the California ornamental trade in 1848 in San Francisco. Beginning in the late 1930s, it was planted along mountain highways in southern California. By 1949, Spanish broom had escaped cultivation and established populations in Marin County. Of the invasive brooms in California, Spanish broom is less widespread and is considered less of a problem than Scotch broom (*Cytisus scoparius*) and French broom (*Genista monspessulana*) [28]. There is no information in the literature on distribution of Spanish broom in Oregon, Washington, or Hawaii.

Spanish broom is one of four non-native invasive broom species that occurs in North America. Spanish broom, Scotch broom, Portuguese broom (*C. Striatus*), and French broom occur in similar habitats. Common gorse (*Ulex europaeus*) is another leguminous shrub that occurs in similar habitats.

Spanish broom seems to be most common in disturbed areas, especially along roadsides, where it was seeded in the early 1900s. It has since become invasive in chaparral in southern California, where it was seeded for revegetation after fires in the early 1900s.

According to a review by USDA horticulturists, dense broom infestations produce substantial dry matter that can create a serious fire hazard. While this is particularly true for gorse and French broom, the literature also suggests that mature Spanish broom stands should be considered a fire hazard during the dry season, because patches can be dense and may contain a large amount of dead wood.

Spanish broom spreads by producing abundant seeds. Spanish broom plants are monoecious and their flowers are pollinated by bees. One plant can produce 7,000 to 10,000 seeds in one season. In the late fall or early winter, the snow-like seeds can be seen blowing over the landscape.

Broom may sprout from stumps or root crowns following damage or destruction of above ground biomass. Populations of Spanish broom have persisted and spread along roads and in other disturbed areas such as eroding slopes, riverbanks, and abandoned or disturbed lands.

The invasive brooms are successful in high irradiance, disturbed habitats, most likely due to their photosynthetic stems, rapid growth, and ability to fix nitrogen. Drought stress severely inhibits photosynthesis of brooms. Photosynthetic stems allow them to utilize a deciduous leaf phenology (to avoid water stress) and still maintain a large photosynthetic surface area in the fall after leaves have abscised.

No experimental evidence is available regarding fire adaptations of Spanish broom. According to a review by Erik Nilsen, California Invasive Plant Council, seeds of Spanish broom are similar in structure to those of Scotch broom. In low temperature fires, Scotch broom seed banks are not effectively reduced; therefore, under similar fire conditions it is unlikely that fire will effectively reduce seed bank regeneration of Spanish broom. Spanish broom is also likely to sprout from trunk bases and stem meristems following low-severity fire. Conversely, a severe fire that kills all above ground stems and burns hot and close to the ground will completely kill standing individuals and most likely remove some of the seed bank. Broom seed in the soil seed bank is probably not damaged by fire.

According to Nilsen, Spanish broom is especially invasive in southern California chaparral after fire. No other information on post-fire colonization potential of Spanish broom is available.

Part 2 next month.

Robert Welton, Master Gardener

The Agent's Observations

Q Can I propagate a desert willow tree by putting a shoot in water?

A Propagation of desert willow (*Chilopsis linearis*) is usually done by seed. However, you can clone them by taking softwood cuttings from June through early August. Treat the cuttings with rooting hormone, leaving a couple of leaves. Place them in a well drained medium, like a course cactus potting mix or sand. Mist the cutting with water and tent them with a piece of clear plastic wrap. Mist them daily until callous forms. Decrease misting when roots form. Place them in indirect light. They should root in a couple weeks. You may also try putting some softwood cuttings in water with rooting hormone and see what happens. When a number of roots develop plant them in a soilless potting mix. Let the new "tree-lets" grow a good root system. I suggest planting them in one gallon pots and let them grow for a year. You can make



your own "rooting hormone" by cutting up green willow twigs (*Salix* species) and put them in a small lidded jar and cover them with water. Put the lid on and let the twigs "steep" for a couple of weeks. Remove the twigs and you have a jar of homemade rooting hormone!

Source: Judith Phillips. *Plants for Natural Gardens*. 1995. Museum of New Mexico Press, Santa Fe, NM. page 49.

Q They are growing blueberries in the UC Berkley area and I was wondering if anyone has tried in AZ. The soil is close to the same and in the higher areas the weather is better then in some areas in California. I want to try it and need some assistance in keeping the soil acid, around pH 5. Should I try growing in pots or out in the soil?

A I tried several years ago to grow blueberries in Willcox. I had grown quite a few on an experiment station in Illinois after graduate school. I planted them in Willcox after amending the soil with peat moss and aluminum sulfate. They did not grow well and died the following year. Our soils are too high in pH for blueberries, which are members of the heath family, which includes azaleas and rhododendrons, to do well. They do



not produce root hairs and are "lazy" feeders. High pH soils, like those in most of the Southwest, have pHs from 7.5-8.5 and do not have as many nutrients available as lower pH soil in the 4.5-6.0 pH range. Soils that receive over 30 inches of rain a year are usually lower in pH because calcium carbonate is leached from the soils. Of course this is dependent on the mother material the soil was derived from. Therefore, if you want to try growing blueberries in the Southwest I would recommend planting them in containers with the appropriate soil. The other option is to buy the fruit from a market!

Robert E. Call
Extension Agent, Horticulture

August Reminders

- ◆ Keep pulling weeds
- ◆ Fertilize
- ◆ Prolong annuals
- ◆ Plan your spring wildflower garden
- ◆ Watch for nutrient deficiencies, sunburn, salt burn, over-watering, and insects
- ◆ Plant cool-season flowers and veggies

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Fall Xeriscope Tour



September 6, 2009
1:00—4:00 p.m.

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costs well under \$10. There are many other excellent canning books available; check your library, bookstore, or Internet source. Whatever book you buy or borrow, read all of the general instructional and safety sections carefully. Don't modify recipes, even a little bit; modification can result in an unsafe product. Be wary of downloading home canning recipes off the Internet unless you know and trust the source. Remember, any old fool can post anything he or she wants on the Internet.

There are two basic methods of home canning; they are the boiling water bath and pressure canning. Generally speaking, high acid foods such as most tomatoes, pickles, and fruits are processed using a boiling water bath. This method consists of immersing filled and sealed jars in a deep pot of boiling water for a set amount of time that varies from specific recipe to specific recipe,

but is long enough to allow the interior of the canned product to reach the proper temperature. Food content, jar size, and other factors determine the correct processing time.

The other technique, pressure canning, is used for low acid foods, which are generally processed at ten or more pounds per square inch of pressure, again for a predetermined length of time. As with the boiling water bath technique, the filled, sealed jars are immersed in water inside the pressure canner. The pressure canner lid is then secured to the pot, allowing the interior pressure, and therefore temperature, to rise. Be sure and read the instructions that come with your pressure canner as improper use can result in serious injury. Processing at higher than atmospheric pressure allows the temperature of the home canned product to exceed the ordinary boiling temperature of water of 212°F. Typically, pressure canning is done to achieve a temperature of 240°F.

Don't forget to adjust processing times and pressures for your elevation. In most books, recipe processing times and pressures are given for elevations less than 1,000 feet. The higher you are in elevation, the longer your product must be boiled or the higher the pressure you must use in your pressure canner. By way of example, according to the Ball book, add 10 minutes to the recommended time for a rolling boil water bath for elevations between 3,000 and 6,000 feet. It also recommends three pounds per square inch of pressure in addition to the base pressure for the same elevation range. The book you use will have charts or explanations as to what elevation related adjustments to make. If the book doesn't address processing at elevation, GET ANOTHER BOOK!

Part 2 next month.

Bill Schulze
Master Gardener Associate