



## The Virtual Gardener—Fall Gardening

Sometime ago I wrote a tongue-in-cheek article (see the [April 2007 MGNL](#)) about a mythical hormone called *geotrophin* that became active in springtime, causing humans to develop irresistible urges to dig in the ground, visit garden shops, and buy plants. If such a hormone actually existed, it would be too bad if its effect were limited to just springtime, at least for gardeners in the High Deserts of Southeastern Arizona. Fall is an equally great time for gardening here.

It's well known that fall is the best time to plant trees and shrubs. With warm soil and cooler daytime temperatures, trees and shrubs have an easier time adapting to their new homes without the stress of brutally hot temperatures and desiccating dryness. But enough about landscape plants, let's talk about vegetable gardening.

What can you plant in the fall? Rob Call, our County Horticulture Educator, has an easy rule of thumb to help you remember. If you eat the fruits or seeds of a plant, it's a spring garden plant. If you eat the leaves or other

parts of the plant, it's a fall garden plant. So specifically what vegetables are we talking about for a fall garden?

According to the [Arizona Master Gardener Manual](#) (AZMGM) vegetables such as [cabbage](#), [cauliflower](#), [broccoli](#), and Brussels sprouts can stand up to those early season frosts but need to be picked before the really cold weather arrives. Kale, [evergreen bunching onions](#), [lettuce](#), parsley, carrots, spinach, and salsify can remain in the garden throughout the winter. The manual recommends heavily mulching the overwintering plants to prevent soil heaving in the cold, but I don't really think that's much of a problem for most of us in Cochise County. [Links refer to locations in the AZMGM.]

Here at the 4,500-foot level in Cochise County, our average first frost is around mid-November and the average last frost is in the last week of March, but the coldest temperatures don't arrive until December and are over by the end of January. The first "killing" frost—often defined as 28°F—doesn't occur until the first  
*(Continued on page 2)*

### Inside this issue:

In a Desert Garden	2
Powdery Mildew	3
What's Bugging Me-2	4
Cuttings 'N' Clippings	4
Agent's Observations	5
Landscape Design Puzzle	6

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(Continued from page 1)

week in December. If you would like to know about first and last frost dates for your area—including dates for 32°F, 28°F, and 24°F—check out the [Dave's Garden](#) website, which allows you to find out that information for any zip code in the country.

Plants for your fall garden can either be started from seed and transplanted into the garden when ready or purchased as transplants from a garden shop. To determine the latest times to plant, use the formula from the AZMGM, which calculates a “safe” planting date based on the average date of the first “killing” frost in your area. Starting with the frost date: (1) subtract the number of days from planting to harvest; (2) subtract the number of days the harvest period lasts; and (3) subtract “fall factor,” which is the number of days growth is slowed by cooler fall tempera-

tures (14 days is the rule of thumb).

Because the period of our really cold winter temperatures here in Southeastern Arizona is so short and even the coldest nights are not so very cold, the life of the winter garden can often be extended with floating row covers, hoop and plastic tunnels, or cold frames.

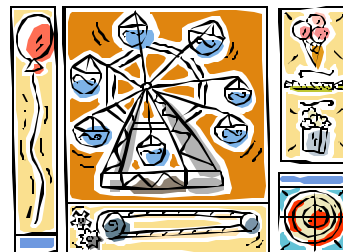
Gary A. Gruenhagen, Master Gardener  
[virtualgardener@cox.net](mailto:virtualgardener@cox.net)

## Come Rock with the Stock

The Cochise County Fair will be held at the fairgrounds located on Leslie Canyon Road, North of Douglas from September 24 to 27. See their web site

[www.cochisefair.org](http://www.cochisefair.org)

For information, schedules, and the complete fair book.



## In a Desert Garden

### *Stephanotis floribunda* – Madagascar jasmine

This is not a plant that one expects in a desert garden. Despite what the gardener's bible, the *Western Garden Book* has to say about this plant, it is a tropical and is best grown as a houseplant. However, *Stephanotis* does well in my yard.

I received a start of this plant from a friend, who grew it out on Moson Road, eleven years ago. I planted it outside the glassed-in porch of my bedroom. Here it grows up and around a metal tower. It has made a runner a few feet away and then climbs over another metal tower. This year with all the rain we had and after the wet winter, it has been blooming its heart out since spring. I planted another start which I dug up in my canna's bed against the side wall. This one winds around a metal “T” that has birdfeeders hanging on it. This one is also in full bloom since spring and has been growing there for the better

part of six years. In this location it is even more exposed to the elements. All three vines have stayed evergreen through the winters without protection.

*Stephanotis* is a twining vine with waxy, glossy, gray-green, elongated leaves. The flowers appear in clusters and are funnel shaped, also waxy and pure white and very fragrant.

A few months ago, I saw this plant in one of the big box stores. There was a difference between my plant and that plant. The store plant was a lot more showy, the leaves were huge compared to the ones of my plant and so were the flowers, and the store plant really had the appearance of a tropical plant. I guess that is the price I had to pay for its hardiness, the dryness of the air, and the heat and drought keeps my plants parts smaller.

*Stephanotis* is also grown in Hawaii where it is used in bridal bouquets and in leis, the long floral necklaces.

Angel Rutherford, Master Gardener



*Stephanotis floribunda*

## Powdery Mildew—Got Milk?

Last year, my periodic inattention (aka laziness?) to the garden led to my squash and melon patch being hit hard by powdery mildew. By the time I realized I had a problem, powdery mildew was well established. I attacked it with a sulfur-based fungicide spray purchased at a local nursery, but, alas, the plants never really recovered. I limped through to the end of the growing season and managed to salvage some decent, albeit small, butternut and buttercup squash, but the muskmelons and watermelons suffered badly, producing only small, poor-tasting fruits.

So, what is powdery mildew? It's a fungal disease that shows up on the leaves and stems of plants. It gives them a whitish-gray, or silvery, powdery appearance. Unlike many mildews, it can establish itself in relatively dry climates. Roses, peas and beans, and curcubits (the family of plants including melons, squash, and cucumbers), are among its many victims. It's quite widespread and, sooner or later, it will find your garden. An article describing it in more detail can be found in the Agent's Observations, August 2004 issue of this newsletter:

<http://ag.arizona.edu/cochise/mg/pdf/Aug04.pdf>

Anyway, as of the last week, powdery mildew has found its way back into my garden. So far, only my squashes have been attacked. The zucchini, buttercup, and butternut squash leaves are showing that altogether too familiar silvery appearance. Fortunately, I've managed to catch it early and I'm trying a couple of new ideas to try and control it. The weirdest one is...milk! OK,

OK, I'm skeptical, too, but it's cheap and easy to try it. According to both *Rodale's Vegetable Garden Problem Solver* (a handy reference book) and Mike McGrath of WHYY Radio's *You Bet Your Garden* call-in radio program (available for download each week: at

<http://www.whyy.org/91FM/ybyg> a spray of a milk solution, mixed at a ratio of one part milk to nine parts water, will control powdery mildew. Skim milk is reported to be fine, so save the real stuff for your youngsters. I have sprayed the leaves, both top and underside, of affected plants, plus adjacent plants, with the milk solution and



things look none the worse. Better yet, no other melon and squash plants have been struck by the silvery menace...so far.

The other thing I'm trying is neem oil. Neem oil is derived from from the neem tree, which is native to Asia. It is reportedly used in India in soaps and toothpastes, so it has a good record of safety when it comes to human exposure. It is reputed to be both an insecticide and a fungicide and it qualifies as an organic control. I purchased a bottle of neem concentrate from a local nursery and I'm using it and the milk spray, applied separately a few days apart, to see if I can keep powdery mildew under control this year. I'm going to repeat each ap-

plication on a weekly basis. Of course, using both substances will confuse the determination of the effectiveness of either one, but my main goal here is tasty melons.

It's one thing to control the disease once it strikes, but there are also things you can do to minimize the chance of getting it to begin with. An ounce of prevention...right? First, plant disease resistant varieties; many seed catalogs highlight vegetable varieties that are resistant to diseases and other problems. Next year, instead of Waltham Butternut squash, the variety I've grown the past two years, I'll try a variety that's claimed to have powdery mildew resistance. Also, give your plants a lot of room so as to have good air circulation to promote dryness. A tangle of vines from plants that are not well spaced enhances the spread of many diseases, not just powdery mildew. Water early in the day to allow the sun to dry plants well. Plant in bright, sunny, open places. Finally, if the fungus does strike, remove heavily affected leaves and throw them in the trash.

I'll keep you posted in a future newsletter as to the efficacy of my dual fungicide approach. I'd be interested in your experiences as well. If you've got a story of either success or failure in fighting powdery mildew, send an e-mail to:

[billwithccmga@gmail.com](mailto:billwithccmga@gmail.com) and I'll pass along interesting bits from your responses, too. Let's pool our information and experiences and maybe together we can learn to better manage this !\*#\*!^ disease.

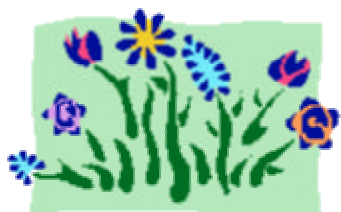
*Bill Schulze, Master Gardener*

## What's Bugging Me—Part 2

**Note:** Continued from August 2010

The second round of research revealed some mighty interesting things about the *Solanaceae* plant family. Plant scientists don't all agree what subtitle to give to the *Solanaceae* family, calling it: The Potato, or the Tomato, or the Nightshade family. But they agree there are 42 genera (in singular form a genus) which is the next level under families and the genera are further divided into 286 taxa (the next level under each genus). Of the 42 genera, 10 contain plants which are native to Southeastern Arizona and particularly to Cochise County. The 10, and their taxa found in SE AZ, include the genera:

1. *Calibrachoa* (Llave & Lex).
2. *Capsicum* L. – pepper (Native to SE AZ but not Cochise County (CC))
3. *Chamaesaracha* (A. Gray) Benth. – five eyes
4. *Datura* L. – jimsonweed
5. *Jaltomata* (Schltdl). – false holly



### September Reminders

- ✧ Keep on watering!
- ✧ Plant cool-season flowers and veggies
- ✧ Start shopping for bulbs (The bulletin *Bulbs for Southern Arizona* is available from the Cooperative Extension offices.)

6. *Lycium* L. – desert-thorn; - 4 Taxa in CC: Water Jacket, California and Arizona
7. *Margaranthus* (Schltdl). – margaranthus
8. *Nicotiana* L. – tobacco (native to almost every state in the US except Northern Plain States).
9. *Physalis* L. – groundcherry; <http://plants.usda.gov/java/profile?symbol=PHYSA> – 6 Taxa in CC and all Counties in AZ: sharpleaf, ivyleaf, prairie, broadleaf, longleaf, husk tomato and possibly the Southwestern and Chihuahuan groundcherries.
10. *Solanum* L. – nightshade; 10 Taxa in CC: buffalobur, melonleaf, Fedler's horsenettle, silverleaf, greenspot, American black, Sonoita, wild potato, and garden tomato (yes, they are native here).

Bottom line: there are at least 26 plants growing wild in Cochise County that could feed a tomato or tobacco hornworm caterpillar. If one were to add the number of non-native plants commonly found in vegetable and flower gardens, such as Genus *Petunia* (Juss). there could be well over 50 plants close to your vegetable garden that sustain hornworms! And I was surprised to find one outside my vegetable garden. Now I'm surprised the ground is not covered with tomato and tobacco hornworms.

I believe the second round of research explains why it's a good idea to "*Keep your garden as weed free as possible, to discourage egg laying on Solanaceous weed hosts.*"

Dan Evans  
Associate Master Gardener

## Cuttings 'N' Clippings

✧ The next CCMGA meeting is 5:00 p.m. Thursday, **September 2** in the Public Meeting Room at the University of Arizona South. Arizona State Park Ranger Marti Murphy, who is now the Volunteer Coordinator at Kartchner Caverns State Park, will present a program entitled *The Science of Kartchner Caverns*. She will discuss the evolution of the science involved in conserving the spectacular caverns and the habitat they provide for bats and other uncommon species.

✧ On Sunday, **September 5** the Fall Xeriscape Tour will be held from 1:00—4:00 p.m. This is a free tour sponsored by Water Wise and the Cochise County Master Gardeners. The four homes for this tour are located in Iron Horse located South of Sierra Vista off of Hwy. 92. Maps are available from the Extension Office at (520) 458-8278, Ext. 2141 or email [jwilliam@ag.arizona.edu](mailto:jwilliam@ag.arizona.edu)

✧ The Bisbee Bloomers will be holding their 10<sup>th</sup> Annual Garden Tour on **September 10** from 10:00 a.m.—4:00 p.m. in old Bisbee and Warren. For more information contact Bisbee Visitor Center at 1-520-432-3554, or toll free 1-866-244-7233, or online at [www.discoverbisbee.com](http://www.discoverbisbee.com) There is a fee for this tour.

✧ A free Organic Farm & Garden Tour featuring seven farms will be held on Sunday, **September 12** from 9:00 a.m.— 6:00 p.m. in the Santa Cruz Valley. For information call (520) 904-8102 or visit [somaslasemilla.org](http://somaslasemilla.org)

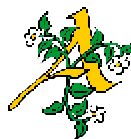
*Robert E. Call*

Robert E. Call  
Horticulture Educator  
Carolyn Gruenhagen  
Editor

## The Agent's Observations



I have heard you talk about using ammonium sulfate to improve the effectiveness of RoundUp® (common name: glyphosate). Will you be so kind as to reiterate how much ammonium sulfate to mix with concentrated Roundup® and water.



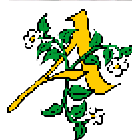
Yes I will. Following the instructions below will cause the hard water elements to bind with the ammonium sulfate (21-0-0) and make the herbicide more effective, much like a water softener does with household water. Take as many tablespoons of (21-0-0) fertilizer as you will be using to make up one-gallon of glyphosate. This amount is used because of the various concentrations of RoundUp® that are marketed. Dissolve the 21-0-0 in some water in a container. All of it will not dissolve. Strain this mixture through a cloth or panty hose into the water found in the sprayer so as not to plug up the nozzle. Mix/shake the sprayer to distribute the 21-0-0 throughout the water to "soften" it. Then add the required amount of glyphosate to the sprayer and apply to the weeds. The mixture will need a couple of hours to dry and be absorbed into the plant before a rain or irrigation.



Also, what is the name of the weed in the photos below? How's it best controlled?



Wright Groundcherry  
Photos by Rebecca Chppell



The photos are of Wright Groundcherry (*Physalis wrightii* or *acutifolia*—taxonomist use different authorities and systems). There are several groundcherries in the West. It is an annual weed that reproduces by seed only. Plants can become one to three feet high or four to six feet high in gardens that are well watered and fertilized. The leaves are alternate on the stem and vary widely in size and shape. Leave margins are prominently and irregularly toothed or cut, some-

times indistinctly toothed or merely wavy. The flowers are wheel shaped and  $\frac{1}{2}$ - $\frac{3}{4}$ " in diameter with a yellow center. The berry-like seed pod or "cherry,"  $\frac{1}{2}$ - $\frac{2}{3}$ " in diameter, contains seeds and is entirely covered by the calyx. The calyx is persistent and will enlarge to form a thin and papery green "Chinese lantern" husk. They have the look of a small tomatillo.

**Control:** The goal of control is to reduce and/or eliminate seed formation. This can be done by mechanical cultivation, (hoeing or hand pulling), or removal of flowers or seed pods by hand harvest. The use of an appropriate herbicide such as a phenolic compound (2,4-D, Banvil, triclopyr) which will kill broad-leaves but not grasses. Glyphosate (RoundUp®) which is not selective, will kill all plants it is sprayed on. To make the glyphosate more effective use the technique described above.

**Sources:** *An Illustrated Guide to Arizona Weeds*. Kittie F. Parker. 1990. The University of Arizona Press. Page 160-161.

*Weeds of California and Other Western States*. Joseph M. DiTomaso and Evelyn A. Healy. 2007. University of California Agriculture and Natural Resources Communication Services. Pages 1518-1527.

Robert E. Call  
Horticulture Educator

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# Fall Xeriscope Tour



**September 5, 2010**  
**1:00—4:00 pm.**

## Landscape Design

Have a little fun with a word puzzle. Below are 8 words connected with various aspects of Landscape Design. If you are able to find all 8 words, a hidden message will reveal itself.

Words are hidden across, down, up, and diagonally. Circle the entire word when found. Separate the remaining unused letters into the spaces below to reveal an important message.

**FERTILIZERS**  
**HARDSCAPES**  
**HERBICIDES**  
**INSECTICIDES**  
**IRRIGATION**  
**PLAN**  
**PLANTS**  
**WATERING**

I	P	L	N	S	G	A	N	N	I	N	G
A	N	A	H	E	N	E	A	I	P	D	I
S	L	S	K	D	I	E	Y	R	L	H	T
P	O	A	E	I	R	G	O	R	A	A	O
D	D	E	S	C	E	I	G	I	N	R	N
T	B	A	X	I	T	R	A	G	T	D	D
S	V	W	Q	B	A	I	B	A	S	S	K
M	D	Y	A	R	W	F	C	T	N	C	K
A	J	V	D	E	V	Y	I	I	H	A	T
I	U	H	X	H	Q	B	J	O	D	P	I
W	A	U	O	V	L	X	H	N	T	E	N
F	E	R	T	I	L	I	Z	E	R	S	S

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*Associate Master Gardener*  
**[Click here to see answer](#)**