



The Virtual Gardener—Agave Snout Weevils

A friend of mine with an extensive collection of century plants (*Agave americana*) recently discovered to her horror that several of them were infected with grubs from agave snout weevils (*Scyphophorus acupunctatus*). She was worried about her plants and asked me what to do. My only experience with the evil weevils was many years ago, and since my recollection of that experience was a little dim, some research was in order. Here’s what I discovered.

The agave weevil is a member of the family of beetles called “true” weevils (*Curculionidae*), which according to a Wikipedia [article](#) is the largest animal family on the planet with over 40,000 species, although the agave weevil’s genus (*Scyphophorus*) has only two species. Like other true weevils it can be recognized by its long, distinctive snout (click [here](#) for lots of pictures). It is brownish-black in color, ranges in size from 10-19 mm and cannot fly. The weevil is associated with a narrow range of hosts—namely large agaves and a few other plants.

According to Mary Irish in her book, *Agaves, Yuccas, and Related Plants* (2000, Timber Press, Portland), the weevils can infest any agave but seem to have a preference for the larger, softer-leaved species. *Agave americana*, *A. chrysantha*, *A. palmeri*, *A. murpheyi*, and *A. weberi* and similar agaves are the ornamental species most susceptible, but the commercially important *A. tequiliana* from which Mexican tequila is produced is also threatened.

A female weevil looking for a place to deposit her eggs seems to prefer plants about to bloom, but that doesn’t mean younger agaves are totally immune. The weevil apparently moves from plant to plant, boring tiny holes in the leaves to sample their tissues. Once she finds a suitable plant, she chews her way into its base, laying her eggs along the tunnel. Whether by design or accident, this process introduces bacteria into the interior of the plant, causing it to rot and providing a perfect environment for the newly hatched

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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



Dept. of Plant Pathology
University of Arizona

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weevil grubs. It is this rotting that actually kills the plant. The eggs hatch in about 5-6 days producing whitish-colored grubs with dark heads that pass through several stages (instars) before becoming adults in approximately a month.

Early detection of an infestation is difficult. Careful examination of plants may reveal the tiny “sampling holes” produced by the females as they seek a host for their eggs but these provide only evidence of weevil activity, not infestation of the plant. The entrance holes made by the female as she bores into the plant would be a better clue, but they are very difficult to spot. The first conclusive evidence of infestation is usually the progressive collapse of the plant’s leaves starting from the base and moving upward and inward toward the central spike. Pulling off the dead leaves will usually release a putrid odor. At this point the agave is history.

Management of agave weevils is also difficult. Management strategies include: physically removing infested plants and any adult insects or grubs found around them; not planting particu-

larly susceptible species such as *A. americana*; preferentially propagating plants that have shown resistance to the weevil; and using chemicals. In her book, Mary Irish suggested monthly

treatment of agaves with diazinon, a non-systemic organophosphate poison. However, this solution is no longer available to home gardeners. Diazinon was banned for residential use by the Environmental Protection Agency in 2004. Another currently popular chemical treatment is an insecticide containing imidacloprid, a systemic poison which is a neurotoxin for insects, resulting in paralysis and death. Despite its lethality for insects, imidacloprid is relatively non-toxic to mammals and for that reason is one of the most widely used insecticides in the world. Systemic insecticides are taken up by the plant and poison the weevils and their grubs when they ingest plant tissues.

As with all pesticides, you should carefully read and follow the instructions for use on the package label. You might also want to read the [Pesticide Information Profile \(PIP\)](#) from Cornell University for this chemical before deciding to use it.

Good luck with your agaves!
Until next time, happy surfing.

Gary A. Gruenhagen, Master Gardener
virtualgardener@cox.net

Cuttings ‘N’ Clippings

✳ The **Thursday, October 4** CCMGA meeting will feature Bob Herrmann and his beautiful photos of *Birds, Blooms, & Butterflies Native to Cochise County*. Bob waits patiently to capture the beauty around us taking photos when the birds, blooms, and butterflies are at their most photogenic. Be ready to OOH! and AAH! The meeting takes place at 5:00 p.m. in the Public Meeting Room on the UAS Campus. Contact Joyce at (520) 458-8278. Ext 2141 or go to

jwilliam@ag.arizona.edu for information.

✳ The **FREE Water Wise** workshop scheduled for **Saturday, October 6** from 9:00—10:30 a.m. will be presented by Cado Daily, Water Wise Educator. She will discuss Irrigating with *Alternative Water Sources*—how to use rainwater and graywater for landscape irrigation and how to turn your landscape into a RainScape—a landscape that uses rain and graywater for all water needs. The presentation will be held at the UAS in the Public Meeting Room. For information call (520) 458-8278. Ext 2141 or go to jwilliam@ag.arizona.edu

✳ It’s U-Pick Produce Season! For information and brochure go to

www.willcoxchamber.com

✳ The Arizona Highlands Garden Conference 2012 will be held **October 6** in Flagstaff. Details are available at:

<http://extension.arizona.edu/events/ahgc-2012>

Save Those Tomato Seeds!

Fall is here and tomato season is winding down. My own tomato season began this year, as always, with wild optimism. I transplanted about sixty starts, encompassing about 35 varieties, into the garden. As of now, only about fifteen are alive, well, and producing. Nonetheless, a few new (to me) varieties did extremely well, as did some of my old standbys. This year for the first time, I am saving seed from the varieties that did well in order to begin to adapt these varieties to our climate. Fortunately, saving tomato seed is fairly reliable, which isn't true of peppers, squash, or melons which tend to cross pollinate with abandon.

If you want to save seed from your tomatoes, here's the process. First, of course, be sure the variety from which you're saving seed is open pollinated, since hybrid varieties will not come true from seed. It's always possible that any given open pollinated tomato flower received pollen from an adjacent plant. Most of the literature on tomato pollination indicates that cross pollination isn't a big concern due to the physical structure of the tomato flower itself, which in most varieties, contains female parts that are well retracted into the flower thereby making cross pollination unlikely.

According to Suzanne Ashworth in her seed saving book *Seed To Seed*, there are some exceptions to this general rule: currant tomatoes (species *Lycopersicon pimpinellifolium*), potato-leaved varieties of "regular" tomatoes (*L. lycopersicum*), and strangely, any beefsteak tomato (also *L. lycopersi-*

cum) that is a double fruit (*i.e.* formed from a double blossom).



To save tomato seed, start by slicing a very ripe (ripeness is important) tomato in half. Cut crosswise, not lengthwise, since crosswise cuts expose seed cavities much better than lengthwise cuts. Next, squeeze or scoop the pulp containing the seeds into a clean container. I use plastic cups for this purpose. You can still use the rest of the tomato for cooking or eating as you would normally. Set the container aside for a few days to "ferment." Fermentation is the key step in saving tomato seeds, which are enclosed in a gelatinous substance that inhibits their ability to germinate inside of the tomato. Letting them ferment eliminates this inhibiting property because the fermentation process essentially mimics what happens when a ripened tomato falls to the ground and rots.

While letting the seeds ferment, I suggest placing the container in a garage or somewhere else far from where your nose spends most of its

time—the fermentation process is pretty stinky. Once the seed/gel mess has a layer of whitish mold covering it (three or four days), it's time for the next step which is separating the seeds from the stinky mess. This is done by repeated rinsing with water. Just fill the fermentation cup with cold water, swish it around a bit, let the seeds fall to the bottom and carefully pour the "crud" off. Repeat this as necessary until the seeds are clean. Any seeds that don't sink fairly quickly (10-20 seconds is plenty of time) are probably not viable, so feel free to pour them off with the crud.

Once clean, pour the seeds into a typical kitchen sieve and shake it to remove as much water as possible. Dump the (fairly) dry seeds onto a paper towel or paper coffee filter and allow them to dry completely. Once dried, save the seeds in a small plastic zipper bag or other sealed container. Store them in a cool, dry place and they should remain viable for at least several years.

A few pointers: Do label your fermentation and storage containers with the seed variety name so you remember. Do not let the fermentation process proceed too long or your seeds may begin to sprout. Finally, be sure that your seeds are completely dry before storing them.

That's it! Easy, eh? I hope you'll join me and save seeds from your favorite tomato varieties. Let's get some tomato varieties adapted to our high desert climate! Next month, I'll report on what tomato varieties did, and didn't (sigh), do well for me this year. I'd be most interested in hearing from you regarding your successes and failures as well.

Bill Schulze, Master Gardener
billwithccmga@gmail.com

Let the Sales Begin . . .

Autumn begins September 22 and that signals Fall Plant Sales!!! I love autumn. The weather becomes cooler, the air smells great, and hopefully the rains are good. This also, in my opinion, is the best time to plant. Here are some helpful hints for a successful plant expedition.

1. Make a list. With all the different and enticing plants on sale, it really helps you to remember what you are looking for.
2. Take a good plant book. My favorite is *Native Plants for Southwest Landscapes* by Judy Mielke. Speed things up by going through your plant book(s) and highlight the entries that will grow in our area. Upon discovering a new plant, I can tell at a glance if it is a high desert candidate.
3. If you know where you want to plant, take advantage of the summer rains and dig your holes. There is nothing worse than coming home loaded with plants and having to dig ALL those holes.

(Note: Reprinted from the September 1996 Cochise County Master Gardener Newsletter written by Cheri Melton, Master Gardener)

2012 Fall Plant Sales

* Tohono Chul Park plant sale will take place October 13 (9-5) and 14 (10-4). For information call 520-742-6455 or go to

<http://www.tohonochulpark.org/wordpress/> It is located at 7366 N. Paseo Del Norte, Tucson.

* Desert Survivors plant sale will be held October 13 (8-5) and 14 (10-5). For information call 520-884-8806 or go to <http://www.desertsurvivors.org/Happenings.html> It is located at 1020 W. Starr Pass, Tucson.

In a Desert Garden

Pink rockrose *Pavonia lasiopetala*

For whatever reason this plant is hard to locate. I have never seen it in the nurseries and even in garden books it is not mentioned. Maybe one reason is that it quite freely self-seeds, and in a more favorable climate, might be considered invasive. For somebody who likes a lean garden, this plant should not be planted. I welcome plants that are self-seeders as I like my garden full of plants that do well in my heavy clay soil and the poor conditions they are subjected to.

This plant is an American native and can be found in Texas and Mexico. It is a very attractive plant and can get confused with the Mediterranean native of rockrose - *Cistus*. That plant and many hybrids are readily available in the nurseries. They are beautiful, but fuzzy, short-lived, and only bloom in spring. The problem with these plants is that they are Mediterranean natives, and they like wet winters and dry summers. They usually perish during our monsoons.

The American rockrose starts blooming in spring and never stops until frost. Overall it is a tough plant that does best with very little water once established. It is a plant from a more temperate climate, but it has survived in my garden just fine.

I found this plant several years ago at the Bisbee Farmers Market when Mike Hooker was still in the nursery business and dear Penny Artio sold his plants. This plant was even attractive in a nursery pot, which is usually not

the case with desert plants. The rockrose grows into a small rangy shrub with branches up to 3 feet long. It is not a very tidy plant and is woody at the base. The foliage is deep green and the leaves are elongated and serrated. As it is in the mallow family the flowers look like mallow flowers. My variety is light pink with deep maroon centers (see below). They are about 2 inches in diameter and very attractive. The flowers close at night.



In my yard, I let it grow where it chooses as it doesn't mind being pruned into shape. From time to time, plants decide to grow where I absolutely do not want them. In that case, I dig them up and share with friends. I water them well the day before, cut back the tops, and put them into pots.

This is a hardy plant and can take light shade to full sun. Its only enemy is the watering can.

Angel Rutherford
Master Gardener



Farming During the Age of Enlightenment by Stefania Blanchette coming next month!

A Sticky Subject

Q There are two weeds that grow on my property that produce burrs. One is clover-like and the other is a grass. They stick to clothing, blankets, and animal flesh including my own! What are they? I spray them with herbicide but they reappear. How can I control them?

A The two plants that are producing burrs in your yard are bur clover, (*Medicago hispida* Gaertn.), and field sandbur, (*Cenchrus pauciflorus* Benth.), which is a grass. Both of these plants are annuals and sometimes short-lived perennials reproducing from seeds.

Bur clover is a low trailing plant found in lawns, gardens, and along roadways and waste areas. Plants stem weakly, branching from the base and radiating out from a taproot one quarter to two feet long. Leaves are composed of three lobed clover-like leaflets with toothed edges and indented tips. Where the leaf joins the stem there is a pair of small leaf-like structures. Yellow flowers are produced during early spring and late fall. Seeds are found in spiny pods. The pods are straw-colored or brown when mature and contain several kidney-shaped seeds which are yellowish or tan colored.

Bur clover should not be confused with another weed of the same genus called black

medic, (*Medicago lupulina* L.), which is very similar but has hairs, not spines, on seed pods. Both are natives of Eastern Europe and Asia and are cousins of alfalfa.

Field sandbur, not to be confused with southern sandbur, (*Cenchrus echinatus* L.), is a warm season grass found in dry, sandy, cultivated soils in lawns, roadsides, washes, and waste places. Plants are from eight inches to three feet tall with shallow roots which spread horizontally forming mats. Leaf blades are flat but can be twisted or folded and are two to five inches long. Reproduction is by seed or by prostrate stems that root. Burs grow in spikes one to three inches long and bear 10 to 30 burrs each. They are a shiny, straw-yellow containing two seeds. Each plant can produce up to 1,000 seeds.



Field sandbur

Control: These annual weeds arise primarily from seeds. Cultivation of young and/or mulching before seeds germinate can control these plants. On non-crop land, summer soil solarization, using moist, tilled soil covered with clear plastic, can kill weed seed. Control with herbicides like Roundup or 2,4-D is best accomplished on

young plants. Herbicides or cultivation of mature plants will not control these weeds in the long run if seeds are allowed to mature. If seeds develop then chemical controls must be applied before seeds germinate. Bur clover germinates during the cool weather of early spring or fall. Sand bur germinates during the warm weather of spring or summer. Herbicides that can be applied before seeds germinate are Gallery, (available only from professional applicators), which controls broadleaf weeds like bur clover, or Surflan, which is a second, but not as effective choice. Field sand bur growing among broadleaf plants can be controlled using Poast or Fusilade herbicides. On non-crop land several compounds can be used including Stomp, Bueno, or other "soil sterilants." Some of these compounds are only available to licensed pesticide applicators. As with all pesticides read and follow the label and understand their use.

Source: *An Illustrated Guide to Arizona Weeds*, 1980. Author, Kittie F. Parker

(<http://www.uapress.arizona.edu/onlinebks/WEEDS/TITLW/EED.HTM>)

(Note: Reprinted from the March 1997 Cochise County Master Gardener Newsletter written by Robert E. Call, Horticulture Agent.)

Cochise County Master Gardener
Newsletter Editor
Carolyn Gruenhagen

Birds, Blooms, & Butterflies



Elegant Trogon
Photo by
Bob Herrmann

Bob Herrmann will be presenting the program at the CCMGA meeting on Thursday, October 4. He will be showing his stunning photos of birds, blooms, and butterflies. For a short three minute preview, click [here](#). The program will be held in the Public Meeting Room of University of Arizona South and starts at 5:00 p.m. and will last for approximately an hour. Come and enjoy the extraordinary sights found right here in our own Cochise County. The public is warmly invited.

Did You Know . . .

Cochise County Master Gardeners Association is planning their 20th annual High Desert Gardening & Landscaping Conference to be held February 14 & 15, 2013 at the Windemere Hotel & Conference Center in Sierra Vista. There will be outstanding speakers on subjects from vegetable gardening, environmental stewardship, to landscaping plants! The conference is open to the public and is an educational experience for everyone with an interest in gardening. For information contact UA Cooperative Extension at (520) 458-8278, Ext. 2141 or www.ag.arizona.edu/cochise/mg/ Registration forms will be available after the first of the year. Scholarships will also be available—information will be on the web site.

High on the Desert

February 14 & 15, 2013
Plan now to attend!!!



October Reminders

- ☼ Be ready for the first frost
- ☼ Thin seedlings
- ☼ Overseed lawns
- ☼ Plant spring bulbs
- ☼ Divide perennials
- ☼ Don't let weeds go to seed