

COOPERATIVE EXTENSION

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the Cochise County Master Gardener

NEWSLETTER

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TOMATOES

Barbara Kishbaugh
Staff Writer

Upon learning of my intention to write an article on tomatoes, friends and neighbors offered information on their growing experiences.

Rob Call, Horticulture Agent, said if you pinch out the new growth which grows in the crotch of two stems (auxiliary growth), it will encourage an earlier crop with larger fruit. If quantity is desired, don't pinch the new growth. The varieties Rob recommended are Celebrity, Early Girl, Better Boy, and for cherry tomatoes, Sweet 100. LaRoma was selected for the pear-shaped tomatoes. It is my preference for its meaty quality.

Tommi Martin recommended the yellow pear variety since the plant she grew spread to a great size and produced more fruit than was ever anticipated.

Betty Biederman, who has a bountiful garden each year, said she practiced a theory found to have good results. When transplanting the tomato plant, remove the lower limbs and place the tomato plant deeper into the soil than it had been previously growing. Then, as the plant develops, mound up more earth around the stalk much as you would a potato plant. This procedure produces an anchored plant with stronger and fuller growth. Jim Brown reiterated the benefits of this system of growing tomatoes. Less of the root is near the top of the soil and subject to our drying winds.

Purchased plants have probably been grown under artificial lights and if they are in blossom, the same conditions need to be present for further development. These plants should be hardened off. That is, subjected to our growing conditions by placing them out of doors each day until they adapt. Tomato plants are not going to continue growing once they are transplanted until there is sufficient warmth and light available to produce blossoms and fruit.

(Continued on next page)

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Robert E. Call

Robert E. Call
Extension Agent,
Horticulture

When transplanting the tomato plants, be sure and place them in a prepared bed. A monitored watering system is recommended for a balanced moisture level. This will alleviate the cracking and blossom end rot which sometimes occurs. Put some kind of a collar around the new transplant. Newspaper in layers works well and keeps the cutworms from lopping off the new transplants. The best system is a combination of support and protection. Supporting the plants on a wire cage will keep them off of the ground and the fruit will be clean and also insect free. If you place black roofing material around the base of the wire frame, about one inch under the soil and three inches above, it will stop the cut worms. It will also create a microclimate for each individual plant, protecting it from the wind while also retaining the warmth of the sun and the moisture in the soil. Mulching around the tomatoes further conserves moisture and keeps the fruit from touching the soil.

If you follow these recommended procedures which other gardeners have implemented successfully, it will probably give you a cleaner, earlier, more abundant yield.

*Always continue to learn—
always share what you learn.*
—Emory Leland, 1972

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DRIED TOMATOES

Elizabeth Riordon
Staff Writer

If our gardens are as successful as we hope them to be, we will soon have a bountiful crop of tomatoes. There are often too many of them to use when they are ready to be harvested. The extra ones can be saved. Canning is the most common way of preserving tomatoes. Detailed information on how to do so is available from the library or the County Homemaker Extension service.

Other methods of preserving are by drying. Tomato fruit leather can be prepared in the same way that other fruit leather is prepared. The addition of salt and sugar and other fruits is dependent upon the palette of the cook. Try several experimental recipes until you find the one you like best. Very ripe fruit may need no additives.

The tomatoes can also be sliced and dried. Removing 80 to 90% of the moisture in food will enable it to be stored for long periods of time. If the food is first sulfured or blanched, vitamins and flavor will also be preserved. Sulfuring involves unpleasant and dangerous fumes, so most of us will probably not choose to use this technique. Blanching is a brief heat treatment in steam, boiling water, or in a microwave oven. Tomatoes should be dipped in boiling water for one minute or steamed for three minutes. They should be microwaved for a long enough time for the skin to be easily peeled. The fruit should still be firm enough to be sliced after being blanched and peeled. The sliced tomatoes can be dried in a commercial dryer, in a home-made dryer, in your oven, or on trays indoors or outside. The aim is to have a flow of warm,

dry air over the fruit to dry it as rapidly as possible. Tomatoes will probably take 10 to 18 hours before they are as they should be, brittle, crisp, and light in weight. Optimum drying temperatures are between 95 and 145 degrees, with 140 the best. Sunlight speeds drying but also destroys some vitamins. Outdoors, dust and automobile and truck fumes can be a problem. Outdoors, as well as indoors, a protective covering of cheesecloth will help to keep insects off the fruit.

After it is dried, the fruit should have a final treatment to fully finish the drying and to kill any insect eggs that may be in the slices. Spread the pieces on a tray and bake them for 10 to 15 minutes in an oven heated to 175 degrees. Cool the fruit and put it in open, enamel, glass, or ceramic containers for about five days, stirring it twice a day. If it seems moist, redry the batch.

If the tomatoes are to be stored for a long period of time, sterilized glass jars or plastic bags should be used. Metal containers may be used if they are lined. The fruit should not touch the metal. Perfect canning seals are not necessary, but the lids should be tight and secure. The fruit should be stored in a cool, dark place. The freezer is a good place to store dried fruits. If unfrozen containers of tomatoes show any condensation during storage, dry the food again.

Rehydration can be accomplished in about two hours by pouring boiling water (1½ cups of water for each cup of fruit) over the dry food or the dry tomatoes can be added to sauces, stews, or soups. Some of my friends tell me that they eat the dry tomatoes plain, just like any other sliced, dried fruit.



SCORPIONS IN SOUTHERN ARIZONA

by T.J. Martin

COMMON NAME: The three most commonly observed scorpions in Arizona are:

- a) Desert or Giant Hairy Scorpion (*Hadrurus arizonensis*)
- b) Striped or Devil Scorpion (*Vaejovis spinigerus*)
- c) Bark Scorpion (*Centruroides sculpturatus*)

DESCRIPTION: The adults look very much like tiny versions of their cousins, the lobsters, but with the addition of a very wicked-looking stinger at the tip of the long slender "tail." They have four sets of walking legs and a pair of very efficient pincers or claws that are used in defense or for holding on to prey. The young look like miniature adults.

LIFE CYCLE: Adult scorpions live solitary lives, getting together only when it is time to mate and then separating again. The young are born alive and are commonly carried on the back of the female for protection until at least their first molt. They then leave to establish their own hunting grounds. In ideal conditions scorpions may live for several years.

PREY: Scorpions are actually quite handy when it comes to taking care of insect pests in the garden. They use their claws to capture just about any soft-bodied insect or spider they see. One reference states that they may also feed upon small reptiles and young rodents. A large victim may need a sting to subdue it, smaller ones are just torn apart by the scorpion's strong pincers and eaten.

TIME OF YEAR: Like most cold-blooded creatures, scorpions do not get around much in cold weather. They become most active when the temperatures reach the seventies. They will also become more noticeable, often in relatively "safe" areas, when the summer rains flood the usually dry stream beds and washes where they may live and hunt. This is also when they may come inside homes.

WHAT TO LOOK FOR: Bark Scorpions, like their name suggests, are usually found in conjunction with wood or wood products. They dearly love wood piles, bark, rotten logs, and tangles of fallen trees and limbs. If you like to camp near tree-lined streams or in the forested areas, this is the critter you are likely to find in your boots or sleeping bag. This animal is rather small (2- 2½ inches) and slender looking and is pale (straw-like) in color. **THIS ANIMAL IS ALSO THE MOST POISONOUS AND DANGEROUS SCORPION IN OUR AREA!!!**

The Giant Hairy Scorpion is partial to rocky terrain in the central and southern portion of the state. This is a relatively robust creature that can exceed 4 inches in length and looks as though he may have spent a fair amount of time working out at the local gym. "Hairy" (who isn't really) is also darker in color and although he may scare you to death with his appearance, has the LEAST dangerous venom of the three.

The Striped Scorpion can be found most anywhere in a variety of habitats. He is "medium" all the way around. He can grow to about 2-3 inches in length and is usually a medium tan/brown in color.

All scorpions are nocturnal. They hide in burrows or crevices until the sun goes down and then come out to hunt. A good way to hunt for scorpions (strictly as a precaution, of course) is to go out after dark with a ultraviolet fluorescent (black light) lamp. Scorpions glow quite brightly in this type of light and can often be seen from several yards away.

CULTURAL CONTROLS: Clean up the area! Scorpions need places to hide in and likewise do most of their prey. Clearing away of any stacks of wood or brush and removing piles of rocks or building debris will go a long way toward reducing scorpion habitat. Seal cracks or any other entrances into your home.

PRECAUTIONS: Wear gloves when working in the yard or garden. (Don't forget to check the gloves for "occupants" BEFORE putting them on!) Don't put your hands (or any other part of your anatomy!) where your eyes have not been first. Use a stick or your foot to roll over logs or large stones before picking them up. Storage sheds and utility closets are favorite haunts. Move items carefully, inspecting all sides before picking them up. Shake out mats, blankets, drop cloths, etc... When camping or picnicking, avoid piles of wood or rocks and check your intended resting area carefully. Always shake out shoes and clothing before putting them on and totally unroll and shake out sleeping bags before crawling into the sack.

MECHANICAL CONTROLS: If you must eliminate scorpions that are posing a safety hazard, the tried and true method is to smash them. You will have to be quick and NEVER grab for one with a bare hand or foot to prevent its escape! Use a long-handled tool or a rock if you have one.

NATURAL CONTROLS: Scorpions are a natural food source for some birds (especially owls), several rodents, and larger reptiles.

PROBLEMS AND DAMAGE: When left alone in their natural habitat or even when allowed to coexist in yards and gardens, scorpions are a beneficial natural predator of many pest species. The problems come about when humans come upon them unexpectedly or try to mess with them. Like any other animal, scorpions will defend themselves and unfortunately for us, the venom from their sting can cause serious illness or even death.

FIRST AID: When a scorpion attacks, it may grab hold of the skin with its pincers and then use its stinger repeatedly. It is very important to dislodge the animal by knocking or scraping it off as it will inject more poison with each sting. Normal reactions to the sting will include pain, numbness, or tingling. This can be treated with applications of a cold compress (10 minutes on, 10 off) and the use of your normal pain reliever. In case of other symptoms such as muscle spasms, twitching, or blurred vision, it is suggested that you have someone drive you to the nearest medical facility. **DO NOT TRY TO DRIVE YOURSELF.** In the case of a small child or anyone else who is weak or infirm, seek **IMMEDIATE** emergency care at the closest medical facility. **IN ALL CASES** you should contact the Arizona Poison Control Hotline at 1-800-362-0101 or your local emergency room for up-to-date medical advice.

CHEMICAL CONTROLS: Please consult the Agricultural Extension Agent or a Master Gardener Volunteer for current recommendations. Phone 458-1104, Ext. 141 in Sierra Vista or 384-3594 in Willcox. Whatever you use, **FOLLOW LABEL DIRECTIONS EXACTLY** and take the necessary precautions to protect yourself, other humans, non-target animals, and the environment.

STRIPED-TAILED VAEJOVIS
V. spinigerus
5 to 8 cm (2-3")
southwestern U.S.



SCULPTURED CENTRUROIDES
Centruroides sculpturatus
6-7 cm (2.4-2.8")
Arizona; poisonous

GIANT HAIRY HADRURUS
Hadrurus arizonensis
to 11 cm (4")
southwestern U.S.



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THE AGENT'S CORNER

Robert E. Call
Horticulture Agent

QUESTION: I have elm trees that have beetles that become quite a pest. They eat the leaves. How can I get rid of them?

ANSWER: A sure way to get rid of elm leaf beetles is to cut down your tree(s) and those of your neighbor's! The larva of the beetles are eating the leaves so you must get rid of them. You can spray *Bacillus thuringiensis* or B.T., the San Diego strain. This product is sold under several trade names and is an organic insecticide that kills insect larva only and is not harmful to other insects or animals. B.T. is a natural occurring soil bacteria that must be sprayed on the leaves and the treated leaves eaten by the larva. B.T. is washed off by rain and must be reapplied. Another solution is to spray a 2 foot band of Sevin insecticide around the tree trunk 6 to 8 feet above the ground. The elm leaf beetle larva travel down the tree trunk to pupate on the lower trunk or near the soil line. Crossing the Sevin strip will kill the larva and over time reduce the insect population. This was discovered by University of California entomologists and reported in the March/April 1991 issue of *California Agriculture*.

QUESTION: I am confused about fertilizers. What do the numbers on the bag mean? What is the difference between organic and chemical fertilizers?

ANSWER: By law 3 numbers are required on a fertilizer bag.

These are the percentage by weight of nitrogen (N), phosphorus (P) and potassium (K) or N-P-K in that order. Therefore, a bag of ammonium phosphate is marked 16-20-0 or 16% N, 20% P, and 0% K. The N is actual total N no matter what the form. The P is really the percentage of P_2O_5 and K is really percentage of K_2O . A small side-note to get the actual amount of P you must multiply the number on the bag by 43% and by 83% to get the actual amount of K. These percentages are derived by taking the atomic weight of the element in question and dividing by the atomic weight of the molecule that the element is in. There have been



efforts to revise the current labeling of fertilizers so that only the percentage of P and K appear, but these efforts thus far have ended in failure. Our soils need N for normal plant growth because it leaches from the root zone. Most of the N is absorbed as the NH_4^+ ammonium and NO_3^- nitrate. These are both inorganic molecules. Generally plants use nitrate form over the ammonium form. Ammonium is converted to NH_4 in the soil by aerobic bacteria and some fungi, therefore cool wet soils have less active bacteria and will yield less nitrate nitrogen. Nitrate forms of nitrogen are taken up by plants directly and is better used in cool moist soils. Many nitrogen based fertilizers are made by a process which uses atmospheric nitrogen (the air we breathe is

about 78% nitrogen) and natural gas or methane combined under high pressure and heat. Organic forms of nitrogen must be mineralized, that is converted into inorganic nitrogen by soil microorganisms for plant use. Also the carbonaceous material of the organic matter is broken down into humus by soil organisms and use N as an energy source. Organic sources of nitrogen include blood meal which is usually around 15% nitrogen. Our desert soils are also low in native phosphorus and it should be added at planting time. Phosphorus binds with the soil and does not leach or can not be "melted" into the soil with water like nitrogen. There are several forms of phosphorus, many being produced by treating phosphate rock with an acid like phosphoric acid. This yields triple super phosphate or 0-45-0 on the fertilizer bag and can be neutralized with ammonia to make ammonium phosphate and liquid fertilizers. Organic forms of phosphorus are available with bonemeal, 0-12-0 being the most common. Potassium is not needed usually in our desert soils. There are many fertilizers on the market which have other nutrients for plant growth. Higher priced fertilizers have some of these nutrients added and increase the cost. Organic based fertilizers like manures and composts have lower plant nutrient levels but add organic matter to our soils and are more beneficial in this regard than chemically based fertilizers. However, the cost and high amounts needed of organic fertilizers for normal plant growth are very high when compared to bagged chemical fertilizers.

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Address correction requested



May Reminders

- Begin Deep Watering
- Plant warm season crops
- Control Weeds
- *Controlling Weeds*
- Check Tree Ties
- Control Pests

The pamphlet listed above is available from the Cooperative Extension offices as well as many others that may be helpful to you.

MORE HIGHLIGHTS *High on the Desert Conference*

From Dr. Dave Langston, *African Bees*

- Don't wear perfume or dark colors.
- Don't smell like a bear.
- If attacked, cover head and run for cover.

From Bill Free, *Drip Irrigation Design*

- Test your system with a 1 gal. milk carton and a 1 gal/hour drip emitter in a variety of locations in your yard or garden to see how the water gets distributed.

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TAKE CARE OF YOUR HUMMINGBIRD FEEDERS!

We love to have the wonderful little hummingbirds visit our gardens and drink from our feeders, but we must keep the feeders clean or we could give its visitors a deadly infection called *candidiasis*. It eventually causes the bird's tongue to swell, making it impossible for the bird to eat. The disease is passed from mother to offspring. To prevent this, wash the feeder with hot water every two to three days, and replace the sugar water (1 part white sugar to 4 parts water). Hang the feeder where the birds are safe from cats, and if ants are a problem, try petroleum jelly on the hook attachment.