Events & Activities

MG Association Meeting, Wednesday, June 16, 6:30pm, Cottonwood. We will have a panel of experts to answer your gardening questions. See address page for more information and a map.

Yavapai Rose Society - June 21, 7:00 PM, First Christian Church, 1230 Willow Creek Rd, Prescott. Jay Eby will talk on soils in the Prescott area. For more information call Bob or Nancy at 771-9300,

Prescott Area Gourd Society, Nov 20, 7pm, at the Prescott Library on Marina

Pond Club -this is an informal group that meets every couple of months, usually the 3rd week. Email aquaticgardens@esedona.net for more information.

The Organic Gardening Club meets on the 3rd Sat. of the month at 2215 E. Aspen St. in Cottonwood 3pm. Call 928-649-3451.

NEW! Prescott Orchid Society, meets 3rd Sunday of the month, 2pm at the Prescott Library, call Cynthia for more information. (928) 717-0623

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University of Arizona Yavapai County Cooperative Extension

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June 2004

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Corn

Sweet corn is part of the dreams summer is made of. For most people in the Camp Verde area, the opening of the Hauser's corn stand is anticipated as much as the last 100-degree days of summer. There is nothing better than fresh picked corn. My dad would eat it raw right off the cob, a habit I've occasionally indulged in. Most people take the time to cook it, but the anticipation of waiting is difficult. Behind tomatoes, this is probably the most popular vegetable grown by gardeners.

The history of corn is convoluted and uncertain. While scientists think that they have figured it out, its history of cultivation is so long that the original ancestors of modern corn are unknown. In fact, some scientists think the ancient precursors to modern corn no longer exist as wild plants. The nearest wild relative left is thought to be teosinte *(Zea mexicana,)* found in Mexico and Guatemala. It is known to hybridize with cultivated varieties of corn. Another relative may be *Tripascum* species. Both *Tripasum* and teosinte are related. Prehistoric people cultivated corn for centuries. Seeds and cobs have been found in many ancient sites. Pollen has been dated from 60,000 to 80,000 years ago. The earliest cobs discovered in human sites are from around 3500 BC. In North America it finally shows up after 800 AD as a staple crop. While no one is entirely sure, there is some speculation that the earliest forms were eaten as popcorn. Some varieties were prized for their sugar content, mostly for improving local beers.

It was really in North America that sweet corn for eating was developed. Nineteenth century references talk of sweet corn but it wasn't a major home garden crop until the 1960's when extra sweet varieties were developed. Today we have sweet corn, super sweets and extra-sweets for the fresh-eating market. There are entirely different varieties of corn grown for animal feed, fuel extraction (ethanol,) corn syrup, corn starch, corn meal and flours. Corn is a major agricultural crop grown for a huge number of uses beyond eating.

Corn is a member of the grass family. It is an annual that

grows and produces seed and then dies in a single season. Most varieties put up single stalks but some sweet varieties may put up multiple stalks. Fibrous roots hold the stalk in place. Brace roots will form on the stalk and grow into the soil to support the plant.

As the plant matures, it produces male and female flowers. The male flowers are the familiar tassels at the top. These shed large quantities of pollen into the wind. They produce pollen for 12 to 20 days. The female flowers are, of course, the wildly anticipated ears. The ovaries are aligned along the cob, each with an individual "silk" strand that comes out of the top of the ear. A pollen grain lands on the silk and travels down to the ovary to fertilize it. If you have spotty production on the cob, it usually means that the individual kernels were not all fertilized. Heat can kill the pollen and reduce pollination or there simply may not be enough corn plants around for effective pollination. This is why you need plenty of space. Larger stands of corn are often better fertilized than if you just have a handful of plants.

Fertilizer is critical to corn, it is a heavy feeder. Before planting, incorporate plenty of organic matter into the soil. It especially needs nitrogen but phosphates are also necessary. Many people incorporate extra ammonia phosphate fertilizer into the soil. However, there is no reason you cannot grow corn organically by adding extra compost to the soil. If you apply commercial fertilizer, add at the rate of 2 pounds of ammonia phosphate and three to five pounds of soil sulfur per 100 square feet. Water the site and then leave to let dry out before planting. Once the plot is dry, plant the seed and irrigate. Flood, furrow or drip irrigation works well with corn. It isn't fussy about how the water arrives it just needs plenty of it.

When it comes to planting, this is a fun crop to have children help with. The seeds are large and easy to handle and grow rapidly. Plant the seed in rows or hills one to two inches deep every four to six inches. If you are using rows, the rows need to be 24 inches apart. Thin seedlings every 8 to 12 inches. If you are using hills, place 3 to 4 seeds four inches apart. Hills need to be spaced 30 inches apart. You want to have as much pollen in the air as possible around each plant, so do not plant one single row of corn; plant several shorter rows so the plants are in a more contained area. This will help to assure more complete pollination. Native Seed/Search in Tucson has some old varieties that were selected to survive the rather severe conditions of growing in areas like the Hopi and Navajo reservations. They were dependent on rain to grow and had to survive severe winds. They selected varieties that were planted from 6 inches to a foot deep. This would help support the stalk in heavy winds and keep the roots lower in the soil where the moisture would remain longer. With more modern varieties, you can give this technique a try to save water and provide more support for the plant. Plant in trenches and, as the seedling grows, fill in the trenches around the stalk. This encourages the support roots to form and reduces watering. I tried this one year and, although it is a bit labor-intensive, it worked. I tried it as one last ditch effort to keep the wind from blowing down my plants every year.

Corn is truly a summer plant. While you can start it indoors in containers, to me anyway, that seems like a waste of time and effort in our climate. We have a long enough season that early starts aren't really necessary. Plant after the last frost. Covering the bed with plastic before planting to warm the soil earlier and extend the season. Depending on the variety, corn needs a growing season of 65 to 95 days. If you have enough space, plant successive generations at two-week intervals to have corn all summer long. Otherwise, all your corn will ripen within the same time period and then you have to figure out what to do with it all.

As I mentioned earlier, corn is a heavy water and fertilizer user. Water stress will reduce yields, especially during the critical flowering time. Corn should never wilt (actually the leaves will roll) or appear lackluster! Bright green and bouncy tells you that corn is happily growing. Even, consistent watering is key. I've become a fanatic about timed irrigation systems over the years to

help make sure that my gardens are consistently watered. With the advent of inexpensive timers that attach to hose bibs, it is easy to set up a system that is reliable and make sure your vegetables have consistent watering.

More fertilizer should be applied when the corn has five leaves, about three weeks after planting. After that, fertilize once a week throughout the flowering stage. Keep the applications light but maintain that dark green color. Compost tea is an excellent organic alternative to commercial fertilizers.

Bugs, bugs, bugs—as you might have guessed, anything we like to eat, there is something else out there that enjoys it, too. Corn, unfortunately, has several users besides humans. Cutworms like to feed on the stems of emerging seedlings. There are some pesticides you can use to treat cutworms (READ THE LABEL!) or place small cardboard tubes around the emerging seedlings. Recycle paper towel and toilet paper tubes! Corn borers are the larvae of moths. These feed on young leaves before they actually emerge. Leaves will look tattered as they are emerging. These can be treated with *Bacillus thuringiensis.* This is an organic treatment that works very well. Last of the little pests is probably the most annoying one because it is in direct competition with our appetites. Corn earworms actually eat the corn. You've seen them when you have pulled down the leaves on the cob. Those small white grub things—EEEEhhhuuu! These are a bit tougher to control; you may need to learn how to share, some seasons. The cornworm moth lays her eggs on the silk. When the eggs hatch the larvae start feeding on the silk and then travel down into the cob. Normally, they just damage the top of the ear, which you could cut off. Interestingly, the tighter the leaves hold around the cob, the less likely the larvae are able to get at the ear. Some varieties are bred to have tighter-forming leaves. If you are ambitious, each ear can be treated by putting a few drops of mineral oil on the silks. This catches the larva before it enters the cob. Now, if you have a acre or two, that might be difficult.

There are two diseases that impact corn: bacterial wilt and corn smut. Look for varieties that are resistant to wilt diseases. Smut is a fungus that may appear any place on the plant. It starts out grayish and then becomes a dry black mass of spores that can infect the entire crop. The best treatment is preventative care. Remove old corn stalks each year to keep the level of spores down. As a side note, in Mexico there is a smut that is a delicacy. It is just now occasionally appearing in southwestern restaurants.

Did you get your plants through the summer; are the ears plump and fat; are the leaves dark green? So when do you pick? Pick just before you are ready to eat it. The sugars change in corn while in storage; they convert to starch. Some of the new super-sweet varieties hold their sweetness longer but, if you can start the water boiling, then go out and pick so by the time you clean the ears you can immediately plop them into the water or onto the grill.

Corn is one of the highly-researched crops in the world and every year new varieties come out and old varieties disappear. Most are hybrids, so seed saving may not be an option. Each year just browse the catalogs and try something that sounds good. If you have an old favorite and it's still available, stick with it. There are a number of places that sell heirloom varieties, if your favorite disappears.

Some of the favorites still available are Silver Queen, Bantam crosses, Kandy Korn EH, Seneca varieties, Country Gentlemen (an open pollinated type; you can save seed from this one.) You can also grow your own popcorn. I did it one year and it was work cleaning it but it might be a great kids' gardening project. Refrigerating it before popping improves the number of kernels that pop. There are a number of colored corns available for ornamental purposes and, for the truly adventurous, grow flint and flour corns for making your own tortillas, tamales and cornbread. For those adventurous souls, try one of Native Seed/Searches native corns. You can find their web site at www.nativeseeds.org or

526 N. Fourth Ave
Tucson, AZ 85705
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Tomatoes

Without a doubt, the tomato is the most grown vegetable around. No wonder, after eating some of those store-bought baseballs they call tomatoes. Hundreds of varieties provide the opportunity to always have something new to try. This year I am trying several new varieties. I hope you are, too. While tomatoes grow well in Arizona, there are a few problems you might run into.

One of the first things you will probably encounter is blossom drop. Ever noticed that your tomatoes may bloom like crazy but no fruits forms? The blossom just withers away. There are several reasons for this. Too high a temperature is the most common cause, but it can also occur at too low a temperature and in times of low humidity. Cultural practices can also cause blossom drop—improper watering and poor fertilization practices may be the culprit. Most likely, though, the drop is caused by high temperatures. Temperatures higher than 90°F can cause the flower to abort. Our low humidity contributes to the problem, also. Pollen prefers humidity between 40 and 70 percent, something we only have during the summer monsoon season. Good cultural practices and some shade can help mitigate these problems but there may just be times that your tomatoes will not set fruit. I have found that tomatoes produce their best crop in the fall, unfortunately. Every year at the first frost I have bunches of green tomatoes that end up in the compost pile. This will be the first year I will be able to shade my plants, so I'll see if I get a few more tomatoes during the summer months.

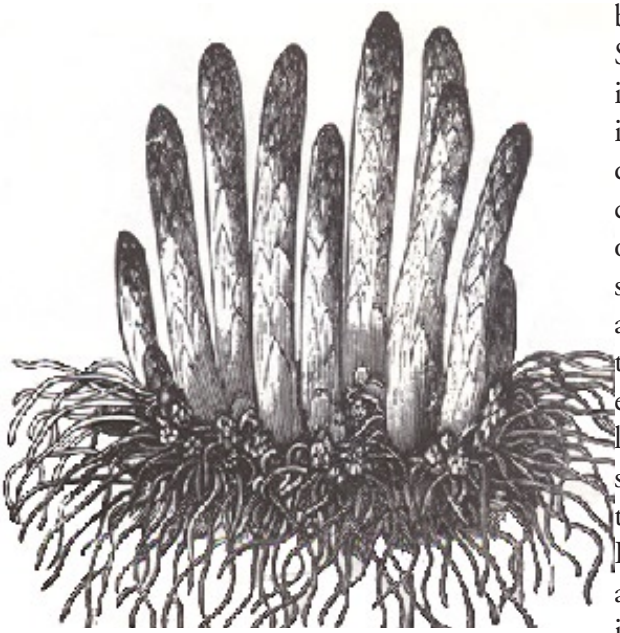
Cultural practices also impact fruit set. Excessive irrigation and, on the opposite end, not enough irrigation can cause the blossoms to drop. Even irrigation all summer long is the key. Moist but not wet soil is important for the long-term health of the plant. Healthy plants are more likely to produce fruit. As many of you know, I am a great believer in drip irrigation systems on a timer (see corn article.) Tomatoes will appreciate not going through a typical boom and bust cycle of watering. If you are watering heavily, when you see leaves wilting the plant will respond by not doing much.

Too much fertilizer can be as much of a problem as too little. Too little and your plants will be spindly wimps and too much can actually cause water stress by damaging the plants tissues.

Blossom end rot is another problem we see frequently here. Most times it will occur in the first tomatoes of the season. Later tomatoes are often free of it. It is the lack of calcium that causes this problem. Calcium is an essential nutrient for cell wall development. When the plant is stressed, calcium moves too slowly through the system for proper development to occur. This problem is tied to temperature and watering practices. The early season of blossom end rot is often caused by cooler temperatures and poor watering practices. Once it starts to warm up, the problem often disappears. It can be prevented by reducing fluctuations in moisture and by good drainage. Our soils generally do not lack calcium; the plants just aren't able to use it if there is too much or too little moisture. Mulch your plants to stop that boom and bust watering cycle. Deep, infrequent waterings are better than shallow frequent waterings. Tomatoes can be afflicted by many other things but these two items are very common and most people see them in their gardens frequently. Good cultural practices will help prevent them. Enjoy those summer tomatoes!

Asparagus

This is the second year for my asparagus. While most people want instantaneous asparagus, I went the long route, mostly because my brother gave me some asparagus seeds. Last summer I planted about ten very small plants in the garden. This year I was pleased that nearly all of them showed up again and some had remarkable size. Next year I should be able to do my first cuttings. I am also starting more seeds of another variety. They are about the thickness of the wire in a paperclip—fragile looking things—but I have found them to be remarkably hardy. A Note About Seeds: Having male or female plants can make a difference. Female plants devote more energy to seed production. Male plants will produce more spears. With seeds you get what you get. Some companies will note in their catalog that the majority of their roots are male. I read somewhere that asparagus seed was difficult to start but I found it not much different than growing marigolds. Pop it in potting soil when the temperatures are warm, water and wait. I now have 10 more little plants doing just fine.)



Asparagus is another vegetable that does well here and a small plot of it can provide a number of good meals in the summer, enough that you can experiment with new ways of cooking or using it. I've found when you don't have to pony up $2.00-$3.00 a pound for something, you can be more creative in using it. It's a sin to throw away asparagus in a cooking faux pax.

Asparagus is a large perennial so you will have to provide ample space for it. The plant can easily grow five to six feet tall and it doesn't always look that attractive. A small price to pay, though. They also are not fans of clay soils which most of us have. Building a raised bed for them is a good idea in our area; otherwise dig out a bed about two feet deep and amend heavily with organic matter. They need good drainage and a looser soil for the roots to penetrate.

Plant your roots (I'm assuming that's what most of you will start with) in a trench at least 8 inches deep by 10 inches wide. Apply fertilizer in the bottom of the trench and dig it in. The fertilizer needs to be below the roots. Asparagus roots are actually called crowns. When you purchase them make sure they are not dried out. The crowns will die quickly if they don't go into the ground before they start to send shoots up. Space the crowns every six to ten inches in the trench. Closer planting encourages the crowns to produce more spears earlier. Cover the crowns with no more than an inch of dirt and water and wait. Once the shoots and foliage show up, gradually start filling in the trench around the new growth. The spears will elongate quickly and produce a ferny looking plant. Gradually moving the soil around the new growth is better than dumping it around all at once. Fertilize with ammonium sulfate or ammonium nitrate each month during the growing season. The ferns should be dark green.

Watering is critical to asparagus—it needs more than other vegetables. If the tips of the ferns begin to dry or tip burn you need to give them more water. Once tip burn occurs, the stalk dies. The entire plant doesn't die, but another spear will appear. While this sounds like a good thing, it can actually sap the plants energy over the summer, reducing its ability to produce a flush of growth in the spring. It is better to keep the plant well watered throughout the summer. Mulching heavily will help maintain the moisture in the soil. Roots of asparagus can grow 5 to 6 feet deep, so water deeply! Continue to irrigate as long as the ferns are growing; once they start to turn an amber color in the fall you can stop watering, as the plants are going dormant.

Remove all the ferns once they have turned color. Do not cut the ferns while still green. While they may look unruly, it is important for the plant to dry naturally to invest that energy back into the roots. This will improve your crop each year. The dried ferns can be incorporated into the soil. Mulch to help preserve soil moisture and keep the soil warm.

Now patience comes into play. Next spring you will need to let the plant grow more so don't cut until the third year. Yea, I know that's hard but this will give the roots a chance to mature. By the third year, the

spears can easily be cut for up to six weeks before letting them go. After that, you can cut for up to eight weeks. If the size of the spears start to get smaller, quit cutting. The smaller diameter means you are beginning to impact the plant, so let the ferns develop for the summer to rejuvenate the plant.

Come spring, once soil temperatures get above 55°F spears will start to show. They grow fast, so you will need to keep on eye on them. A 3-inch spike one morning may be be fern-like by the next afternoon. Cut the spears when they are 5 to 6 inches long at ground level for immediate consumption. If you need to store them for awhile, cut them off one inch below the surface. Asparagus needs to be cut every day. Once a fern appears, it means the roots slow down formation of spears. You can remove the ferns to stimulate more spears.

Asparagus isn't troubled much by many pests or diseases. The biggest issue is to keep the beds weed free. Production will be reduced if they need to compete with weeds.

Springtime Asparagus Soup

1 1/2 pounds asparagus
1 large leek, white part plus an inch of the green chopped
6 cups vegetable stock
1 1/2 tablespoons olive oil or butter
1 small onion chopped
2 tablespoons raw white rice
salt and pepper to taste
lemon juice to taste

Slice the asparagus into three parts; ends, middles, and tips. Chop the middles and set the tips aside. Use the asparagus ends and leek roots and greens in the stock. Heat the oil in a soup pot. Add the leeks, onion and rice and sauté over medium-high heat for about 8 minutes, until the onion is slightly colored. Add 1 cup stock and stew for 10 to 12 minutes. Add the chopped asparagus and remaining stock and simmer partially covered, for 12 to 15 minutes. Cool briefly, then puree and pass through a food mill to get rid of any fibers. Taste the soup for salt, add a few drops of lemon juice to bring up the flavors, season with pepper. Return to pot to keep warm. Drop the asparagus tips into boiling salted water and cook until tender, about 4 minutes, then add them to the finished soup.

Variations:

Whip 1/4 cup cream until stiff and season with a pinch ofsalt, a little white pepper and 2 tablespoons chopped chervil or tarragon. Stir a spoonful into each bowl of soup.

Sauté 10 sage leaves with leeks, onions and rice. Fry 10 more sage leaves in 2 tablespoons olive oil until they're speckled, about 1 minute, then remove to paper towel. Crumble them into the soup just before serving. If the sage is blooming, add a few of the purple flowers to the soup.

from "Vegetarian Cooking for Everyone," by Deborah Madison

FROM THE EDITOR: Please send or email articles and announcements to the address below. Long articles will go in as soon as possible, announcements must be in by the 15th of the month to be included.

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MG Association News

Road Trip, Fun, Games, Plants and more plants!

Sign-up NOW for the annual trip (June 19) to the plant sale at the Arboretum in Flagstaff. Master Gardener Patti Conrad is once again leading a merry band gardeners to this great sale. Not only do they stop at the arboretum, but they sometimes hit some of the fine nurseries of Flagstaff. The van leaves from Prescott, but you need to call to reserve a seat. 928-778-4810

Alta Vista Garden Club presents "Prescott Garden Tour" on Saturday, June 12, 2004 from 8 a.m. to 4 p.m. The tour will include six exceptional private gardens hosted by members to answer any questions. Buy your tickets now at Wild Birds Unlimited or BellaHome Furnishings. You may visit the Garden Boutique and buy your ticket the day of the event.

MG Conference Speakers: We have almost completed the process of scheduling speakers. Here are some of the exciting programs: Lauren Springer & Scott Ogden on landscaping in difficult climates, John Greenlee on grasses. Other programs on succulents, roses, orchids, scented geraniums, landscaping, irrigation and many others. See next months newsletter for the full schedule.

Meeting Schedule

There has bee some changes to the Association meeting schedule, so please mark your calendar!

June 16, Cottonwood
July, No Meeting
August 18, Cottonwood
September 15, Prescott, elections
October, No meeting, MG Conference will take the place of the October meeting.
November, MG Picnic, date to be scheduled.

Cottonwood Farmers Market

We need a volunteer to organize a MG table at the market. It is Thursday afternoon until dark, starts in June. Contact Mary Barnes if you are interested.

Don't forget the Camp Verde Gourd & Garlic Festival, June 12 & 13. Buy the best garlic from local growers and see hot new creations from gourd crafters. Maybe pick up a few gourds yourself.

MG Association Meeting

June 16, 6:30pm, Cottonwood

Speaker: A panel of expert Master Gardeners will be available to answer any gardening question. Bring samples, insects, leaves, branches, leaves etc. Anything that will help identify the problem.

Please put any samples, insects in plastic bags or glass jars!

This is your chance to pick the brains of our most experienced gardeners!

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