Now that the really cold weather appears to be behind us and the temperatures are slowly warming, it is time to put in a spring vegetable garden.

Vegetable gardens provide delicious and highly nutritious entrees for the dinner table. There is nothing better than a fresh Caesar salad right out of the garden. I like to grow eggplant and cook up a batch in the Dutch oven outdoors over the coals. Watching and working with plants can add a new dimension to your life. It can be a source of physical activity. It can bring an awareness of the wonderful world right outside the back door.

We expect the average date of the last killing frost in central Pinal County to be somewhere in the first or second week of March, somewhat later in the higher elevations. Of course, that date will vary with local conditions throughout the valley. The lower valley areas will remain a little colder longer than those located up on the sides of hills. Recently, the last frosts and freezes have come in late January or early February. For that reason, we are recommending that you plant early, now would be good, and then watch the weather carefully.

By the end of the second week in March, it generally is pretty safe to put in frost tender plants. On the occasions of those late winter storms that drop temperatures below the freezing mark, young, susceptible plants can be covered with quilts, blankets or other cloth coverings for the few nights where damage might occur.

The path to a successful vegetable garden is not difficult or long. Ten carefully considered steps will make it easy to set up and nurture a successful garden.

First, choose an area with plenty of sunlight. Most vegetables, especially fruiting vegetables, like tomatoes, squash and melons, do best with full sun exposure. Leafy and root vegetables will tolerate partial shade. Do not plant gardens under or near trees or large shrubs; their roots will rob fertility and water from the vegetable plants. Do not plant vegetables in the narrow, shaded space between houses and walls. They just will simply not do well.

Second, a loose, fertile, level, well-drained soil is best for vegetable gardens. If possible, avoid heavy clays and high sand soils. If caliche is present, it must be dug out and removed. Avoid areas that are crusted with alkali salts or infested with bermudagrass, nutsedge or Johnsongrass.

---

TIME TO PREPARE SPRING GARDEN ... CONTINUED ON PAGE 2
Third, the success of a garden can be greatly influenced by the varieties that are selected. Choose from recommended lists and from those known to do well in this area. It is a good idea to try one or two new varieties each year. This will not only provide an interesting change from year to year, but also search for that new type that performs just right for specific local needs. Plant them next to your old favorites for comparison. Keep a diary from year to year as to what varieties perform best.

For mini-gardens, try the dwarf and the more colorful varieties. Seed catalogues will be a great help in finding these specialty varieties.

Fourth, organic matter makes the soil loose and easy to work and improves water-holding capacity, drainage and aeration. Manure, compost, peat moss and leaf mulch are materials commonly used. Composted manure is easy to use and is relatively free of weed seeds.

Apply a layer of organic matter two to three inches thick on the garden area about one to two months before planting, if possible. Work it into the top ten to twelve inches of soil. A thorough irrigation at this time helps leach harmful salts from the root zone. If poultry manures are used, apply them at half the rate of other manures.

Fifth, a fertilizer containing both nitrogen and phosphorus, when applied before planting, will benefit most garden crops. Although soils vary in fertility, a typical fertilizer application would be one to two pounds of 16-20-0 ammonium phosphate fertilizer on a ten by ten square foot area. Be sure to spread the fertilizer evenly across the entire area. Also, three to five pounds of sulfur on the same area will combat the natural alkalinity of the soil. These materials should be plowed, tilled or spaded into the top six to eight inches of soil shortly before planting.

Sixth, irrigation is necessary for all garden crops in Arizona because of limited and uncertain rainfall. Add sufficient water to keep the soil moist, but not saturated, throughout the root zone of the plant and throughout the growing season. Because excessive fluctuations of soil moisture adversely affect plant growth and quality, regular applications of water need to be made to prevent the soil from becoming too dry.

Seventh, early March is a good planting season for both a late winter and spring and early summer garden. Beans, beets, carrots, eggplant, peppers, radishes, spinach, and sweet corn can all be planted up to March 15. Cucumbers, melons, squash and tomatoes can be planted through March. Generally, the earlier these latter plants can be started, the more chance they have of putting out a crop before they are attacked by the heat and diseases of summer.

Eighth, watch for weeds. The soil abounds with the seeds of many plants. These seeds have accumulated over the years lying dormant in wait for just the right conditions for germination and growth. A vegetable garden provides those conditions. Removal of weeds will enhance the growth of desirable plants. Even small weeds can slow down the progress of new seedling vegetables, so pull them early.

Ninth, early spring gardens are often attacked by aphids, mealy bugs and other insects. These populations can explode quickly so a careful watch is important. Early infestations of these insects can usually be controlled by spraying them with a strong stream of water from the hose. Beneficial insects, like lady beetles, lace wing larvae, and big-eyed bugs, will be attracted to these insects and will often clean up these pests if the population does not get out of hand.

Tenth, harvest and enjoy the vegetables in a timely way. Many vegetables produce better if they are regularly harvested. Early removal of tomatoes, squash and melons keeps the plants in the production mode. An overload of ripe fruit tells the plant that it is time to shut down and lay off fruiting. Leafy vegetables, like leaf lettuce, will produce new foliage when the original leaves are harvested. By following this suggestion, even small garden plots will be highly productive.

With a little planning, some tender care and considerable good, old-fashioned work, a gardener can soon be enjoying the fruits of all labors.
Are you killing your saguaro with kindness?

As a landscape plant, the saguaro does not take a lot of extra care. In fact, with just a few exceptions, there really isn’t much to do. It doesn’t need fertilizer. The cacti have their own mechanism for feeding themselves. It doesn’t need much water. It stores moisture from our intermittent rains to carry it through most dry periods. It doesn’t need to be pruned, cultivated, or groomed. Sounds pretty good, right? Unfortunately, even though they are pretty much independent, our landscape saguaros occasionally do have problems. How come?

In the case of landscape saguaros, I have to say that many problems are caused by a human decision or action. However, before we go over those, let’s refresh our memories with some basic facts about this interesting plant.

First, that cute little saguaro sitting in a container can eventually become huge. At maturity, the saguaro can reach 50 feet in height and can spread its arms up to 25 feet from side to side. A large specimen can weigh several tons. If it falls on a house, vehicle, or person it can cause a lot of damage.

The size of the plant is not the only characteristic that makes it spectacularly unique. While the average number of arms that it will grow is about five, the maximum number observed is currently about fifty. That is a lot of arms. The saguaro has a trunk that is conspicuously ribbed and is protected by stiff, straight spines. It develops creamy white flowers in May on the tops of the main trunk and branches. These flowers produce a purple, edible fruit that have been used for various purposes by Native Americans for thousands of years.

Saguaro Cacti Problems

- Saguaros are native to Southern Arizona and Northern Sonora. There are also a few on the west bank of the Colorado River in California. Since they only live in the Sonoran Desert, they are distinctive to our area. If you see a movie with real saguaros as part of the scenery, you can rest assured that the movie was filmed somewhere nearby.

How fast do they grow? Saguaros living on their own out in the wild under normal rainfall patterns will average about two inches of growth each year once they have reached a height of about two feet. They usually put out their first arms somewhere between fifty and a hundred years of age. However, saguaros growing in an landscape where they get plentiful water will grow much faster. I have seen some irrigated specimens put out arms in half that time.

Young saguaros are not well protected by spines and seedlings that have germinated in the open often do not survive. They seem to be prized by small mammals, including mice, ground squirrels, and rabbits. Most saguaros that survive have been fortunate to germinate and begin life within the protective canopy of trees or underneath other protecting structures like over hanging rocks. It is quite common to see saguaro cacti growing up through the canopy of larger trees and shrubs. Because of their protective role, they are often called “nurse trees” and may often coexist with the saguaros for many years. Young saguaro seedlings are said to have about a twenty million to one chance of growing to maturity.

The central woody ribs are the skeleton of the plant and allow it to stand upright as it grows. The ribs have been used for millennia by Native Americans for building materials, tools, and other uses.

Finally, nesting holes pecked into the saguaro by the Gila woodpecker or its relatives are perfectly normal and are not a major problem for the cactus. The saguaro quickly forms a hard, corky layer around the perimeter of the cavity which seals off the soft, moist interior of the plant to the harsh outside environment. Once the woodpecker is finished with the nest other birds often move in. Some saguaros have so many bird nests in them that they look like a bird apartment complex.

So what are the major problems occurring among the saguaros growing in landscaped areas? Let’s start with the dreaded naturally-occurring, bacterial disease called “necrosis of the giant saguaro.” It can be quite deadly. The disease mainly affects older plants but can also occur in younger ones as well. There is usually

- Saguaros Cacti Problems . . . Continued on Page 4
not much to be done when a specimen starts to show symptoms. The plant does have a chance to survive if it can seal off the damaged area by creating a corky-textured “boot” around the infection. Once the disease invades the central core of the plant, however, the chances for survival plummet.

While the owner is justifiably saddened by the loss of a giant saguaro, it may be of some consolation to view the rot as a natural part of the desert environment. The active rot is a wet spot in a dry place and many desert dwellers depend upon these diseased plants for moisture. In addition, calloused over dry-rot pockets in surviving saguaros can offer places of refuge for birds and other animals.

The rest of the problems are people related. The first is planting the baby saguaro in the wrong place. This usually means planting it too close to something, like a house or some other structure, or in a place where it could cause problems if it toppled over.

The pressure generated by growth at the tips of the main stem and arms is strong enough to push the roof right off a building. I have actually seen a saguaro lifting up and splitting the joints of a pitched roof when the tip of the stem came in contact. Not many things can withstand that kind of force.

Sometimes these mammoths do fall over for one reason or another. If one is planted too close to a carport, sidewalk, or structure, well, you get the picture. I sure wouldn’t want to be near one if it decided to come down! A leaning saguaro growing out where it can cause no damage if it fell is not near the threat as one growing next to where you park your car or where children play.

A related problem comes when the saguaro is planted close to an irrigation system. Saguaros have a large, expansive root system that is capable of hunting down water at some distance from the main plant. If they find it, they use it. They may not need it, but they will pick it up and try to store it.

When a saguaro reaches its storage capacity, there is danger of it splitting open like an over ripe watermelon. That is not a good thing. Look for longitudinal cracks between the ribs. Sometimes they heal over and sometimes they do not. How do you know if it is reaching the danger point? If the cactus looks stretched tight between the ribs, it has plenty of water. A drought-stressed plant will have deep, crevassed space between the ribs. If it looks in danger of splitting, cut the water off.

So, what are the take home messages here? There are three. 1) If you decide to plant a saguaro, pick a spot that is far enough away from the center of activity that if it fell one day, it would not damage anything. 2) To prevent over watering, do not put the plant on a drip irrigation system. Better yet, do not plant a saguaro anywhere near plants that are hooked to a drip irrigation system. 3) In the event that there is a drought, like the one in which we now find ourselves, simply drag a hose out to the cactus and give it an extra drink of water one or two times a year. The cactus will tell you when it is thirsty.

The stately saguaro is often planted to bring variety and interest to residential and business properties throughout its native range. Its graceful, slender shape; its imposing size; and its magnificent, eye-catching individuality make it a perfect plant to serve as a focal point in ultra low water use landscapes. While it is relatively easy to care for, sometimes we give it more kindness than it really needs and that can cause problems down the road.
Are you familiar with how Integrated Pest Management can help you in your garden?

Integrated Pest Management, IPM for short, is a pest and disease control system that has been successfully used in commercial agriculture for many years. It can also be used to help improve the health of garden and landscape trees, shrubs and annual plants. However, it is important to realize that it is not a simple “one size fits all” approach. It requires taking into consideration all of the various conditions, interrelationships, and effects experienced by the garden area as a whole, not just one or two plants. It is a method to manage the entire system to the benefit of the plants.

IPM, does not just rely on one or two methods for controlling pests, but seeks to bring all possible resources to bear to help keep insects, weeds and diseases at a non-threatening level. Those who employ IPM principles do not necessarily try to eliminate every single pest, but do strive to keep pest populations at an acceptable level.

It is a known fact that healthy plants can be exposed to some feeding by insects or invasion of disease without suffering long-term or permanent damage. It is only when the pest or disease population reaches harmful levels that the health and productivity of plants can be affected. One insect bite or sting, unless we are extremely allergic, is probably not going to be a big thing, but a whole bunch of bites or stings can really become a pain. It is the same in the plant world.

In agriculture, where profit matters, harmful levels are called the “economic threshold”, or the trigger than requires some kind of intervention in order to prevent economic loss. In the garden, I call this trigger the “worry point”, or the point at which a gardener needs to worry about taking some sort of action. When populations exceed the worry point it is definitely time to take corrective action; below it, sit back, relax and enjoy the garden.

In the home garden, people often worry too soon about infestations of insects, but sometimes they wait until it is too late. The trick is to catch the problem at just the right time in order to protect both the plant and the environment. This is the goal of IPM.

For example, too often when even one or two insects are spotted in the garden, we feel obliged to get out the sprayer and wage battle. In the minds of many, it does not matter if the insect is feeding on a part of the plant that will never be harvested, or whether there are many beneficial insects mixed in with the pests. We think to ourselves, sometimes erroneously, “I have to spray!” Following the principles of IPM, we would identify the pest, estimate the damage and then make an informed decision. In the long run, sometimes we need to spray, and sometimes not.

So, where do we get started? First, to successfully use Integrated Pest Management, it is essential to know the enemy. Which of all the insects, weeds, or diseases is actually causing the problem? If it is an insect or weed problem, how many are there? Are the numbers there harming the desirable plant? What are the predators and parasites doing? Are they keeping up? What is the weather doing? Will it increase or decrease the population of insect, weed or disease pests?

Once these questions are understood and answered to our satisfaction, an intelligent decision can be made about whether or not we are at the worry point. If indeed it is time to really do something, spraying pesticides may not be the best answer. IPM seeks to identify the best method for controlling these pest problems using cultural or biological control methods first, then chemicals as a last resort. Using IPM, agriculture has been highly successful nationwide in reducing the number of pesticide sprays to a bare minimum. This has translated into a big reduction in chemicals released into the environment. Once viewed as polluters, most agricultural producers are now seen as good stewards of the environment. Gardeners need to come to see themselves in this light. IPM is the key.

Once the problem has been identified and a population estimated, how do you know when it is actually time to worry? This is where experience comes in. Personal experience based upon sound scientific principles is
the best way to know what is right for your garden situation. Cooperative Extension can help. Trained Master Gardener volunteers are available to help answer these kinds of questions and Cooperative Extension bulletins can provide timely and accurate information for pest and disease control.

Most recommendations will center around the selection of various control options when action is required. Biological control will always be a first line of defense. There are so many different types of predators and parasites in the environment naturally that they often do the job by themselves. This is one reason why we do not want to be too quick to spray harsh chemicals. It kills the beneficial insects right along with the pests. Once the beneficial insects are gone, there is nothing to keep the pest insect in check and they often come back worse than before the application was originally made. If beneficial insect populations in the garden are low, additional insects can be purchased and released to build up the friendly forces.

Another way to control pests is through cultural control. Proper spacing of plants, proper watering and fertility, and cleaning up and removing diseased plant parts are examples of cultural control. In the desert, proper plant care is absolutely essential for maintaining good plant health. Improper watering, under-fertilization, leaving stubs after pruning and over-crowding plants in the garden leave many plants seriously harmed or dead each year. Too often, we try to cover up problems caused by improper care with chemical sprays.

Chemical control is the last resort. Pesticides should be used only when all other means have been exhausted and then the least-toxic materials should be considered first, especially if beneficial insects are present. The primary concern is toxicity to insect and mite predators. Secondly, the material should be least-toxic to wildlife, pets and children. Insecticidal soaps and oils usually have less effect on non-target animals than more toxic materials.

When selecting a chemical control agent, it is important to always read the label. The label will give you all of the information you need to make a safe and effective pesticide application. The label should be read at least three times: once before it is purchased, once before it is mixed and used and once when it is time to clean up after the application and before storage. Keep pesticides away from children and pets for safety.

Integrated Pest Management, or IPM, can be a big help to the home gardener in protecting the health and well being of garden and landscape plants. At the same time it can help protect the environment in which we all live.

Trade names used in this publication are for identification only and do not imply endorsement of products named or criticism of similar products not mentioned.
The time to prune rose bushes is just about up so if you still have not done that chore, you need to set it as a priority. However, don’t just go out and whack away at the bush. In order to produce good quality flowers, pruning has to be done correctly!

Pruning is a critical step in the proper management of roses. Done properly, the plant flourishes. Done improperly, the plant can slowly dwindle and decline. Before you get out the pruning tools though, let’s take a moment and talk about some basic principles.

Pruning is an art as much as a science, and just like an artist, you have to have the end product in mind. Hybrid teas and grandifloras are pruned to one style and floribundas, polyanthas and many of the shrub roses must be pruned to another. In the case of roses, so one size does not fit all.

A good plan for beginners, and those who would like a refresher course, is to visit a professionally tended rose garden or find a friend who knows what they are doing. By looking at a properly pruned rosebush, we can fix in our minds the meaning of the principles that we will be discussing here today.

Roses should be pruned during late December, January and early February. We choose to prune at this time because it is a chore that is best done during dormancy, the plant’s resting period. Most plants are genetically geared, you see, to take a little time off during the cool, winter months. Surgery on a plant, just like on a human, is best done while the patient is, if not asleep, at least resting. Some people make the mistake of pruning too early or too late which can shorten the life of the plant.

The main purpose in pruning roses is to cut out dead and diseased wood, thin out weak and crossing canes, head back the more vigorous canes, and generally shape the bush. If we make cutting decisions based upon this priority ranking, we cannot go far wrong.

The question of how much to cut back a rosebush is always of much concern. The questions surrounding which canes to keep and which canes to remove, along with the questions of where to make the pruning cuts are all dependent upon the specific plant in question. More vigorous plants can be cut a little shorter, while spindly, weak plants should be only lightly pruned.

In this light, it is also good to remember that healthy, vigorous canes can produce blossoms for four to six years, or even longer. Unfortunately, the older the canes become, the slower they grow and the less flowers they produce. A good rule of thumb is to consider removing canes after their second or third year. With new canes forming each year and older canes being pruned out, there will be a constant turnover of canes to keep the bush youthful and in good productive health.

Older canes can be distinguished from the younger canes by their appearance. Younger canes are pencil-sized or slightly larger, while older canes develop silvery sheen and usually are much thicker, perhaps up to an inch in diameter on vigorous plants.

If a particular cane fails to produce good blossoms, the entire cane should be removed by cutting it back to the crown. This will stimulate the growth of other canes from the crown area. If old canes are left on the bush too long, it becomes difficult for the plant to grow new replacement canes because of shading and overcrowding. When removing old canes, cut as close to the crown as possible. Never leave a pruning stub.

Before removing canes, however, first check the crown area to make sure that there are enough live, healthy buds near the base of the cane to produce new canes. If you do not see these buds, do not remove the entire cane. In this case, cut back the cane to a point just above a good bud or a lateral branch. This will ensure that there will be new growth on that portion of the plant.

To prune the tops, make the cut within one-half inch of the bud and on a slight slant opposite from the bud. Make sure that the bud is on the outer side of the branch.

With few exceptions, rosebushes tend to grow upright. They can be made to spread by always cutting back to outside buds or lateral branches. Outside buds are those on the outside edge of the branch or cane, whereas, inside buds face the inside of the plant.
There is a huge difference in the growing habits of rose varieties. While it is impossible to set a general pattern as to pruning height or the number of canes to leave fitting every variety of every type of rose in every state of vigor in this short space, we can provide some general guidelines.

Taller growing varieties produce long canes and often many more flowers than smaller types. These and other varieties of this type should be allowed to grow taller and with a wider spread than less vigorous varieties.

When cutting back the growth from the previous season, cut from one-third to no more than one-half for hybrid teas and grandifloras. Floribundas and polyanthas should only be cut back by one-fourth and leave as many strong new canes and stems as the plant produced. Climbers do not require much pruning and are generally only thinned out by cutting out old, diseased or damaged canes.

Another way to approach the pruning of roses is to select from among three pruning styles. In selecting one of these options, it is important to keep in mind the type of plant and its growth habit as well as a consideration of the good and bad consequences of selecting a particular style. Here are the three styles.

The heavy pruning style is used to force a few, very large, long-stemmed blossoms of show quality. Because it severely limits the size of the plant and the number of leaves producing energy for the plant, this style often means that the bush will be short-lived under our desert conditions. Heavy pruning is accomplished by thinning the bush to three or four canes each year. The remaining canes are then cut back to six to eight inches high.

Moderate pruning in our warm deserts produces vigorous growth and more flowers than heavy pruning, but the flowers will have shorter stems than those pruned to the heavy style. Moderately pruned roses are left with five to twelve canes about eighteen to twenty-four inches high. This develops a larger bush that shades the ground and results in less injury from heat. This method works well in the average garden.

Light pruning requires a minimum of cutting. Plants are allowed to remain three to four feet high after pruning. This type of pruning produces a profusion of showy, but short-stemmed blossoms. Plants pruned in this manner are best used as flowering shrubs. These large bushes are very vigorous and productive, but require wider spacing than smaller bushes, unless a hedge effect is desired.

If you have questions about this newsletter, have any plant related problems, or wish to have a publication sent to you, please call (520) 836-5221 x204 and leave a message, or call (520) 374-6263 to reach one of our volunteer Master Gardeners. When leaving a message, please clearly state your name and your telephone number. If you have a plant problem and are able to email a picture, please send a picture with any information you can provide about the plant, and your contact information to our diagnostic team at macmastergardener@gmail.com and a Master Gardener will contact you. You are also welcome to stop by our office at 820 E. Cottonwood Lane, Bldg. C in Casa Grande.

This newsletter is available to view on our website at:  http://extension.arizona.edu/pinal

Richard D. Gibson
Extension Agent, Agriculture
RDG/te/sh/aw

59 mailed copies
261 emailed
How to connect with Rick Gibson online…

Blog: Booming Deserts
riksgardenspot.blogspot.com

Facebook:
https://www.facebook.com/PinalCountyGardenandLandscapeProgram

Twitter:
https://twitter.com/RickGibson4