



COLLEGE OF AGRICULTURE AND LIFE SCIENCES COOPERATIVE EXTENSION Pinal County

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Newsletter

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PLANTING BARE ROOT TREES AND SHRUBS

It has been a while since we last reviewed the rules for planting bare root plants and since we are now square in the middle of the best time to plant bare root, perhaps we should take a look at them once again.

Many of our shade trees, fruit trees, and roses are sold in the winter without soil around their roots. Deciduous plants, trees and shrubs which tend to shed their leaves during the winter months, are particularly well suited to this method of transplanting.

When a nursery receives a shipment of bare root plants, they are placed in a "healing in" bin or pit which contains sand, sawdust, peat moss or similar material. This soil mixture maintains moisture around the root system and makes it possible to remove plants with ease.

Failure of plants to revive in the spring after transplanting by the bare root method can be attributed to many factors, but there are some steps that can be taken to minimize plant loss. The following ten simple rules were first assembled more than twenty years ago by the noted horticulturist, Steve Fazio. They bear another look today. Steve was a professor in the Department of Plant Sciences at The University of Arizona until his retirement.

Rule Number 1. Plant Early. Plants are received by nurseries shortly after they go into a dormant condition in the growing grounds. They are placed in the "healing in" pits until the buds begin to swell in late spring. They are then placed in containers for future sale at a significantly higher cost. Thus, a great benefit of bare root plants is cost.

Late in the dormant season, plants start producing fine root hairs. These root hairs play an important role in tree recovery and it is best if this development takes place while the tree is planted in the yard rather than in the pit. Most nurseries now have bare root plants for sale.

Rule Number 2. Packaged Plants Require Inspection. Some bare root plants, especially roses, are sold in packages. The root system is encased in a water-absorbing material and the tops are exposed. Some garden centers may be careless in checking the packages for moisture and this may result in the death of plants. Dead plants will have shriveled bark or discolored stems. If packaged plants are purchased shortly after they arrive at stores, danger from lack of root moisture will be lessened.

PLANTING BARE ROOT TREES AND SHRUBS ... CONTINUED ON PAGE 2

IN THIS ISSUE:	
Planting Bare Root Trees and Shrubs	1
Pomegranate	3
Pinal County Master Gardeners	5
GROWING ORNAMENTAL GOURDS IN PINAL COUNTY	7

PLANTING BARE ROOT TREES AND SHRUBS ... CONTINUED FROM PAGE 1

Rule Number 3. Protect the Roots. After purchasing bare root plants from nurseries, protect the root system from drying while transporting plants home. Even though the plant is dormant, the root system can be damaged by exposing it to drying winds. Place the root system in a container of water or place moist soil around the roots after you arrive home and allow it to remain protected until planted in the selected site.

Rule Number 4. Be Prepared for Planting. Always have the tree hole prepared ahead of time so that you can plant the tree or shrub immediately after arriving home. Many failures can be attributed to delays or improper storage. Be sure the soil is wet at planting time and water deeply immediately after planting. It is also a good idea to shovel out a hole that is wider than it is deep. Most of the new roots will grow to the side rather than downward and the loosened soil will facilitate root growth.

Rule Number 5. Avoid Root Contact with Undecomposed Manure. Tree holes should be prepared several weeks in advance of planting, especially if manure is being used in the soil mix. Manure and soil should be mixed at a ratio of approximately 6 shovels of soil to 1 shovel of manure. Mix thoroughly before back filling. If there is not sufficient time to allow the manure to decompose, peat moss or similar materials can be used at the same ratio as the manure. Peat moss can be in contact with roots with no danger of root damage. To avoid any possibility of burning with undecomposed manure, fill in around the roots with soil that does not contain manure.

Rule Number 6. Wait for New Growth Before Fertilizing. It is best to apply mineral fertilizer when the plants begin to leaf out. When applying fertilizers, be sure to follow package directions carefully to avoid burning tender new roots. Newly-planted trees and shrubs can be injured by over-fertilizing.

Rule Number 7. Plant Correctly. Poor recovery of bare root plants in spring is often related to improper distribution of the root system in the tree hole. A mound of soil similar to a pyramid should be formed in the center of the tree hole. This will permit placement of the root system on top of the pyramid. Distribute the roots evenly while back filling.

Rule Number 8. Do Not Bury the Graft Union. Many plants are grafted on appropriate rootstocks and the graft union must be kept above the surface of the soil to prevent soil-borne diseases from gaining entry into the plant through the graft. The area where the rootstock is grafted can be detected by the characteristic bend in the stem. The graft should be 2 or more inches above the soil level when the tree is finally planted.

Rule Number 9. Water Immediately after Planting. Water deeply to settle the soil and remove air spaces. Additional soil may be needed after the initial irrigation. Be careful that the graft union remains above ground.

Rule Number 10. Prune and Select Scaffold Branches. Some deciduous trees and shrubs are sold with the entire top left intact. It is important to reduce top growth by 50% and to select scaffold branches on trees consisting of not less than three nor more than five. Scaffold branches should measure approximately 12 to 18 inches in length after pruning.

Following these simple basic recommendations will give the plants an excellent opportunity to make a rapid recovery in the spring.

For more information on how to plant bare root plants, ask for a copy of the Cooperative Extension leaflet, "Planting Bare Root Plants."

Issued in furtherance of Cooperative Extension work, acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture, Jeffrey C. Silvertooth, Associate Dean & Director, Economic Development & Extension, College of Agriculture and Life Sciences, The University of Arizona. The University of Arizona is an equal opportunity, affirmative action institution. The University does not discriminate on the basis of race, color, religion, sex, national origin, age, disability, veteran status, or sexual orientation in its programs and activities.

Pomegranate

There are many positive features of the pomegranate tree, including gorgeous flowers and tasty fruit. Now would be a good time to plant one in your yard.

Introduced into California by Spanish missionaries over two hundred years ago, pomegranate has been a mainstay in many desert gardens here in Arizona, for many years. Even today, when the pomegranate has slipped some in popularity, pomegranate trees can still be seen growing in the older sections of many communities.

Pomegranates work well in desert landscapes because they require less water, fertilizer and general care in order to be happy. In these times of drought, low water use plants pay dividends, not only in savings on the water bill, but also in helping protect a finite resource.

Pomegranates are native from Iran to the Himalayan Mountains in northern India, but thrive in semi-arid, mild-temperate to subtropical climates throughout the world. They are naturally adapted to regions with cool winters and hot summers. Pomegranates will live for many years. There are specimens in Europe that are known to be over two hundred years of age.

High humidity seems to adversely affect fruit formation. Because of this, our arid, usually low humidity climate is perfect for the pomegranate. The tree can be severely injured by temperatures below 12° F.

Properly cared for, pomegranate trees can reach heights of fifteen to twenty feet and as many feet wide, but most trees, for one reason or another, rarely exceed ten feet in height and diameter. Dwarf varieties are available to fit smaller areas.

The pomegranate is usually deciduous, but the leaves will remain on the tree year round in warmer areas. The trunk is covered by a red-brown bark changing to gray as the tree gets older. You can also tell a pomegranate tree by looking at the leaves. The glossy, leathery leaves are narrow and shaped like a lance tip. There is a strong tendency for the plant to send out sucker shoots from the base of the plant.

Attractive scarlet, white or multi-colored flowers lead to nearly round, two and one-half to five inch wide fruit. The pomegranate is self fruitful, meaning that it does not need another tree for pollination, and the flowers can use pollen from themselves or will accept pollen from other flowers brought to them by insects. Cross-pollination increases the fruit set. The wind does not play an important role in pomegranate pollination.

The fruit is surrounded by a tough, leathery skin or rind which is typically yellow inside and light or deep pink or rich red outside. The interior of the fruit is separated by white, spongy, bitter tissue into compartments packed with sacs filled with sweetly acid, juicy, red, pink or whitish pulp. In each sac there is one angular, soft or hard seed. High summer temperatures are essential during the fruiting period to get the best flavor.

The fruit matures and is ready for harvest in the fall, usually in November. The fruits are ripe when they have developed a distinctive color and make a metallic sound when tapped. The fruits must be picked before they become overly mature because they tend to crack open late in the season, particularly after they have received a rain or irrigation.

Once off the tree, the pomegranate can be stored at a temperature of 32° F to 41° F. Some have been able to keep the fruit in storage for up to seven months within this temperature range and at 80 to 85 percent relative humidity without shrinking or spoiling. The fruits improve in storage, becoming juicier and more flavorful.

The fruit can be eaten right off the tree by deeply scoring the shell several times vertically and then breaking it apart. The clusters of juice sacs are then lifted out and eaten. The sacs also make an attractive garnish when sprinkled on various dishes.

- POMEGRANATE. . . CONTINUED ON PAGE 4

POMEGRANATE . . . CONTINUED FROM PG.3

Pomegranate fruits are most often used as juice. After removing the sacs, run them through a basket press or by reaming the halved fruits on an ordinary orange juice squeezer. Another option begins with warming the fruit slightly and rolling it between the hands to soften the interior. A hole is then cut in the stem end and the fruit is placed on a glass to capture the juice as it runs out. Squeeze the fruit from time to time to get all the juice. The juice can be used as a fresh juice, to make jellies, sorbets or cold or hot sauces as well as to flavor cakes, baked apples and other specialties. Pomegranate syrup is sold commercially as grenadine. Pomegranate has been found to be relatively high in antioxidants, compounds that help protect the body from disease.

The pomegranate does best in well-drained ordinary soil, but also thrives in saline soils or even rock strewn gravel. In Arizona, the trees should be lightly fertilized with two to four ounces of ammonium sulfate or other nitrogen fertilizer once during each of the first two springs after planting. After that very little fertilizer is needed, although the plants respond to an annual mulch of rotted manure or compost.

Once established, pomegranates will take considerable drought, but for good fruit production they must be irrigated regularly. Newly planted trees should be watered every two to four weeks during the driest part of the first season. The plants are tolerant of moderately saline water and soil conditions. Regular irrigation of mature trees will help prevent fruit cracking later in the year.

New plants should be pruned back when they are about two feet high. From this point you should allow four or five shoots to develop, but make sure that they are evenly distributed around the stem to keep the plant well balanced. These shoots will develop into scaffold branches that will bear the fruiting wood. Scaffold branches should never be lower than one foot above the ground. Any shoots or branches below this should be considered suckers and removed.

As new branches develop from off the main scaffold branches, make sure to shorten them during January or February each year for the first three years to encourage the maximum number of new shoots on all sides, prevent straggly development and achieve a strong well framed plant. After the third year, only suckers and dead branches are removed. Since the fruits are borne only at the tips of new growth these extra branches will increase the fruit yield.

The pomegranate can be raised from seed but the plant that results may not have the same characteristics of its parent. For that reason, most new plants are made from cuttings. Pomegranate cuttings root easily and plants from them bear fruit after about three years. "Wonderful" is the most common variety grown in this area.

To take cuttings, cut sections of mature, one-year old wood twelve to twenty inches long and remove all of the leaves. Treat the bottom end of the cuttings with rooting hormone and insert about two-thirds their length into the soil or into some other warm rooting medium. Plants can also be air-layered but grafting is seldom successful. Keep the medium well watered and warm and soon roots will form. These cuttings can then be transplanted into place.

Pomegranates are relatively free of most pests and diseases. Minor problems are leaf and fruit spot and foliar damage by white flies, thrips, mealybugs and scale insects, but the roots are seldom bothered by gophers.

Pomegranates can be planted close together for windbreaks, hedges and screens or planted by itself to make a highly decorative accent plant in the landscape. Pomegranates should be placed in the sunniest, warmest part of the yard or orchard for the best fruit, although they will grow and flower in part shade.

Pomegranate may never top the list of most desired fruits, but the unique taste of the fruit along with tits hardiness and attractiveness make this plant a good choice for any desert landscape.

PINAL COUNTY MASTER GARDENERS

As part of the University of Arizona Cooperative Extension, a department in the College of Agriculture and Life Sciences, Master Gardeners volunteers are available to help local residents with their garden and landscape questions. I am very proud of them all.

Extension Master Gardeners are individuals who love not only to grow plants themselves but also enjoy helping others. In Pinal County, these volunteers donate thousands of hours each year to help with many different types of projects countywide. If this sounds like fun, and you would like to get involved, we would welcome any who might be inclined to join one of our working groups. We will find a project that matches your interest and that will benefit your community.

The Cooperative Extension Master Gardener program first began in the state of Washington in the early 1970's. Because of its success there, it was adopted in state after state. Our Pinal County program began in 1982 when we trained our first group of volunteers. It has grown in numbers of volunteers and service hours since that time.

So, you ask, just what is an Extension Master Gardener program? Master Gardener volunteers are individuals who are certified by the land grant university or college within a particular state to work along side a local Extension professional to help plan, deliver and evaluate local garden and landscape programs. In Arizona, the University of Arizona is the land grant institution that conducts Extension programs statewide.

Certified University of Arizona Master Gardeners volunteer to serve, fill out an application indicating their gardening experiences and why they want to serve, successfully complete a rigorous 17-week training program and pass a certifying examination that allows the University to accept them as trained and certified volunteers. To complete their certification, they must perform fifty hours of service during the first year and then twenty-five hours every year thereafter in order to maintain their certification. They must also report six hours of approved gardening education each year. They have to stay current in their knowledge.

Why do we use the name "Master Gardeners?" There are many meanings for the term. I know for a fact that there are many gardeners throughout the county, state, country and world who are masters of the skills needed to grow a successful garden. They quite appropriately could be called master gardeners. I have met many during my career and have nothing but respect for them and their skills. In an alternative meaning, you will occasionally hear of people who use the name master gardener to gain credibility so that you will buy something from them. Master Gardeners, with capital letters, is a title used to describe Extension volunteers.

When we talk about Extension Master Gardeners we are really talking about everyday people who have gained experience and want to share it. You can be sure that none of our Extension Master Gardeners are in it for the money. As volunteers, they do not get paid, except in the satisfaction of knowing that they have helped someone. They will not try to sell you a product; and they certainly are not in it to have people look at them as fountains of all knowledge. My Master Gardeners, if you asked, would simply say that they are willing to learn and want to share. You can be sure that when they answer your question, they are giving you local, research-based information authorized by the University of Arizona Cooperative Extension.

While some Extension Master Gardener programs focus on a few projects or tasks, in Pinal County we tend to take a broader approach. The projects in which our volunteers are engaged are often a reflection of their own interests and experience. In every case, you will note enthusiasm for what they do and the love they have for plants.

In Pinal County, our area of service is so large that we have several nuclei of volunteers. We call these individual clusters "working groups." Currently there are five working groups countywide including our newest group in San Tan Valley. The other four working groups are Central Pinal County, focusing on Florence, Coolidge, Eloy and Casa Grande; Maricopa, housed at the Maricopa Agricultural Center; Saddle Brooke on the south side and Superstition Mountain in northern Pinal County.

MASTER GARDENERS . . . CONTINUED ON PAGE 6

MASTER GARDENERS . . . CONTINUED FROM PAGE 5

All working groups do some of the same stuff but also have additional projects that are unique to their area. Master Gardeners in working groups interact with the public. All answer questions and share insights when contacted. Some sponsor and teach at public seminars, others give lectures and help teach down to earth, non-university credit classes. Still others help me conduct field research or communicate through written and electronic media. Some answer garden calls, organize field days, operate office equipment and take care of teaching collections; and these are just a few of the many projects we have going on. However, the working groups each are different in key ways.

The Central Arizona working group works in direct support of the local Extension office by duplicating and collating many of the bulletins available for distribution from the office. They also sponsor and staff a booth at Pinal County Fair and are available for consultations by appointment in the Pinal County Extension office conference room in Casa Grande.

The Maricopa working group focuses on doing research and public outreach by managing a demonstration garden and orchard at the Maricopa Agricultural Center. They also sponsor plant clinics and open house seminars at that location. They conduct an open door plant clinic Monday through Friday from 9 am to 12 noon at the Maricopa Agricultural Center Center

The SaddleBrooke group is located so far south that many of the volunteers have a Tucson mailing address, but they all live and pay taxes here in Pinal County. They offer plant clinics, diagnostic services and seminars in their community.

Finally, the Superstition Mountain working group sponsors demonstration gardens, public seminars and other educational activities in the Apache Junction, Gold Canyon and Superior areas. They also volunteer many hours of service at the Boyce Thompson Arboretum.

As you can tell, our volunteers enjoy performing a wide variety of activities. In fact, the key is pretty much the limit when it comes to thinking up projects. That is one of the exciting parts about all of this. There is always something new to learn.

GROWING ORNAMENTAL GOURDS IN PINAL COUNTY

Ornamental gourds are fun to grow and even more fun to figure out how to use them.

As the weather warms, it is time to think about the spring garden. One of the more interesting plants to grow is the ornamental gourd. Because they come in all shapes and sizes, the gourds can be put to good use once they mature. Some can be made into birdhouses or tools. Others are valuable for scrubbing dishes or decorating homes. All of them present an intriguing opportunity to learn new skills and to spice up a garden with luxurious vines and eye-catching fruit.

According to the National Gardening Association, ornamental gourds come in two types. The first group has brightly colored fruit with twisty, curvy shapes. Their names often describe how they look: apples, bells, pears, turbans or eggs. These gourds make great table decorations, floral displays and harvest baskets.

The second group, known as bottle or dipper gourds have a more functional use. They can be used for decorations, but they can also be used as ladles, jugs, planters and birdhouses. As we saw at the festival last weekend, the creation of gourd art can make for great family activities or provide opportunity for a satisfying personal hobby. Another related group, normally not used for decoration, is the luffa or vegetable sponge.

Luffa sponge gourds have yellow flowers and bear one to two foot long fruits that, once dried and peeled, provide a fiber shell that is excellent for scrubbing and cleaning. Many people like to use luffa instead of manufactured sponges because they are organic and will decompose over time. When we are finished with them, we can just toss them into the compost pile or dig them into our gardens for a source of organic matter. By recycling luffa sponges, we save space in the landfill for items that really need to be there. Luffa sponges require the longest growing season.

Other yellow-flowered gourds include the colorful ornamental gourds, large and small, that are often sold at stores for decorations. They can be single or multi-colored.

Gourds with white flowers, the lagenaria, flower at night. The gourds are green on the vine but turn brown or tan when they dry. They have thick, hard shells that make them excellent for building birdhouses and making bottles or ladles. Interestingly enough, their names describe their uses: the birdhouse gourd and the dipper or bottle gourd.

All gourd vines grow fast and can reach ten to fifteen feet in length. They should be planted into the ground once it starts to warm up in the spring. Offsetting the need to give them a quick start in warm soil is the looming threat of the whitefly which really kicks into high gear as the daytime temperatures consistently reach over 100° F. Gourds, like melons, cantaloupes and squashes, are quite susceptible to whitefly feeding. For that reason alone, it is important to sew seeds or set transplants into the soil early in the spring and give them some early season frost protection. Without an early planting, it usually is difficult, especially for the slow-growing luffas, to finish out before the whiteflies set in. Early to mid-February is a good time to plant gourds, but make sue that you protect them from any late season frosts.

The vines should be planted about two feet apart. This will give them plenty of room to grow without creating a condition where they are competing with each other for food, light and air. They are heavy nitrogen feeders, so it is important that they be fertilized with a nitrogen fertilizer every month or so. If the vines are planted in our nutrient-rich, native desert soil, only nitrogen will need to be added. If planted in containers or raised beds with a potting soil mix, it will be necessary to use a complete fertilizer, one with all three of the numbers on the bag. A fertilizer, such as 10-10-10 or, better yet, 15, 15, 15, would be a good choice.

The soil must be well tilled. Gourds need plenty of room for their roots, and hard, compacted soils will limit root growth. Before planting it is important to spade or rototill the soil deeply to ensure that the roots can grow into the ground.

GROWING ORNAMENTAL GOURDS . . . CONTINUED FROM PAGE 7

If you want your ornamental gourds to look their best, the vines must be grown on a trellis. Fruit that lays on the ground will become discolored at the point of contact and can be scratched and scarred from rubbing on the soil.

Because of the wide variety of vine and gourd sizes, there is also a wide variety of trellising needs. The small ornamental gourds, such as bicolor pear can be grown on a six to eight foot trellis. Larger types, such as dipper and water bottle, require a more substantial trellis to hold the weight of the fruit. If you have only a little space, an ideal trellis setup would be a sturdy arbor consisting of posts and several overhead crosspieces. This type of trellis is not only attractive, but can withstand the rigors of even the heaviest fruit load.

Gourds should be harvested when they are fully mature. The shells will be brightly colored, the skins hard and the stems brown and dried. Don't go poking at the fruit with your thumbnail or some other kind of instrument. If you dent or break the skin, you will ruin the gourd for later use.

Gourds do not like frost. Our long growing seasons make frost damage to gourds unlikely, but if you have a late crop or if, by any lucky chance cold weather comes early to the desert, make sure that you cover the vines with a cloth covering. Often times the first frost or freeze may be the last in our area. If we do have multiple frosts, they are often spaced out sufficiently that we can finish out a crop that is in the final stages of finishing.

Gourds should be removed from the vine when they are ripe, leaving a few inches of stem. For best curing, gourds should be hung so that they do not touch a wall or another gourd. The stem provides a useful point of attachment for string or wire. Be sure to wash or wipe off any surface soil or grime before hanging the gourds to cure.

Once the gourds are cured, wash them with a bleach solution to disinfect them of any fungi or bacteria that would cause them to rot or disintegrate. After they have been well dried, they can be waxed, varnished or painted as desired.

Ornamental gourds can be used in a multitude of ways. Some are perfect to turn into table decorations, wall hangings, or other eye-catching and attractive art forms. Others, because of their size and shape can be used for bird houses, storage bins, grain scoops, and other functional items. The imagination is the only limit in how ornamental gourds can be transformed from a garden interest to a function purpose. Do a web search for "what to do with ornamental gourds" for a wealth of ideas.

Cultivated for thousands of years by many cultures worldwide, gourds have been, and continue to be, a great way to not only create useful tools and decorations, but also to bring great personal and family satisfaction.

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 or (520) 374-6263 and leave a message. 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 <u>macmastergardener@gmail.com</u> and a Master Gardener will contact you.

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

Richard Subson

Richard D. Gibson Extension Agent, Agriculture

RDG/te/sh/aw

59 mailed copies 262 emailed Have a sick plant or just questions about caring for your plants?

Visit our Plant Diagnosis Clinic held every third Thursday of month from 9:00 to noon at the U of A Cooperative Extension 820 E. Cottonwood Lane, Bldg. C Casa Grande, AZ 85122



Or you may call the Maricopa Agricultural Center at (520) 374-6263 to speak to a Master Gardener.

If you are able to email a picture, please send it with any information you can provide about the plant, and your contact information to the diagnostic team at <u>macmastergardener@gmail.com</u> and a Master Gardener will contact you.

