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Texas Agricultural Extension Service
The Texas A&M University System

Horticultural Update



Plant of the Month - February

Government Publications
Texas State Documents

Viola odorata

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By William C. Welch
Landscape Horticulturist

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Violets were once considered indispensable perennials for the well-designed garden. Although numerous native violet species occur in Texas, the violet of choice for most southern gardens was *V. odorata*, which is of European, Asian and African origin. Dark blue or purple is the predominant color. Well into the early 20th century, violets were among the most popular florist cut flowers. Their fragrance, rich colors, and relatively easy culture contributed to nationwide popularity.

Violets prefer a rich, moist but well-drained soil high in organic content. Partially shaded locations are preferred. Their natural bloom period is late winter and early spring. Although evergreen, garden violets become semi-dormant during our long, hot summers. They can, however, endure considerable drought and heat stress and usually become lush and healthy with onset of cooler and more moist fall and winter conditions.

Landscape uses included borders and groundcovers. Large container shrubs can often be enhanced by a mass of violets at their base, providing attractive foliage, fragrance and color at a season when few other plants are at their peak. Mature height is usually 8" to 10". The rounded foliage is quite attractive even when the plants are not in bloom.

Propagation is usually by division of mature clumps during early-to-mid fall. Seeds can also be used to produce new plants but require considerable attention during the early stages.

Borders of garden violets may still be found in some of the old gardens of East and Central Texas. They can be long-lived and relatively low maintenance perennials. Few plants perform as well in shady areas and offer color and fragrance during January, February and March. Availability in nurseries is inconsistent at present, but garden centers specializing in perennials or native Texas plants usually offer violets.

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Roses for Texas Landscapes

By William C. Welch
Extension Horticulturist

The rose is not only America's favorite flower, it is recognized as our official national flower. The genus *Rosa* covers numerous species, including some natives. The major appeal of roses is in the color and beauty of the blossoms. Some bloom almost year round, while others provide massive displays for several weeks.

There has been considerable controversy over the landscape value of roses. Actually, there are some roses that lend themselves very well to use as vines, masses, hedges or even as specimens. Hybrid Tea roses, which are the most common class of roses currently available, are best grown in well-prepared, sunny beds where they receive at least half a day of sun and good air circulation. Hybrid Tea roses require a regular spray program for prevention and control of black spot and mildew diseases.

Garden roses require very little cold weather to satisfy their dormancy requirements; therefore, it is possible to successfully grow roses in all parts of Texas. They are best transplanted during winter from late December through February. Many garden centers order bare-root plants for delivery in December and January. Immediately upon arrival, these plants are potted in containers. This method allows the planting season to be extended later into spring. Most rosarians like to set out new plants during January and February so that the root systems can be well-established before hot weather arrives.

Roses are classified according to growth and flowering characteristics. A brief description of the most common classifications should be helpful in planning their use in the landscape.

Hybrid Teas - Because of their almost continuous flowering habit, Hybrid Teas are often called monthly or everblooming roses. They are the result of crossing two old-fashioned rose classes, the

Hybrid Perpetual and the Tea rose from China, which supplied the repeat-blooming trait. In general, the buds are pointed and long and occur one per stem. Hybrid Teas are the most common class sold today, but are generally grown for cut flowers rather than as landscape plants.

Floribundas - Floribundas originated from crossing Hybrid Tea with Polyantha roses. The plants are vigorous with large masses of well-shaped flowers that resemble miniature Hybrid Teas. With proper care, Floribundas can provide an almost continuous source of landscape color. They are most effective in mass displays of the same variety. Floribunda roses are usually more compact in growth from than Hybrid Teas.

Polyanthas - Polyanthas produce small flowers in large clusters and are primarily used for mass plantings or borders. Probably the most popular variety in this class is 'Cecile Brunner', often called the 'Sweetheart Rose', which is available in both climbing and bush forms. There are very few Polyanthas on the market today because Floribundas seem to have more appeal and are more widely available.

Grandifloras - This is a relatively new classification which resulted from crosses between Hybrid Tea and Floribunda varieties. Grandifloras are usually very vigorous plants. 'Queen Elizabeth' is probably the most popular rose in this class.

Climbing and Pillar roses - Many of the popular varieties of the above-described classes have climbing forms. They usually result from mutations of bush forms. There are, however, some varieties that are considered natural climbers, including such popular choices as 'Blaze', 'New Dawn' and 'Lady Banks'. Climbers are usually very vigorous and require different pruning practices from bush types. Most climbers should be pruned after they bloom

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in spring, since many of them flower primarily on last year's wood. Some climbers, such as "Lady Banks," tend to be highly disease-resistant and are very useful as landscape plants.

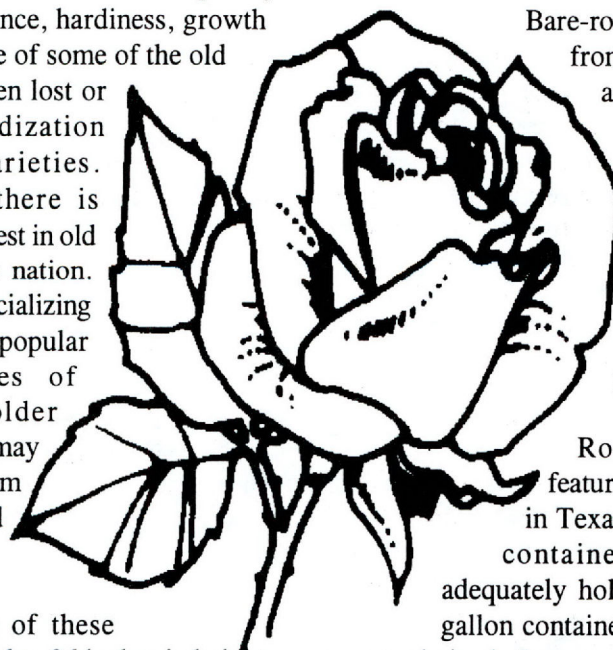
Old garden roses - This is really more of a generalized grouping than a class of roses. Among the old roses adapted to Texas are many of the Species Roses, Hybrid Perpetuals, Tea, China, Damask, Bourbon, Noisette and Hybrid Musk selections. Recent years have seen considerable interest in many of these plants. Part of the popularity is due to nostalgia and an interest in historical plantings. Old-rose enthusiasts quickly point to the superior fragrance, hardiness, growth habit and disease resistance of some of the old varieties that may have been lost or weakened in the hybridization process of newer varieties. Whatever the reason, there is definitely an emerging interest in old roses in Texas and in the nation. Catalogs from nurseries specializing in old roses have become popular references and sources of information for the older varieties. Most old roses may be successfully grown from cuttings taken during cold months of the year.

Miniature roses - Most of these plants grow no more than 16 to 36 inches in height. They are natural (genetic) dwarfs and have become extremely popular in recent years. Unlike most other rose classes, miniatures are usually grown as, and are valuable for, mass landscape plantings or container culture. Their growth requirements are similar to those of other roses, and most varieties need to be sprayed regularly to control black spot and spider mites.

There are hundreds of miniature rose varieties available with new ones appearing on a regular basis. A major reason for their popularity is ease of propagation. Cuttings can be rooted during the

cooler months and older plants can usually be divided. Most miniatures bloom profusely and regularly.

Purchasing roses - Roses are readily available during late winter and spring. Packaged roses are often featured in discount and grocery stores as well as some garden centers. There is nothing really wrong with this method of handling roses, but if they are stored or displayed in warm temperatures, sprouting occurs almost immediately. Sprouting severely weakens the plant and may result in poor performance or even death.



Bare-root roses are often available from mail order nurseries and are usually packed in plastic to prevent drying. It is important to plant these roses as soon as possible upon arrival. If planting is delayed, heel in the roses in good garden soil and keep them moist until planting.

Roses in containers are featured by many garden centers in Texas. It is important that the container be large enough to adequately hold the root system. A 1-gallon container is usually too small for a normal-sized, 2-year-old rose bush. Containers that are 2 or 3 gallons in size are much better. Some nurseries use containers that will decompose soon after planting and recommend that the entire container be set into the rose bed. Seasoned rose growers usually prefer to remove the plant from the container so that the root system can more quickly become established in the surrounding soil.

Roses are usually graded to standardized criteria. These include #1, #1 1/2, and #2 grades. Homeowners are probably wise to choose #1 or #1 1/2 grades since the vigor and size of these plants are usually superior.

Pecans Need Proper Planting for a Fast Start

By George Ray McEachern
Extension Horticulturist

Commercial pecan orchards are frequently planted with over 95 percent of the trees living and making good growth the first year. However, all too frequently negative results occur. Many times the trees look good, but make only a small amount of growth the first year and die the second year. To insure a good survival percentage, growers should follow a few basic horticultural principles.

Order Trees Early from a Reliable Pecan Tree Nursery

Pecan nurseries frequently run out of the most popular varieties before all orders are filled. As soon as the orchard plan is completed, the order should be placed with a nursery which has a history of producing top quality trees. Six months to one year is not too early for ordering pecan trees. Have the trees shipped or better yet, pick up the trees directly from the nursery as soon as they are dug. The trees are better stored at the orchard site in a heel bed, than at the nursery. Most nurseries begin digging trees in December.

Tree Size Is Important

Purchase trees which are 6 to 10 feet tall or 1/2 to 1 1/2 inches in diameter just above the graft union. Trees which are 4 feet tall or smaller could be self pollinated seedlings which will always be slow growers. Never purchase trees which are less than 2 feet tall. Larger trees over 10 feet tall can have difficulty in transplanting and do not grow faster than trees slightly smaller. Occasionally, new growers think that buying trees larger than 10 feet tall will be better; however, the opposite is the case. Trees 6 to 8 feet tall are ideal.

Heel Nursery Trees in the Soil Immediately Upon Arrival

One of the main problems with pecan transplanting is root death from drying out or freeze. To prevent this, the roots should be covered with soil in a heel bed immediately upon arrival at the orchard. The trees can be stored in a heel bed for up to six months without loss. Do not cover the roots with hay or sawdust because they will dry out. This covering can also give off excessive heat as it decays which can kill roots. Refrigerated

storage can dry out root systems. Heel beds are difficult to build, but they are worth every bit of the effort because they ensure a healthy root system at planting.

Prepare the Planting Row in Advance

The planting row should be treated with Roundup herbicide in September or October before planting to kill perennial weeds such as johnsongrass, bermudagrass or nutgrass. If the orchard is being planted on soil which has been farmed, the tree row needs to be chiseled as deep as possible down the row to break up hard pans which might exist. The tree row should be flat disked several times before planting. The irrigation system should be installed before planting and be ready as soon as the trees.

Plant in the Winter Time

Pecan trees can be successfully planted from December to March. The earlier the trees are in the ground, the fewer problems will occur from drying out or freezing. Container trees are gaining in popularity, especially with home owners planting landscape trees. Container trees can be planted as late as June; however, they are best planted in the winter. There is no advantage to planting pecan trees in the fall, and they should never be planted in the summer. The main objective is to have new roots in the soil in the spring as the first buds begin to grow.

Transport the Trees in Water

Throughout the transplanting process, close attention must be given to root desiccation. It is very easy for pecan roots to dry out. Once the trees are removed from the heel bed, they should be placed in a 55-gallon barrel filled with water. The trees should remain in the water except for trimming. As they go to the field, they should be transported in water and come out of the water only as the tree goes into the ground. One of the most common problems with tree death or no growth is root damage from drying out. Young trees with damaged roots fail to grow. They do not grow and they do not die; they simply make 1 inch of growth in the spring and that is it for the year.

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Dig a Small Planting Hole

Until 25 years ago, pecans were planted in very large holes. The old saying was, "plant a \$1.00 tree in a \$10.00 hole." Today we want to do the opposite so that the new roots can develop in the permanent soil as soon as possible. Eight, 10 and 12 inch holes dug with a tractor posthole digger are excellent. Large holes frequently become a sink which traps rain and irrigation water. This is bad because new roots will die as soon as they develop in water saturated soil.

Set the Taproot on the Bottom of the Hole

The taproot needs to be firmly set on the bottom of the hole to prevent the tree from settling. Many young trees have died because the holes were dug too deep. Do not dig a deep hole because the tractor can dig it. If the taproot is 24 inches long, dig the hole only 24 inches deep. If the taproot is longer than the hole, cut off the end of the taproot with an ax and a chopping block. Dig the hole so that the planted tree is at the same depth it grew in the nursery. This is easy to determine because the stem bark is gray and the root is dark brown. Never plant the tree with the bud union at the soil line. The objective is to have the new roots develop as close to the surface as possible. The deeper the first roots are in the planting hole, the more difficult it will be for them to form.

Pack the Soil in the Hole

A small 2 inch wood fence post should be used to pack the soil in the hole to remove all air spaces. The harder the soil is packed, the better. Loosely filling the hole and pressing the soil two or three times with a boot heel is not enough. As the soil goes into the hole, pack it from the bottom all the way to the top. Place the soil that came out of the hole back into the hole. Do not fill the hole with potting soil, top soil or organic matter. Do not put fertilizer in the hole. Do not put starter tablets in the hole. There are old timers who like to mud trees in. They fill the hole half way with soil and then fill the hole with water. Then the hole is filled with soil and more water applied. This system is fine if top quality sandy loam soil is used: however, tight packing is best for all soil types.

Irrigate Immediately After Planting

The second the soil is packed in the hole, give each tree five gallons of water. This will be needed every week for the first year from planting to October. The water is needed to prevent drying out of the roots, allow new

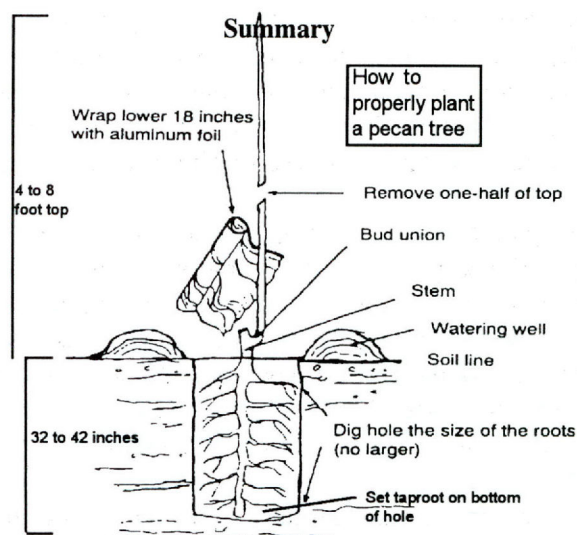
roots to develop and provide water for new growth. Drip irrigation is excellent for one or two years; however, microsprinklers or standard sprinklers are needed beginning the third year.

Cut Off One Half of the Tree at Planting

Removing one half of the tree at planting is one of the most difficult practices a grower will have to make. It is exceeded only by having to remove total trees to prevent tree crowding at year 10 to 15. If a six-foot tree is planted, cut off 3 feet immediately after planting. This is to break apical dominance and stimulate lateral shoot development. It reduces the amount of top growth which keeps the top in balance with the root system. If the young tree is not pruned severely at planting, there will be more shoots and leaves than roots which results in severe drought stress. In pecans, it is always better to have more roots than shoots and leaves.

Wrap the Lower Trunk with Aluminum Foil

The lower 18 inches of the tree trunk should be wrapped with heavy duty aluminum foil to prevent damage from Roundup herbicide, rabbits, sunburn and freeze. Some use white interior latex paint mixed with two or three parts water rather than aluminum foil. Make sure at least three buds extend above the aluminum foil.



With good soil, good trees and proper planting young pecan trees can make 12 inches of growth the first year. In exceptional cases, 36 inches of growth can be obtained the first year. However, if the roots are damaged before planting, it is very possible that no growth will occur the first year and the trees will die during the second year.

Fruit Notes - Nitrogen Nutrition

By Calvin Lyons
Extension Horticulturist

Fruit trees respond more to applications of nitrogen (N) than other plant nutrients. The following discussion is a brief review on N uptake and utilization in fruit trees and provides background information for fertilizer recommendations.

N Uptake and Storage - N is taken up by trees as nitrate (NO₃) or ammonium (NH₄). N uptake depends on carbohydrates translocated from the leaves downward. Therefore, trees do not take up N when they are leafless. N uptake begins after bloom and ceases at leaf fall (Weinbaum et al., 1978). This means that N in the root zone before bloom will not be used by the tree. Split N applications with half applied 2 to 3 weeks before bloom and half 4 to 6 weeks after bloom may be better than one large dose of N for several reasons: (1) one large dose results in a certain amount of N leaching which is wasted and pollutes ground water, (2) a full application in early spring encourages vegetative growth more than split applications, and (3) if the crop is reduced by frost, the second application can be reduced or eliminated.

N Recycling - N taken up by roots in the sprig is partitioned preferentially to the newly expanding leaves during the year of fertilizer application (Weinbaum et al., 1984). Leaves in nonshaded regions of the canopy have more N per unit leaf area than shaded leaves (Sanchez and Righetti, 1990). During late summer, N is mobilized from the leaves to the roots and bark tissues and is stored as proteins during dormancy. In the spring, the proteins are broken down (hydrolyzed) and N is transported to the ground shoots, leaves, flowers and developing fruit (Titus and Kang, 1982). The take home message from this is that early-season shoot growth depends on N that was applied last year and was stored in the tree during winter; N applied this spring will be used next spring.

Since N reserves in the tree are critical for early-season growth, Faust (1989) recommended late-season fertilization. If N is applied after shoot growth has ceased, possibly as a urea foliar spray immediately after harvest, the N reserves of the tree could be improved without reducing fruit color or cold hardiness.

Choosing Fertilizer - Many researchers have compared various nitrogen fertilizers, and among orchardists there is continued controversy regarding nitrate and ammonium forms. All research papers I am aware of, where the trees were grown in soil rather than sand culture, indicate that source of N does not affect soil pH, tree growth, yield or fruit quality. Nitrogen fertilizer should be purchased on the basis of price per unit of actual N. Price per unit of N is least for urea, intermediate for ammonium nitrate and greatest for calcium nitrate and sodium nitrate.

Rates of N - Young trees need N for maximum growth; however, many Virginia fruit producers are applying more N than is needed to promote optimal growth. Autio and Greene (1988) recently reported on an experiment in Massachusetts where apple trees were fertilized the first two years with ammonium nitrate at rates of 0.16, 0.33 0.5 or 0.67 pounds of actual N per tree per year of tree age. Three types of soil management (herbicides, cultivation or sod) were also superimposed on the N treatments. After 4 years, trunk circumference decreased as N rate increased in herbicide-treated plots. Yield was greatest for herbicide strips, but

Garden Checklist for February

By William C. Welch
Landscape Horticulturist

- 1.** Do not fertilize newly set out trees or shrubs until after they have started to grow, and then only very lightly the first year.
- 2.** When buying plants, the biggest is not always the best, especially with bare-rooted plants. The medium to small sizes (4-6 foot) usually become established faster and will become effective in the landscape much quicker than the larger sizes.
- 3.** Complete the bare-root planting of woody landscape plants this month. Container and ball and burlapped plants are in good supply and can be set out most any time. Winter and early spring planting provides an opportunity for good establishment before hot weather comes.
- 4.** Prune roses during February for Central Texas, March for North Texas. Use good shears that will make clean cuts. Remove dead, dying and weak canes. Leave four to eight healthy canes and remove approximately 1/2 of the top growth at the height of the plant.
- 5.** Now is an excellent time to select and plant container-grown roses to fill in those bare spots in your rose garden.
- 6.** Wait until after flowering before pruning spring-flowering shrubs such as quince, azalea and forsythia.
- 7.** When pruning shrubs, follow these steps:
 - a. Prune out any dead or damaged branches first.
 - b. Thin out by removing about 1/3 of the canes or stems at ground level, removing the oldest canes only.
 - c. Shape the rest of the plant but do not cut everything back to the same height.
- 8.** Plant dahlia tubers in late February and early March.
- 9.** Plant gladiolus corms; space planting dates at two-week intervals to extend flowering season.
- 10.** Fertilize pansies once again for continued flowering. Do not forget to water when needed.



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ANNOUNCEMENTS

LANDSCAPE DESIGN STUDY COURSE I

Landscape Design Study Course I will be offered February 14-16, 1995 at the College Station Utilities Service Center. This course is jointly sponsored by TAEX and Texas Garden Clubs, Inc. and has been a popular choice for Master Gardeners and others interested in furthering their knowledge of landscape design. It is part of a nation wide program offered by the National Council of State Garden Clubs.

Course I is the first of a four part series. Courses II-IV will be offered approximately every six months over the next two years. We will appreciate your help in getting information about the program to Master Gardeners and others you feel may be interested. Contact Shela in Dr. Welch's office at **(409) 845-7341**, to request a copy of the program and registration information.

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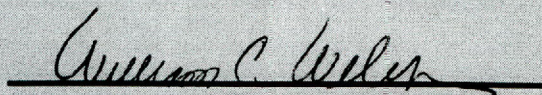
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