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Horticultural Update



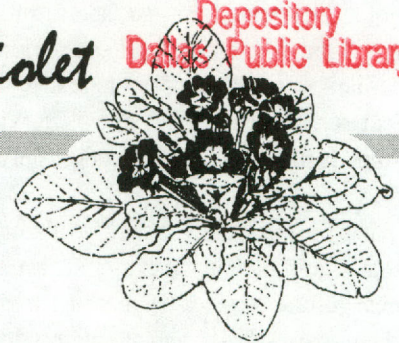
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Plant of the Month . . . Violet

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Dr. William C. Welch, Landscape Horticulturist
Texas A&M University, College Station, Texas



Violet (*Viola odorata*)

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 the onset of cooler and more moist fall and winter conditions.

Landscape uses include borders and ground covers. 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 inches. The rounded foliage is attractive even when the plants are not in bloom.

Usual propagation is 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.

JANUARY/FEBRUARY 1997

In this issue . . .

Plant of the Month: Violet.....	Page 1
Why Do Leaves Change Color in the Fall?	Page 2
For A Red Rerun.....	Page 3
Parasite Puts Sting on Fire Ant Population.....	Page 3
Rose Culture	Page 4
Vegetable Gardens.....	Page 5
Plan for Disease Prevention	Page 5
Transplanting Native Plants	Page 6
Garden Checklist for January & February	Page 7

Why Do Leaves Change Color in the Fall?



*Dr. Douglas F. Welsh, Landscape Horticulturist
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Trees change colors according to complex chemical formulas, depending on how much iron, magnesium, phosphorus, or sodium are in the tree, and the acidity of the chemicals in the leaves. Trees might turn amber, gold, red, orange, or just fade from green to brown. Scarlet oaks, red maples, and sumacs, for instance, have a slightly acidic sap which causes the leaves to turn bright red. The leaves of some varieties of ash growing in areas where limestone is present will turn a regal purplish blue.

What prompts the change? Although many people believe that a mischievous Jack Frost is responsible for the color change, the weather has nothing to do with it at all. As the days grow shorter and the nights longer, a chemical clock inside the trees starts up, releasing a hormone which restricts the flow of sap to each leaf. As autumn progresses, the sap flow slows, and chlorophyll, the chemical that gives the leaves

their green color in the spring and summer, disappears. The residual sap becomes more concentrated as it dries, creating the colors of fall.

In the summer, hardwood leaves contain green, yellow and orange pigments. Chlorophyll gives the leaves their green color and masks the yellow and orange pigments. As the amount of chlorophyll declines in autumn, the yellow and orange pigments begin to show. Purple and red shades result from the autumn production of another group of pigments. The brighter the light during this period, the greater the production of these pigments. When the days of autumn are sunny and cool, the nights chilly but not freezing, the brightest colorations usually develop.

Fall's colorful palette, which contains numerous variations, includes leaf colors that are grouped broadly as follows:

YELLOW

Green and black ash
basswood
beech
birch
butternut
elm
maples (boxelder, mountain, silver, striped, and sugar)
mountain ash
poplar
serviceberry
willow
witchhazel

RED AND SCARLETS

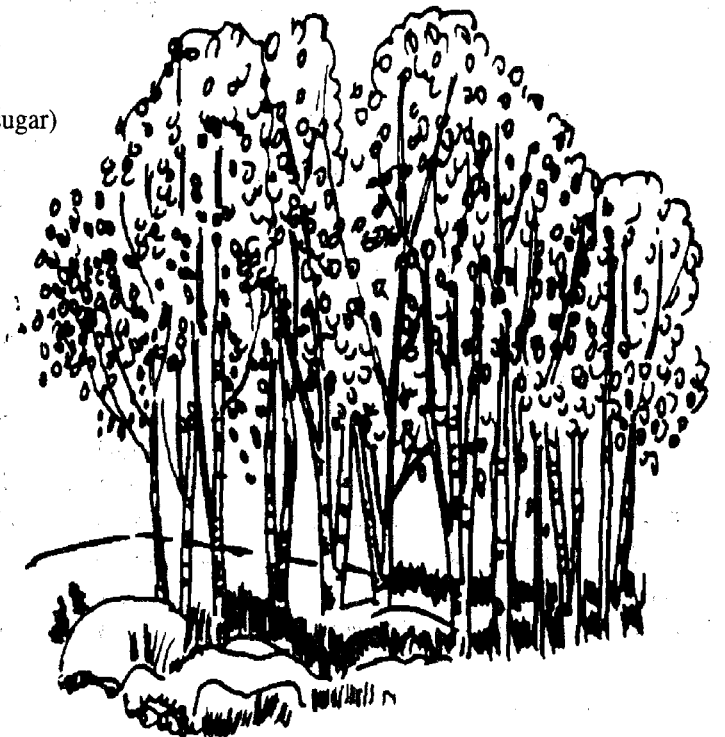
hornbeam
red, mountain, and sugar maple
black, red, scarlet, and white oak
sumac
tupelo

BROWNS

black and white oak

PURPLES

white ash
witchhazel



FOR A RED RERUN...

Excerpt from an article about the Ellison Tourism and Gift Center which appeared in *Weekend Gardener*, November/December 1996

With patience, you can coax your poinsettia to bloom again for another year, according to Ellen Ellison of the Ellison greenhouses in Brenham, Texas. Here's how:

Christmas. Pick a colorful plant with tightly clustered yellow buds. Protect from hot or cold drafts, water when dry, and place in a room with enough natural light for reading.

New Year's. Apply all-purpose house plant fertilizer. Continue light, water, and fertilizer. Plant should remain colorful for many weeks.

Valentine's day. Do nothing unless your plant has become long and leggy. If it has, prune to 5 inches from the soil.

St. Patrick's Day. Remove faded and dried parts of the plant. Add more soil, preferably a commercially-available sterile mix.

Memorial Day. Poinsettia should be around 3 feet high. Trim off 2 or 3 inches from ends of branches, to promote side branching. Re-pot to larger container. Move plant outside . . . first to indirect, then direct light.

Fourth of July. Trim plant again. Make sure it has full sunlight. Slightly increase the amount of fertilizer. If you would like root cuttings, they will root easily if kept warm.

Labor Day. Poinsettia may have grown to 5 feet or more. Move indoors, but make sure it has 6 hours of direct light from an uncurtained window. Reduce fertilizer.

First Day of Autumn. Starting on or near September 21, give plant 13 hours of uninterrupted darkness and 11 hours of bright light per day. Keep night temperatures in the lower 60s. Continue to water and fertilize. Rotate plant each day to give all sides even light.

Thanksgiving. Discontinue day/night treatment. Put plant in a sunny area. Reduce water and fertilizer.

Christmas. Enjoy your now-new poinsettia !

Ellison Tourism and Gift Center is located at 808 S. Horton Street, Brenham, TX 77833. Telephone number is (409) 836-0084.

PARASITE PUTS STING ON FIRE ANT POPULATIONS

This article appeared in *Texas Aggie*, October 1996

Scientists at Texas A&M University are looking to a tiny parasite to help take the 'sting' out of the red imported fire ant problem in the United States.



The microscopic insect called *Caenocholax fenyesei* is closely related to beetles but looks more like a fly, said Jerry Cook, a graduate assistant with the Texas Agricultural Experiment Station at Texas A&M. It's extraordinary in that the females give birth to live larvae. The male larvae find a fire ant while the females find a bush cricket in which to develop, he said. The association between the parasite and the fire ant was found by Dr. Spencer Johnston, Associate Professor of Entomology at Texas A&M. He was dissecting fire ants for genetic material when he found the parasite.

The male larva attaches itself to a foraging ant to be carried back to the nest. It then infects an immature ant so that it can mature as the ant does. It bores into the abdomen, feeding on the ant. When it exits, it leaves a gaping hole, and the ant basically bleeds to death, Cook said. While infected, the ant does not carry on its normal activities. It doesn't sting or forage, making it even more of a detriment to the colony.

Cook estimates that only 1 to 3 percent of fire ants have these parasites, since the bush crickets are so rare in the wild that populations are kept low. The bottleneck is the female, he said. The female will lay 50,000 to 100,000 eggs during her lifetime, but will basically sterilize her host and ultimately kill it.

To open that bottleneck, Texas A&M is investigating three options: (1) collect bush crickets from the field, raise even higher numbers in the lab, and release them back into the field; (2) experiment with the parasite to see if it would switch to another host, such as the common cricket; or (3) raise the parasites on artificial media, and release massive numbers of them. The parasite already occurs naturally in Texas, unlike other biological control agents that are being studied at other universities and agencies.

Rose Culture

*Dr. William C. Welch, Landscape Horticulturist
Texas A&M University, College Station, Texas*

PLANTING

If planting only a few roses, dig individual holes for them. Holes should be at least 12 inches deep and 18 inches wide.

Mix about one-third organic material (peat, pine bark, or compost) with some of the soil from the hole, along with a gallon or two of well-rotted cow manure, if available. A half-cup of bone meal or superphosphate, thoroughly mixed with the soil, is a good addition. A similar amount of agricultural gypsum is beneficial for heavy clay soils.

Soil preparation can be done just prior to planting, but is more effective if completed several weeks or months before planting.

Spacing of the plants will vary with varieties. Most Polyanthas can be planted as close as 18 to 24 inches, while Chinas, Bourbons, Teas, Hybrid Perpetuals, Hybrid Teas, and Hybrid Musks are best at a 3- to 5-foot spacing, depending on the variety. Climbers and ramblers need more space to develop their potential. Eight to 10 feet is appropriate for most, but under good growing conditions, Banksias, Cherokee, and certain others could be spaced at 15-foot intervals.

Bare-root plants should be set out as soon after receiving them as weather and time allow. If a delay of more than a few days is necessary, remove the plants from the shipping bag and 'heel them in' by covering the roots and part of the tops with loose soil.

Container-grown plants may be set out at any time, but most rose growers avoid the hot summer months, when extra irrigation and care may be necessary to insure success.

Prune tops back an inch or two to just above a live and healthy bud on each cane. Cut back canes or roots damaged in shipping or handling to healthy tissue.

Dig the hole large enough to accommodate the natural spread of the roots, and fill with the soil mixture described earlier. Firm the soil well around the roots, and water thoroughly to remove air pockets and settle the soil firmly around the root system. Set plants at approximately the same level at which they had been growing, or slightly deeper.

FERTILITY

Roses are heavy users of nutrients and require frequent application of fertilizers. To determine fertility of existing soil, contact your county Extension agent for instructions on submitting a soil sample.

Do not apply fertilizers until the first set of flowers begins to fade for everblooming types, or in the case of once-blooming roses, 8 to 10 weeks after planting. A heaping tablespoon per plant of a complete fertilizer, such as 6-10-4 or 8-8-8, may be applied every 4 to 6 weeks until about September 1. Application after that time can promote soft fall growth that may result in freeze damage.

The time-honored fertilizer for roses is well-rotted cow manure. Since manure may not be available, commercial fertilizers have become popular. Phosphorus is the material that helps plants develop strong, healthy roots and prolific flowering. Superphosphate is usually available, and can be applied at the rate of 3 to 4 pounds per 100 square feet. Since phosphorus is not very mobile in the soil, it should be well mixed during preparation.

Nitrogen is easily and quickly depleted from the soil, and needs to be applied periodically during the growing season. It is necessary for more and bigger canes, stems, and leaves. Slow-release commercial fertilizer or natural materials, such as cottonseed meal, last longer and require fewer applications through the growing season.

Potassium is needed for promotion of new growth, disease resistance, and cold tolerance. All 3 nutrients (nitrogen, phosphorus, and potassium) are included in balanced fertilizers. Many rose growers apply a balanced fertilizer every 4 to 6 weeks during the growing season.



Vegetable Gardens

*Dr. Sam Cotner, Head
Horticulture Department, Texas A&M University*

If "green-thumb" vegetable gardeners have a secret to their success, it is proper soil preparation and fertilization. Experienced gardeners know the potential for producing good yields of high-quality, homegrown vegetables is greatly enhanced by a well prepared soil containing liberal amounts of organic matter and adequate available nutrients.

Cottonseed meal is an excellent means of providing both the organic matter and the nutrients vegetables need. It is an organic, slow-release, premium fertilizer containing nitrogen, phosphorus, and potassium, as well as numerous minor elements. When incorporated into the garden soil, cottonseed meal decomposes over a period of time, slowly releasing its nutrients and forming soil-improving humus.

When starting a new vegetable garden, apply 4 to 6 pounds of cottonseed meal and 1 to 1½ pounds of recommended garden fertilizer per 100 square feet of gardening area. For soil improvement, spread 1 to 2 inches of cottonseed hulls, decomposed leaves or grass clippings, well rotted hay, or other form of organic matter over the surface of the garden. Till or spade the soil to a depth of 8 to 10 inches, thoroughly mixing in the meal, recommended fertilizer, and organic material. When soil is prepared for planting in established, productive vegetable gardens, apply the same amount of meal; reduce the amount of garden fertilizer by about one-half, and continue to work in liberal amounts of organic matter.

When the garden is established and the soil warms, mulch around the plants with a 1- to 2-inch layer of cottonseed hulls or other suitable organic material. About 2 to 3 weeks later, apply a topdressing of cottonseed meal at the rate of 1½ to 2 pounds per 100 square feet, or per 35 feet of row. Lightly work the meal into the mulch, and water thoroughly. Depending upon the crop and the weather, additional applications of meal at the same rate may be needed periodically during the growing season.

PLAN FOR DISEASE PREVENTION

*From Texas Earth-Kind Landscape and Gardening
Guidelines, published by TAEX*

Home gardeners are constantly pestered with diseases that rob them of their harvest. Many gardeners have found that planning properly and following recommended control practices keep vegetable losses to a minimum.

It is also important to select a well drained garden site to prevent damping-off and other problems associated with wet soils.

Organic matter (straw, leaves, crop residue) is essential to a productive soil, but it can also increase the occurrence of southern blight. To avoid a buildup of southern blight, bury organic matter below the expected root zone of next year's crop. This should be done in the fall if possible.

Watering plants in the evening causes leaves to remain wet for an extended period, and increases the chance of leaf diseases. Plants watered in the morning dry quickly, resulting in fewer leaf disease problems. Drip irrigation also reduces foliage diseases.

Grow vegetables in the same location only once every 3 to 5 years. If this cannot be done, plan your garden to avoid growing vegetables of the same family group in the same area season after season. Family groups are:

- (1) watermelon, cucumber, squash, cantaloupe, honeydew melon, pumpkin;
- (2) cabbage, cauliflower, Brussels sprouts, rutabagas, kale, turnips, mustard, radishes, collards;
- (3) Swiss chard, beets, spinach;
- (4) pepper, tomato, potato, eggplant;
- (5) carrots, parsley, parsnips;
- (6) onions, garlic, leek, shallots;
- (7) sweet corn;
- (8) beans, peas, and southern peas.

Certain vegetable diseases are seed transmitted. To avoid multiplying disease problems, don't save seed from the garden for planting the following year.

A number of diseases attack the foliage and fruit of vegetables. Diseases caused by fungi cannot be cured, so they must be prevented. When you see a fungus problem, irreversible damage already has been done. Cloudy, damp mornings encourage the growth of fungus spores. So when such conditions exist, you may want to follow a preventive spray schedule or remove contaminated plants.

Transplanting Native Plants

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Overton, Texas



Many desirable native or wild Texas plants are adaptable for the home landscape. The natives are hardy to local weather conditions, local soils, and perhaps more tolerant of local garden insects and diseases. Most natives are easy to grow, yet the task of successfully transplanting the desired native from the wild is often difficult, and must be done with care.

The wet, cold days of winter are ideal times for transplanting plants, both native or cultivated species. Due to cold, the plants are dormant or in a state of rest, and will not suffer the shock of moving and the interruption of growth.

Special precautions must be taken when selecting native plants for transplanting. Even though these plants are hardy, it is often difficult for the home owner to substitute the natural or native woodland environment which nature has provided. The gardener must first ask if he or she can provide growing conditions similar to those in which the plant now thrives. If not, leave the plant to nature.

Before digging, the home owner must decide which native plants will best fit his or her landscape needs. It would be unwise to select a native dogwood for a sunny location, since dogwood demands shade or overhead protection. The planting area for the new plant should be well prepared prior to transplanting. Dig the planting hole both wider and deeper than the native plant's root system. Add woods loam, peat or humus, or, preferably, the type of soil from which the native is taken. Have leaf mold and loam on hand to fill in or work around the new plant's root system.

In choosing the native plant to transplant, do not attempt to transplant an overly large specimen. Small plants are usu-

ally more vigorous. They grow much faster and are easier to handle. It may be necessary to tag the plant in the wild while in leaf or berry to be sure of a positive identification. Young elms, void of foliage, often resemble native redbuds. Not all hollies will produce berries; in selecting yaupon, deciduous holly, and American holly, choose the female plants with berries.

Particularly in the case of large specimens, it may be well to prune the root system of the selected native prior to digging. Prune the plant's lateral roots at least one growing season prior to complete transplanting. Making spade cuts around the plant helps it to adjust to shock prior to transplanting and develop a more intensive root system.

When transplanting, lift the plant with a ball of earth if possible. Wrap the ball with a moist burlap sack or similar material for easy transferal and to prevent disturbance of the root system. Plant the native plant at its normal growth depth immediately after digging. Water well after planting, and mulch over the root areas with leaves, straw, or leaf mold.

Pruning and transplanting plants is often difficult for the gardener, but usually is essential for viability. Cut back the upper branches and end shoots of limbs to compensate for loss of root area and to encourage new branching and foliage growth come spring. Some of the foliage should be stripped or removed from evergreen plants.

Some of the most desirable and abundant native plants that may be transplanted now include:

- Dogwood
- Redbud
- River Birch
- Sassafras
- Cherry Laurel
- Red Cedar
- American Holly
- Yaupon
- Native Hawthorn
- French Mulberry
- Native Oaks, Elms, and Maples

Regardless of your choice, be sure you transplant with caution and care -- otherwise, leave it to nature.



Garden Checklist for January and February

*Dr. William C. Welch, Landscape Horticulturist
Texas A&M University, College Station, Texas*


- Plant a tree on Arbor Day. Texas Arbor Day is always the third Friday in January. This year it falls on January 17.
- Now is an excellent time to transplant mature or established trees and shrubs while they are dormant.
- Make your flower and vegetable garden plans now before the rush of spring planting. Time spent in armchair gardening before the fireplace will pay off in improved plant selection. Besides, it is fun to page through the garden catalogues.
- Sow seeds in flats or containers to get a jump on plant growth before hot weather arrives. Petunias, begonias, and slow-growing transplants should be sown in early January. Warm temperature plants, such as tomatoes, peppers, marigolds, and periwinkles, should be sown in late January.
- Apply a light application of fertilizer to established pansy plantings. Use one-half pound of ammonium sulfate per 100 square feet of bed area. Repeat the application every 4 to 6 weeks, depending on rainfall. Dried blood meal is also an excellent source of fertilizer for pansies.
- Prepare beds and garden area for spring planting.
- Select and order gladiolus corms for February/March planting. Plant at two-week intervals to prolong flowering period.
- Check junipers and other narrow-leaf evergreens for bagworm pouches. The insect eggs overwinter in the pouch, and start the cycle again by emerging in the spring to begin feeding on the foliage. Hand removal and burning of the pouches are an excellent means of reducing the potential damage next spring.
- The life of the flowerpot plant received as a Christmas gift can be prolonged with proper care. Keep the soil moist, but provide drainage so that excess moisture can flow from the pot. Keep the plant out of range of heating ducts and away from heating units. Keep in a cool room at night, preferably at 60 to 65 degrees F.
- Don't fertilize newly set out trees or shrubs until after they have started to grow, and then only very lightly the first year.
- When buying plants, the biggest is not always the best, especially when dealing with bare-root plants. The medium to small sizes (4 to 6 feet) are usually faster to become established and more effective in the landscape than the large sizes.
- Prune bush roses during February or early March. Use good shears that will make clean cuts. Remove dead, dying, and weak canes. Leave 4 to 8 healthy canes, and remove approximately one-half of the top growth and height of the plant.
- Now is an excellent time to select and plant container-grown roses to fill in those bare spots in your rose garden.
- When pruning shrubs, first prune out any dead or damaged branches; then thin out by removing about one-third of the canes or stems at ground level, removing the oldest canes only; and last, shape the rest of the plant, but do not cut everything back to the same height.
- Plant dahlia tubers in late February and early March.
- The following flower seeds may be sown directly without protection in well prepared flower beds in February or March: nasturtiums, annual phlox, California poppies, coneflowers, and larkspur. Petunia plants may be set out in sunny, well drained locations, with little chance of cold damage except in far North Texas.
- Water foliage plants as well as other containerized plants only when needed and not by the calendar.
- Climbing roses should be trained but not pruned. Weave long canes through openings in trellises or arbors and tie them with jute twine or plastic/wire plant ties. Securing canes now prevents damage from winter winds, and contributes toward a more refined look to the garden when roses are blooming. Wait until after the spring flowering period to prune climbing or once-blooming shrub roses.



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LANDSCAPE DESIGN

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JANUARY 27-29, 1997
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Horticultural Update is published by
 Extension Horticulture,
 Texas Agricultural Extension Service,
 The Texas A&M University System,
 College Station, TX

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