

The Oklahoma Cooperative Extension Service Bringing the University to You!

The Cooperative Extension Service is the largest, most successful informal educational organization in the world. It is a nationwide system funded and guided by a partnership of federal, state, and local governments that delivers information to help people help themselves through the land-grant university system.

Extension carries out programs in the broad categories of agriculture, natural resources and environment; family and consumer sciences; 4-H and other youth; and community resource development. Extension staff members live and work among the people they serve to help stimulate and educate Americans to plan ahead and cope with their problems.

Some characteristics of the Cooperative Extension system are:

- The federal, state, and local governments cooperatively share in its financial support and program direction.
- It is administered by the land-grant university as designated by the state legislature through an Extension director.
- Extension programs are nonpolitical, objective, and research-based information.
- It provides practical, problem-oriented education for people of all ages. It is designated to take the knowledge of the university to those persons who do not or cannot participate in the formal classroom instruction of the university.
- It utilizes research from university, government, and other sources to help people make their own decisions.
- More than a million volunteers help multiply the impact of the Extension professional staff.
- It dispenses no funds to the public.
- It is not a regulatory agency, but it does inform people of regulations and of their options in meeting them.
- Local programs are developed and carried out in full recognition of national problems and goals.
- The Extension staff educates people through personal contacts, meetings, demonstrations, and the mass media.
- Extension has the built-in flexibility to adjust its programs and subject matter to meet new needs. Activities shift from year to year as citizen groups and Extension workers close to the problems advise changes.



Roses in Oklahoma

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Roses continue to be one of the most popular flowers in Oklahoma. Many roses are considered high maintenance landscape plants, however several varieties and species exist that are carefree, easy to grow, and look wonderful in the landscape. Most modern roses (those that have been hybridized for their striking colors and "ideal" bloom forms) survive, but grow and flower poorly without proper culture. While cultural details vary among rose species and growers, the following cultural procedures should help you produce good quality plants. Begin their culture by choosing a proper planting site.

Site Selection

An open, sunny planting site protected from strong wind is preferable for roses. Rose plants should have at least six hours of full sun. This will dry dew and overnight rainfall collected on the plants and reduce the occurrence of mildew and blackspot. Roses planted within two feet of a wall may get sunburned from reflected heat. Ideally, rose trellises should not be closer than 18 to 24 inches to walls. Sluggish air resulting from crowding rose plants fosters diseases. Avoid planting roses under the branches of trees where they may suffer from a lack of light and competition with tree roots. Roses seldom prosper in the vicinity of such fibrous rooted trees as birch, elm, maple, willow, oak, and others.

Site Preparation

When building a traditional rose garden, remove grass, weeds, or other plants for a width of four feet for a single row and six feet for a double row. For convenience in caring for plants, do not plant more than two rows together. For further planting, allow about a five-foot walkway between the next bed of roses. Raise the planting beds or grade the site to drain surface water.

If the soil feels grainy like table sugar, it is too sandy for roses. If damp soil feels like modeling clay, it has too much clay. Sandy soils dry too quickly. Clayey soils hold too much water for too long. To make soils suitable for growing roses, organic matter such as compost, peat, and cotton burrs can be mixed to improve soil conditions.

Apply a three- to four-inch layer of finely ground organic matter over the entire bed area and till or spade it in 8 to 10 inches deep. When large amounts of organic matter are mixed in the soil, extra nitrogen should be added. As organic matter decomposes, nitrogen is tied-up. Thus, plants may become nitrogen deficient. When the organic matter rots, nitrogen will

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be released. Many rose growers prefer well rotted barnyard manure as a soil amendment. Dehydrated manure is commercially available. Too much organic matter such as peat, compost, and ground hulls tilled in clay soil at one time can hold too much water as well as tie up the nutrient supply.

Poor subsurface drainage is difficult to correct. In some cases, raising the bed six or more inches will lessen the problem.

On sloping sites of heavy clay soil, a drainage system can be installed in the bottom of the bed to remove excess subsurface water. Lay flexible perforated plastic tubing (with the perforations facing upward) on the bed bottom. Cover the tubing with six inches of river-washed gravel. Continue the drain beyond the bed to a lower point to allow excess water to run out of the bed. Arrange beds on the contour to lessen erosion.

If the soil is impervious and the site is flat, choose a hardy rose and plant it in a container or build raised planters. Planters should be at least 12 to 16 inches deep with numerous weep holes at the base of the wall. Prepare the growing soil as described below.

Soil

Roses planted in good soils grow best. Soils that are very high in sand, heavy clay, or are shallow soils with poor drainage will make it difficult to grow healthy roses. In some instances amendments can be added to improve soil structure; but in these cases it is usually better to build raised beds. Raised beds can be created by simply bringing in loads of good topsoil to form berms or mounds in which to plant. Another option would be to build raised beds using various materials such

as landscape timber, treated wood, landscape blocks, etc.

If your soil grows good shrubs and trees, it probably needs no special preparation to grow roses. However, soils in most new urban areas require special preparation.

Preparing soil in the autumn is best. If you can't do it then, spade the soil eight to 12 inches deep at least three weeks before planting to let the soil settle.

Before planting, take a soil sample to find out the soil pH and fertility. If you are sampling an unprepared bed, take a six-inch deep profile slice of soil from at least three bed locations. The slices should be about one inch thick. Mix all slices together and take a pint from the mixture to your local Cooperative Extension Office. There will be a small lab fee. Based on the analysis, you will be told what to use to change the current pH and fertility level, if necessary.

Soils for roses should be slightly acidic, about pH 6.0. Soils can be made more acidic by adding sulfur or more alkaline by adding finely ground agricultural or hydrated lime. Add sulfur or lime only according to soil test results. Too much of either may keep plants from growing properly.

Plant Selection

Before purchasing rose plants, analyze your garden or yard to determine what size, type, and color would be most pleasing. Consider your own interests and ability in gardening. Perhaps a rose requiring relatively little care would be more attractive than a hybrid rose whose potential is never reached due to lack of extensive care. Above all, do not purchase a plant and then rush home in search of a place for it. If you do not have a landscape plan drawn to scale to work toward, at least give some thought to the effect you are striving for.

Each year the American Rose Society (www.ars.org) rates and reports on the newer rose cultivars (varieties). These ratings could be consulted for expert opinion. For added information, check with your local nursery professional, the local rose garden manager, or with a well-informed rose grower in your locality.

Select dormant roses as soon as they become available. They should have three to five bright green stems about thumb-sized. No new growth should have broken the wax stem covering. If several leaves and new white stems are showing, the rose will be more challenging to establish. If weather prevents immediate planting, bury the roots in a slanted shallow trench. Cover them with moist soil, compost, or leaves and water. Stems should be left exposed. They may be left in this manner for several weeks.

Roses are usually classed into two general categories according to their habit of growth—bush roses and climbing roses. The following classification is taken in part from "Roses for the Home," (Home and Garden Bulletin No. 25, USDA).

Bush Roses

Bush roses are divided into several categories because of differences in flowering habit, winter hardiness, and other traits. These include the following:

Hybrid Teas are the most popular type of rose grown today.

They bloom from May to frost and range from two to six feet in height. They commonly produce one spectacular bloom per stem. They have large buds and are valuable for cut flowers and specimen display.

Peace rose, such as Betty Boop, is a long-standing variety of hybrid tea rose.

Floribunda flowers resemble small hybrid tea roses borne in clusters. This type produces a vigorous bush and blooms prolifically for a constant color show. It is hardy and requires less care than hybrid tea roses. Floribundas are useful for bed plantings, massing in a shrub border, or even for containers.

Grandifloras bear the same type of bloom as the hybrid tea roses, but the flowers are in clusters and on shorter stems. They are hybrids of floribunda and hybrid tea roses. Grandiflora roses make fine cut flowers and may be used as a specimen plant or in mass plantings. Queen Elizabeth is a well known selection. The plants are usually large (up to six to eight feet), vigorous, and hardier than hybrid tea roses.

Tree Roses (pictured below) consist of large heavy understocks with bush cultivars or varieties budded onto them several feet above the ground surface. These roses are semi-hardy in most cases and may require winter protection. Tree roses are useful for accent and specimen purposes but seldom prosper in western Oklahoma. Miniature tree roses also can be purchased that are budded on stems about 18" tall. These are ideal for containers on balconies or other areas of limited space.

Polyantha Roses bear large clusters of small, one-inch flowers. These clusters are similar to many of those found on climbing roses. Polyanthas are hardy and are well-adapted to Oklahoma conditions. The rather dwarf, vigorous bushes require relatively low maintenance.



Ramblers and small flowered climbers that bloom only in the spring should be pruned immediately following bloom. Spring flowering roses and shrubs set flowering buds in late spring and summer. Remove canes that have flowered from the base or crown of the plant. Train or tie up developing new shoots.

Large flowered climbers that bloom only in the spring are also pruned right after flowering. Cut back side shoots that have flowered, and remove the oldest canes. Train up only enough new canes to cover the desired area and remove the rest.

Remove only very weak or dead branches of climbers that bloom all summer. These climbers can be pruned lightly after the first burst of bloom.

Heavy cutting of flowers, particularly with long stems, should be avoided during a plant's first year of growth. This will allow the plant to become established more readily. Remove all flowers or flower clusters just above the first five leaflet leaves when the petals begin to fall. Even when cutting flowers from established plants, do not remove more foliage than necessary. Let autumn roses produce hips (seed pods) to induce early freeze hardiness and also retain for their winter appeal.

Cut roses just as the petals begin to unfold and place the stems in lukewarm water, recut, and place in arrangement or refrigerate. Roses may be held in the refrigerator for several days before using them. Commercial flower preservatives are also useful in prolonging flower life.

To reduce winterkill of tender roses like hybrid tea roses, mulch them eight to 10 inches deep with a mixture of soil and mulch or compost 10 days after killing fall frost in the Panhandle, northern, and northwestern Oklahoma. Prune off small stems, leaving no more than five or six large canes. Cut back to buds facing away from the center of the plant.

Miniatures only need three to four inches of covering. The canes of certain cold-sensitive climbing hybrid tea roses



should be taken off the trellis and laid down and covered eight to 10 inches deep.

Tree roses must be handled differently, since the bud is located at the top of the stout trunk. If there is still a chance of frost at the time of planting, wrap this bud union in straw, and cover with burlap. Tie securely with twine. Stake the plant with a stiff pole or pipe to keep it from whipping in the wind and loosening the roots. Tree roses are more challenging to grow. All winter mulches must be removed by the time roses resume growth in the spring. Be alert for growth under the cover in February. All rose canes should be completely uncovered by March 1 in most parts of the state.

References

Oklahoma Rose Society
www.oklahomarosesociety.org

Tulsa Rose Society
www.tulsarosesociety.org

Miniature Roses are dwarf plants that vary from a few inches to one foot or more in height. Flowers are small, but most cultivars flower freely over a long period of time. These roses are useful for borders, edging, rock gardens, and in containers. They also can be grown in the house. However, many cultivars are disease and pest prone.

The foregoing rose types flower repeatedly in the growing season. Hybrid tea, floribunda, and grandiflora types usually make up the yearly All America Rose Selections (www.rose.org). They usually require weekly pest control, though some have good disease resistance.

Hybrid Perpetuals produce one heavy spring crop of large, fragrant flowers and often a few autumn flowers. The plants are about twice as large as the average hybrid tea and require minimum care. The hardy plants require no winter protection. If used as a bed planting, a low shrub border should be provided to screen the leggy appearance. Hybrid perpetuals and Old-Fashioned roses are seldom found in the trade. (Frau Karl Druskchki is a good white hybrid perpetual cultivar.)

Shrub Roses comprise various wild species, hybrids, and varieties that develop large, dense bushes more closely resembling shrubs. Their foliage alone is often ornamental. Their small spring flowers and fall seed pods contribute to their value as ornamentals. Most shrub roses are hardy throughout the state. Their primary use is for mass, screen or hedge plants. The popular Knock-out® series falls in this group.

Rugosa roses have been hybridized into some fragrant repeat blooming Carefree Beauties. These semi-double roses range from bright red to white and yellow in color. Rugosa roses produce the most disease and pest free plants. They are extremely salt tolerant and should be one of the better roses for beginners.

Meidiland roses are generally drought tolerant and somewhat disease resistant. Most have seven leaflets, and most grow five to seven feet tall with wide arching branches. They are available in red, pink, and white cultivars that bloom throughout the summer. Cultivar Ferdy is covered with coral flowers for three to four weeks in spring of the second year, so avoid overpruning. Cultivar Bonica is shell pink, grows like a floribunda, and flowers all summer and into fall. Many other selections exist.

Old-Garden Heirloom or Antique Roses have been in cultivation since Colonial times. The abundant spring flowers are generally less attractive than today's varieties, but their fragrance is usually better. Old roses have an inherent beauty of form, making them easy to use as a landscape plant. Many have handsome foliage, while others produce attractive hips in the fall. These very hardy roses require little care and flower abundantly in the spring. Cabbage or Moss roses are typical types. They bear buds covered with dense moss-like growth that open to fragrant pink blooms.

English (David Austin) Roses were crossed with old roses and modern hybrids for really fragrant beauties with a great deal of disease resistance. Several rose producers now offer this rose category.

Climbing and Pillar Roses

Climber is a general term for roses that produce long, vigorous canes that cannot support their own weight. They are usually trained on trellises, fences, walls, posts, or arbors. Many of these varieties can be used as ground cover when no supporting structure is used. This category is usually divided into several groups, although many individual roses may qualify for one or more classification(s).

Ramblers are one the most vigorous of all the climbing roses. Some canes may produce as much as 20 feet of new growth each season. The small flowers are borne in clusters in the spring on the previous season's growth. Unfortunately, many of these cultivars are subject to severe mildew damage. Most are hardy and require little or no winter protection. Seven Sisters is an old, mildew-prone, pink flowering rambler found on many farm fences in southern Oklahoma.

Everblooming Climbers are much less vigorous than ramblers. They are sometimes called pillar roses. Their slower growth makes them better suited for use in a small garden. They usually flower heavily in spring, and if conditions are favorable, may flower again in the fall. A few cultivars bloom as often as hybrid tea roses. Blaze Improved rose blooms both spring and fall. Father Hugo roses freely produce single yellow spring flowers followed by red pods in the fall. Some cultivars bloom more freely if the branches are trained horizontally rather than vertically. This group is quite winter hardy and more disease resistant.

Climbing Hybrid Tea roses are in most cases identical to their bush parent plants. In general, climbing hybrid tea roses do not bloom as continuously as their bush parents. Climbing hybrid tea roses are just as subject to disease and winter damage as the bush forms.

Climbing Floribunda and Polyantha roses are climbing cultivars of bush-type plants. They flower fairly continuously and are hardier than climbing hybrid teas.

Ground Cover and Carpet Roses produce long canes that trail on the ground, on banks, or on walls. These ground cover roses produce small fragrant flowers in late spring. They are hardy and have a place in some gardens. *Rosa wichuraiana*, the Memorial Rose, is typical of the trailing roses. It grows just two feet tall and roots where stems touch the ground. Flowers are white, but the cultivar Hiawatha has red blooms with white centers. This category of rose is useful for quickly covering bare ground.

If your local nursery does not have the type of rose you want, ask them to order it, preferably in early fall.

Planting Procedure

Time

February and March is the preferred planting time for bare-root or dormant roses. This is especially true for hybrid tea roses. Fall planting can be done by mulching around new plants to prevent freezing. Do not plant actively growing roses in the spring until danger of frost is past. Hardened container grown roses, however, can be planted any time the soil is workable. For potted/containerized roses, plant at or slightly above (one inch) soil grade.

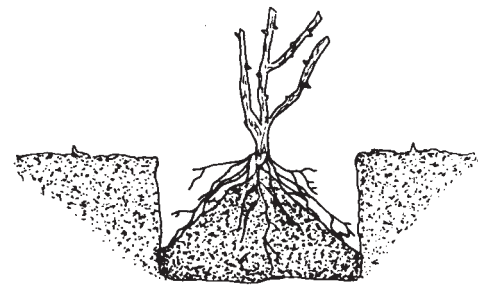


Figure 1. Make the hole big enough to fit the roots over the firmed cone of soil.

Care of Plants

Open packages and remove wrappings as soon as plants are received. Be careful not to bruise or break roots. Do not let the roots dry out. If roots are too dry, place them in water out of the sun for a few hours before planting. If it will be sometime before planting, bury the roots in a slanted, shallow trench. Cover them with cool, moist soil or peat and water. Stem tops should be left exposed. They may be held in this manner for several weeks until the site is ready for planting. Homeowners may alternately keep their roses in the shipping cartons in cold storage at 36° to 42° F. Be certain to keep roots moist.

Spacing

The space required depends upon the type and vigor of the rose. Miniatures will require one- to two-foot spacing, while hybrid tea roses, grandifloras, polyanthas, and floribundas need two to four feet. More vigorous bush types may require four- to six-foot spacing. Medium to large plants in a five-foot planting bed should be in staggered rows for better air circulation. Climbing roses along a fence should be spaced from 6 to 10 feet apart.

Setting the Plants

Keep roots moist while digging the hole. The planting hole should be dug at least one foot wider and six inches deeper than the spread of the roots. Backfill to form a cone shaped mound of soil in the center of the hole. Prune off all damaged or broken roots. Place the rose plant directly over the point of the cone and spread the roots down the slope, being careful to spread or fan the roots. If roots are crowded or curl up in the hole, make the hole larger. Top roots should be buried one to three inches below the soil surface.

The bud union near the plant base of budded varieties should be no higher than one inch above the soil surface and lower than the soil surface when planting is completed. For roses on their own roots (no graft), plant so the area where branches begin is just at ground level. Work soil in closely and firmly around the roots. When the hole is three-fourths full of soil, gently press the soil down with your foot or a shovel. Then fill the hole with water and let it drain. As soon as the water drains, finish filling the hole with soil.

Pest Control

Roses are attacked by a large number of insect pests and diseases. They vary in intensity from year to year and from

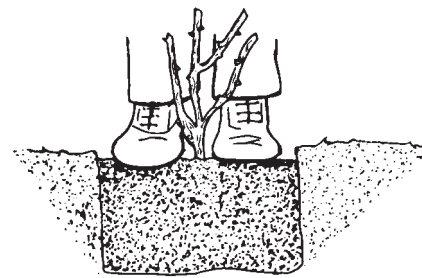


Figure 2. Press, but do not stomp to firm the soil around the roots.

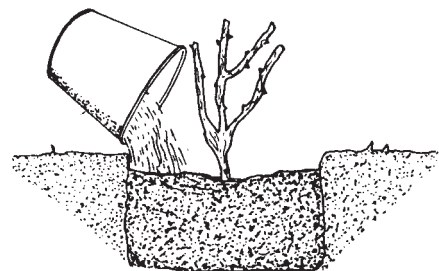


Figure 3. Fill the hole with water and let it drain.

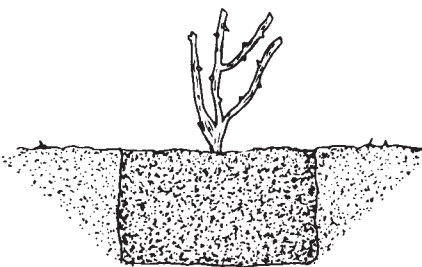


Figure 4. Fill the hole with soil to the bud union and water again. Do not pack the soil again.

area to area. Some roses on some sites require less pest control. Consult with a nursery or garden center professional in your area for the best pest-resistant selections. Three general recommendations should be followed rigorously to aid in controlling these problems.

1. Buy plants that are free from insects and diseases.
2. Keep beds free of weeds; fallen rose leaves; and dead, diseased, or insect-infected canes. Water plants without wetting the foliage.
3. Apply combination insecticide-miticicide-fungicide treatments weekly or as needed during the growing

season. Using systemic insecticides and fungicides may reduce the frequency of treatment. Begin when the plants have about one-half inch of new growth in the spring. During hot, dry weather, use wettable powder forms of chemicals rather than liquid concentrates. During dry weather, some disease control can be omitted.

Many combination sprays or dusts are available. Some are premixed and come ready for use. Do not use household sprays unless they are labeled for plant use. For more information on rose diseases, see OSU Extension Fact Sheet EPP-7607, "Diseases of Roses." Always read and follow the directions on the product label.

Maintenance

Old-fashioned roses such as hybrid perpetuals, Rugosa, and shrub roses require less overall care than the modern hybrid tea types.

Keep a grass-free circle at least 36 inches across around the base of individual roses. Keep grass out of beds with concrete, metal, or wood curbing or a grass killer. Caution is the watchword when using any herbicide.

Keep plants mulched. Mulch reduces the need for cultivation and kills most weeds. Mulches also maintain aeration, lower summer temperatures, and retain moisture for longer periods. Peanut hulls, pine bark, cotton burrs, rotten manure, compost, straw, and leaf mold can be used as a mulch. However, a good mulch should not pack.

Do not use herbicide-contaminated cotton burrs. Use a two-inch layer of a fine material, such as rotten manure, or six inches of a coarse material, such as straw. Mulches may be cultivated into the soil in the spring or renewed.

Some herbicides can be used in rose beds to control weeds. Read the labels for current clearance.

Watering

Water plants only after the soil becomes rather dry. Soak the soil to a depth of 18 to 24 inches. Frequent light waterings tend to cause shallow root systems which are easily damaged during drought. Soaker hoses or trickle irrigation are ideal to apply water slowly and prevent the wetting of foliage. Newly established roses may require up to two inches of water per week.

Fertilization

Around April 1 or up to four to six weeks after spring planting, apply a complete fertilizer or a special rose fertilizer. Follow the label directions or recommendations from your soil test if one is made. Work the fertilizer shallowly into the soil around the plant and water it in. Do not place fertilizer against plant stems. Soluble fertilizers can be mixed with water and drenched into the soil. Additional applications may be made every four to six weeks during the growing season.

High nitrogen fertilizers such as ammonium sulfate or urea may be added if increased vigor is desired. Do not apply high nitrogen fertilizer after July 15 unless the rose plant is quite hardy and will be thoroughly irrigated. The final fertilization date may be extended to August 15 if diluted liquid fertilizer is used. Excess nitrogen produces soft growth that could be more susceptible to winter kill. However, nitrogen starved plants may suffer even more winter kill. Every two years, check soil

acidity and keep it about pH 6.0 (slightly acid). Proper acidity prevents most micronutrient deficiencies.

Disbudding

Large single stem display flowers such as hybrid tea roses can be grown by disbudding. On large flowered types, remove all except terminal (main tip) flower buds by "rubbing" them out as soon as they can be seen. Flower size on other types can be increased in the same way.

Pruning

The pruning of roses varies according to flowering habit and plant vigor. Most Oklahoma roses should not be pruned before March 15. Pruning tends to cause new growth which is often killed by late spring freezes. However, most modern roses should be pruned annually. Prune to maintain plant shape, remove dead or diseased wood (often dark or blackened canes), and regulate desired flower size. If only a few large flowers are preferred, cut the plants more severely. Too much spring pruning can weaken plants. If a large number of average-sized flowers is preferred, only light or moderate pruning is necessary. Long-handled pruning clippers (loppers) and hand clippers are needed for pruning roses. A sharp, fine-toothed pruning saw is also useful for cutting large dead canes.

Leaves and stems grow from buds. Bud position determines the shape of the plant. Prune for an open-centered plant. Thus, make all cuts just above outwardly facing buds. Make the cut slightly above and angling downward away from the bud. Remove branches that grow toward the center of the plant. When two branches cross, the smaller one should be removed. Any growth originating below the union with the understock should be removed from such budded roses as hybrid teas and floribundas. If the average number of leaflets on the stems of such roses is more than five, the cane is probably understock.

Hybrid tea roses usually require relatively severe pruning because of winterkill of the canes. In the spring, remove dead or diseased canes. Then, cut back remaining canes to six to 24 inches, depending on plant vigor and desired flowering.

Grandifloras, floribundas, and polyanthas require less pruning. Remove dead or diseased canes and shape the plant.

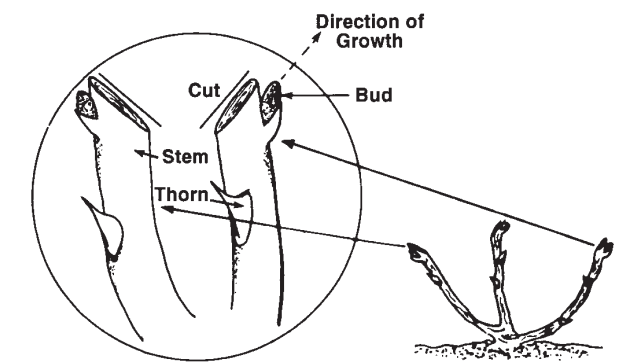


Figure 5. Pruning to an open center will develop a healthier, more attractive rose plant.