

Growing Roses

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Roses are one of the most popular garden plants. They may be used as flowering shrubs in the landscape, but they are at their best in properly spaced solid plantings. Anyone can grow roses. Some gardeners try to grow too many varieties or too many plants for the space available. Ten well-chosen varieties, carefully maintained, produce more blooms and give far more pleasure than 50 poorly maintained plants.

Types of Roses

There are many types of garden roses. Most popular are tea roses, hybrid teas, hybrid perpetuals, floribundas, polyanthas, miniatures, and climbers. Of these, the hybrid teas and floribundas are grown most often. The choice is almost endless. The American Rose Society, P.O. Box 30,000, Shreveport, LA 71130, publishes the national rating of all named varieties best suited to your need, location, and preference.

Selecting the Location

Roses do best in sunny locations where they are sheltered from strong winds. Do not plant them under trees. They grow best in well-drained, fertile loam soils. Soils containing excessive amounts of alkali salts or other harmful chemicals are not recommended for roses. You can provide drainage in heavy soils or spots with an impervious layer underneath by installing drain tiles or by digging trenches and filling them with rock or coarse gravel. If the water table is high where you want to grow roses, raise the rose bed 12 inches or more above the existing grade. Drainage can also be improved by incorporating 1/2- to 1/4-inch aggregate rock or charcoal in heavy soils.

Need for Sun

Plant roses where they will receive 6 hours or more of sun during the day. They may grow in shade but are

more susceptible to attacks by mildew and thrips than when grown in full sun. Growers in southern New Mexico find that flowers open and fade faster than those grown in cool climates. Many varieties cease to bloom when summer temperatures are above 90° F (35° C). In areas with prolonged hot weather, a location protected from the hot sun in the late afternoon may give better results.

Danger of Frost

In most areas of New Mexico, roses are not severely injured by cold winter temperatures, although in the high mountains they need some protection. Unseasonable spring frosts or sudden drops of temperature in the fall may damage tender growth in any area. Banking the plants with soil in the late fall prevents injury in areas of subzero temperatures (fig.1).

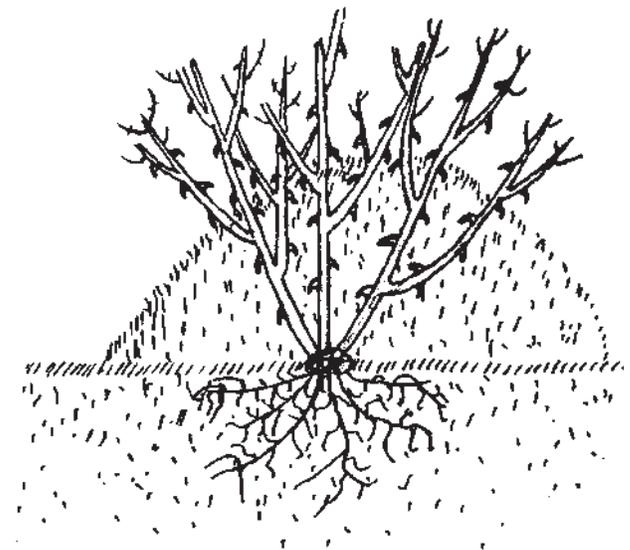


Figure 1. Protect rose bushes against winter injury by covering the crown and lower canes with soil, after the first hard freeze in the fall. Remove the mound of soil in the spring when danger of a hard freeze has passed.

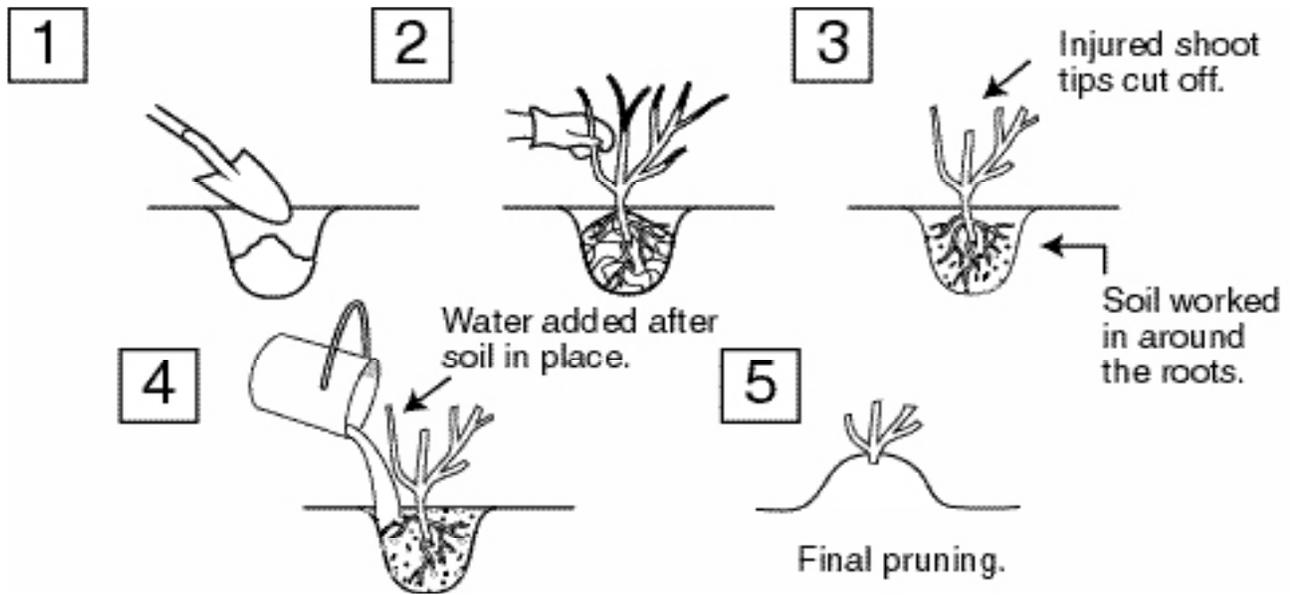


Figure 2. Planting a rose — Survival and subsequent growth are highly dependent upon the planting process. Numbered illustrations coordinate with numbered paragraphs under Planting the Bush.

Condition of Nursery Plants

It usually is most economical to choose high-quality plants. Lower grades may be cheaper, but plants are usually weaker and require greater care in transplanting and maintenance. Plant loss is often higher with lower grade plants. Most nursery professionals try to keep roses in good condition after they are delivered. Many bushes are coated with wax to prevent excessive drying, but the wax can become a problem under high temperatures.

Rose bushes are usually shipped dormant, with bare roots wrapped in moist packing media to prevent drying. If the tissues are plump with no shriveled bark the bushes are in good condition. Avoid buying plants on which the tissues have dried out and the bark is shriveled. Sometimes, conditions beyond the nursery's control cause rose roots to dry out. When this happens, the plant may be slow to start growing or it may not grow at all unless moisture is restored to the dry bush. Soak the roots in water, or better still, cover the entire plant with moist soil for several days, even for a week or longer until the tissues have taken up the normal amount of moisture. Only occasionally will a bush be so badly dried on arrival that it cannot recover by either of these treatments. Bushes with bare roots must be planted before new growth appears. Plants that start to grow before they are planted often

die. Always select dormant plants for bare-root planting.

Planting Time

February or March is normally the best time to plant bare root roses in New Mexico. They may be planted later, if you can find healthy, dormant bushes. Bushes planted in the fall and early winter usually die back more than those planted in the late winter. Plants growing in containers may be planted throughout the growing season, although special attention is usually necessary to keep these growing through the first summer.

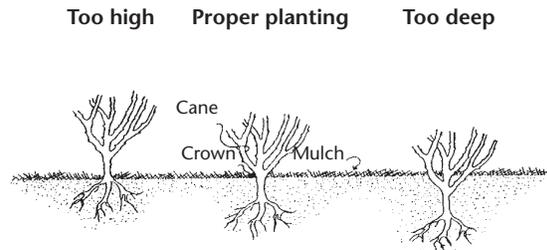


Figure 3. Diagram shows proper planting depth to locate the crown of the plant above the soil and mulch without exposing the roots.

Planting the Bush (fig. 2)

1. Dig the planting hole somewhat larger than the root system. Mix a quart or so of peat, compost, or other organic matter with the soil removed from the hole. DO NOT add fertilizer to the planting mix; doing so delays growth and can injure the developing roots. Make a cone of the soil mixture in the planting hole.
2. Remove any broken or injured roots or canes, less than a pencil thickness in diameter. Spread the roots over the cone of soil in a natural manner and position the plant so the bud union (the swelling at the stem's base) is even with the surface of the soil. (In colder parts of the state it should be 1 to 2 inches below the surface.)
3. Work soil mixture around the roots to eliminate any air pockets. Firm the soil around the roots and add more soil until the hole is three-quarters full.
4. Fill the hole with water and allow it to soak in, then refill it. After the water drains, check to see if the bud union remains at the proper level. Fill the remainder of the hole with soil and tamp lightly.
5. Trim the plant to two to five strong canes, 8 to 12 inches long. Remove all weak and twiggy growth. Mound soil 6 inches deep around and over the plant. This protects canes from drying out. When

the buds sprout, gradually remove the soil mound, probably within two weeks or so. Check buds every two to three days. Loosen the name tag so it does not constrict the cane. When vigorous growth starts, fertilize the plants.

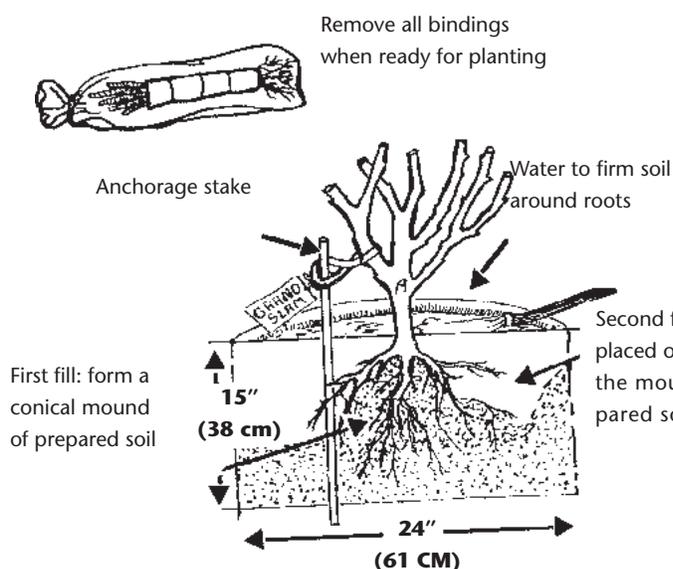
Transplanting

Occasionally, a growing rose bush must be moved or a balled or container rose may need to be set out after the buds have started growth. In this case, make certain that the soil around the roots, or in the container or ball, is moderately damp so that it will not crumble and expose the roots. Remove the container or burlap and twine from the root ball and plant it so the graft union is 1 or 2 inches below the surface of the soil. Cut back and thin out the top to compensate for loss of roots. After planting the bush, protect it from sunburn for a few days with burlap or other covering (fig.3). Figure 4 shows proper procedure for planting bare root and container-grown roses.

Replacing the Declining Plant

A good rose bush, properly maintained, should produce satisfactory flowers for 15 years or more. In time, however, bushes normally decline. When this happens, it is better to replace them than to try to rejuvenate old plants. Better varieties are constantly being introduced. Do not replace a bush until you

Dormant plant arrives in moisture-proof wrapper



Planting a container-grown rose

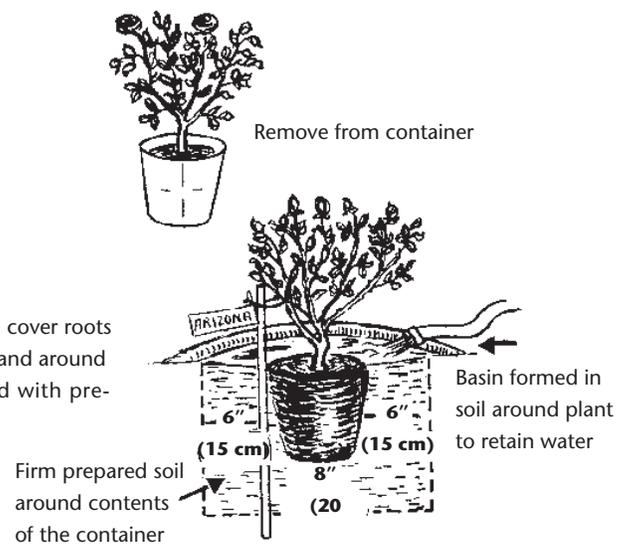


Figure 4. Planting bare root and container-grown roses.

know the cause of its decline. If the cause is crown gall, oak root fungus, excessive alkali, poor drainage, or root rot, you may need to treat the soil by sterilization, leaching or installing drainage before replanting. After such treatment, follow the same cultural practices used in the original planting.

Irrigating

For good growth, roses need a moderate amount of soil moisture throughout their root zone. Watering too often or too lightly encourages the development of a shallow root system. Leave a basin around the plant for irrigation until it becomes established. Once the plant is established the most active roots will be under the tips of the branches. Irrigate around the perimeter of the plant rather than at the base of the stem.

Depth of Irrigation

When irrigating, wet the soil to the full extent of the root zone, approximately two feet deep. Do not add water again until the surface of the soil becomes dry. Irrigation should take place when the soil moisture is at the point where the leaves begin to wilt. An inch of water in sandy soils should wet the soil a depth of about 12 inches; in loams, 6 to 10 inches; in clay soils, 4 to 5 inches. To thoroughly wet an area 10 x 10, 2 feet deep, will require about 125 gallons of water for sandy soils, 190 gallons for loam soils, and about 330 gallons for clay soils.

Frequency of Irrigation

Sandy soils do not retain moisture very long and must be irrigated every 4 to 10 days during the growing season. Loam soils retain more moisture than sandy soils, and may need irrigating every 8 to 15 days. Clay soils have high water-holding capacities and may need to be irrigated only every 15 to 30 days. Weather also affects the need for irrigation. During high temperatures or high wind, it may be necessary to water weekly or even twice a week in sandy soils. Learn to recognize moisture stress by the color of the foliage. Leaves are pale and limp when stressed for moisture. Check foliage in the mornings. Afternoon heat may produce similar symptoms. Tillage may make a rose garden attractive, but it usually causes loss of soil moisture.

Till only to control weeds. Mulch around rose bushes, conserves moisture and controls weeds. Peat moss, compost, straw, shredded bark, pecan shells, barnyard manure, and lawn clippings are examples of materials used as mulch. These also add organic matter to the soil as they decompose.

Some Common Soil Problems

In general, New Mexico soils tend to lack nitrogen and some may be slightly deficient in phosphorus. Most soils in New Mexico contain relatively large amounts of potash. These soils also often contain alkali salts and excessive amounts of limestone that interfere with the availability of iron. This causes a condition known as lime-induced chlorosis. Chlorotic (yellow) leaves on plants growing in soils known to have a high lime content usually indicate this problem. If too much lime is the cause, other plants nearby also will probably have yellow leaves.

Excess of Alkali

Browning of the tips and margins of older leaves are symptoms of salt burn. The browning may progress to include the entire leaf. The occurrence of salt burn is usually more prevalent in clay soils than in sandy soils. When alkali salts are present in a soil in excessive amounts, the first step is to leach out the soluble sodium and chlorine by heavy irrigation. The addition of sulfur (at the rate of 1 pound per 40 square feet) helps make these alkali salts more soluble. Good drainage is required in removing alkali from soils. Other mineral elements may occasionally cause problems when present in excessive amounts. For example, excessive amounts of chlorine or total salts in the irrigation water may cause trouble.

Use of Barnyard Manure

In general, New Mexico soils are extremely low in organic matter. To condition the soil into a mellow, friable soil, organic matter is needed. Tight clay soils become loose and crumbly with the addition of organic matter, while loose sands acquire water-holding capacity. Sources of organic matter include peat, compost, leaf mold, decomposed sawdust, and barnyard manure, probably the most widely used.

Manure is usually available and less expensive than other forms of organic matter, and it is usually higher in nutrient elements. Never apply barnyard manure around rose roots at the time of planting unless it has been composted for at least 12 months. Spreading 1 to 3 inches of partially decomposed barnyard manure over a rose bed each year is a good practice. Many growers use peat in planting, followed by topdressings of barnyard manure. A warning, however, manure frequently contains weed seeds, and feedlot manure often contains excess sodium.

Fertilizing

Do not guess at the cause of chlorotic leaves. Certain viruses that attack roses also affect the green color of the leaves. With viruses, the leaves are usually yellow only in spots. Each mineral deficiency produces identifiable symptoms.

Nitrogen deficiency causes pale green-yellow leaves; short, weak stems; and small flowers of faded color. Roses are heavy feeders on nitrogen. Recurrent blooming in the bush rose depends upon cycles of vegetative growth. Blooms are borne on new growth, without which only a few, weak-stemmed buds will develop. Nitrogen is the main nutrient responsible for this required cyclic growth. Vigorous shoots are developed, followed by flower bud formation, repeatedly throughout the season. Abundant nitrogen is required to produce this vegetative growth. Because of this repeated growth pattern, rose bushes need feeding every four to six weeks, beginning just before bud break in early spring. Continue to apply nitrogen at four-week intervals until three weeks before the average date of the first fall frost. Ammonium sulfate or its equivalent applied at the rate of 2 tablespoons full per plant should be sufficient for most soils. These rates may be a bit high for fertile clay soils, and somewhat low for sandy soils. Increase or decrease application rates according to amount of terminal growth the plant is making.

Phosphorous deficiency may cause the older leaves to drop without turning yellow; the stems may be weakened; and bud development may be slowed as a result of a small, weak root system. Phosphorous is essential, especially for developing flower buds. The pre-bud-break, early spring application of fertilizer should contain both nitrogen and phosphorous in more or less equal amounts. One-fifth to one-fourth cupful of 10-10-0, 10-20-0, or 16-20-0 fertilizer or equivalent, worked evenly into the soil underneath the canopy

of a newly pruned rosebush in early spring, provides ample nutrients to get the plant off to a good start. Apply an equal amount when new growth reaches 4 to 6 inches and again when the first blossoms have faded. Additional phosphorous should not be needed for the rest of the season.

Potash is seldom needed in New Mexico. Soil tests have shown that most soils contain adequate amounts. Occasionally, very light sands are low in potash. Even when needed, an application of 1 tablespoonful of muriate of potash, or its equivalent, per plant would be sufficient for two years or longer.

Iron deficiency first shows as a light yellowing in the tips of the young leaves. In time, the area between the veins becomes very yellow, while the larger veins remain dark green. Iron deficiency can be controlled by applying iron chelates to the soil. Iron compounds can also be applied as a foliar spray; this method is more satisfactory than soil applications. Two or three spray applications, applied early in the

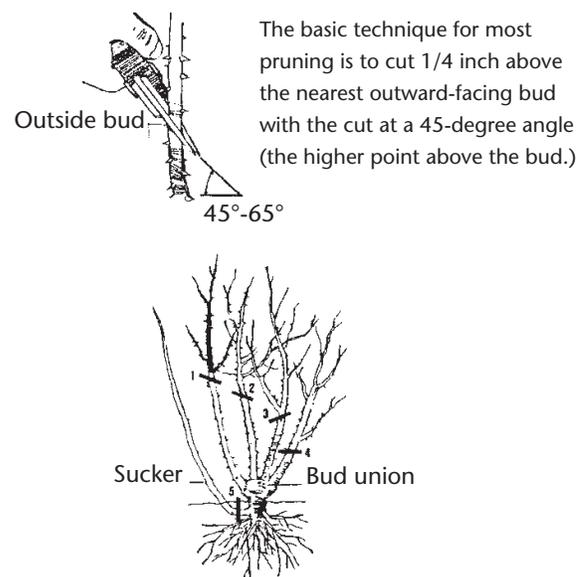


Figure 4. To prune hybrid tea and grandiflora roses 1) prune high for more flowers earlier or low for fewer bigger flowers later; 2) prune out weak and crisscrossing canes; 3) remove growth an inch below a canker; 4) remove damaged, dead or broken canes back to healthy growth; 5) remove sucker growth as close as possible to main root; 6) leave three to five 1 year-old canes, cutting each one back to 18 to 24 inches.

season, may be needed. In some cases, compounds containing zinc may also be needed to correct a chlorosis problem. Therefore, it may be advisable to select a product containing both iron and zinc. Take care to avoid spray drift because iron compounds stain walls and driveways.

Magnesium deficiency causes a loss of green color similar to iron deficiency, but even the smallest veins remain green. Damage is most pronounced at the top of the plant. Magnesium deficiency can be treated with a chelated micronutrient fertilizer.

Pruning

Pruning improves the quality of the blooms, regulates the size and shape of the plant, and removes diseased and damaged parts. The basic technique for most pruning is to cut at a 45 degree angle 1/4 inch above the nearest outward-facing bud with the higher point above the bud (see fig. 4).

There is always a question about how much to cut back a rose bush. The time and amount to prune depends on the type of rose, its use, variety, location, and vigor. In the hotter parts of the state, bushes should be allowed to grow larger than in the cooler parts. Higher pruning will produce more flowers early, while lower pruning produces fewer but bigger flowers later. When pruning, first remove any dead, broken, damaged, or blotched canes back to where the pith, or

center of the cane, is white and healthy looking. Next, remove weak, spindly canes, canes growing toward the center of the bush, the weaker of two canes that cross, and suckers. Then, prune the remaining canes according to the directions for that type of rose.

Hybrid tea roses should be pruned in late winter. Bushes pruned in late fall or early winter may be injured by cold and require further pruning in late winter, resulting in more severe pruning than desired. Early pruning also tends to induce early cane growth that is subject to spring freezes. With varieties that tend to grow very upright (Talisman, Sutter's Gold, President Herbert Hoover, and others) thin in the center and cut back the remaining canes to outside buds. It usually takes a rose gardener several years to learn to handle each variety properly. With new varieties, prune carefully until you learn their growth habits. Since roses love sunlight, they should be pruned so as to develop open centers. Cutting canes back to buds that point outward causes a bush to spread. Healthy canes produce blossoms for 4 to 6 years or even longer, but canes 1 to 2 years old usually produce the highest quality, longest stemmed blossoms. When long, it may be difficult to get new ones to develop near the base of the plant. In general, properly pruned and managed hybrid tea bushes develop several new canes from the crown each year (fig. 5). Select three to five of the one-year-old canes that are located so as to form a bowl. It is best to leave no lateral branches and remove all small twigs. Cut canes back to 18 to 24 inches on moderately vigorous plants. Shoots on ex-

Pruning the hybrid Tea Rose

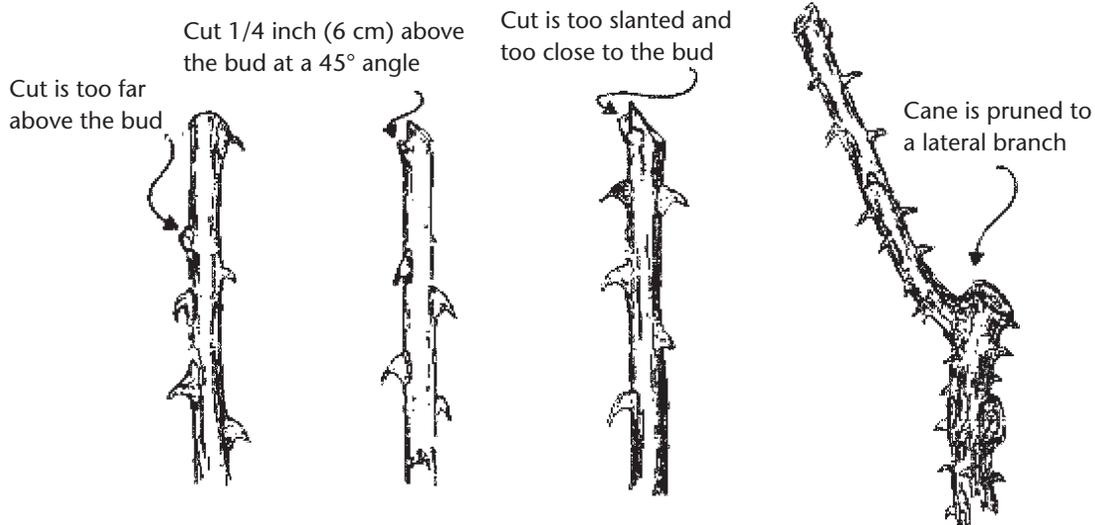


Figure 5. Proper pruning cuts heal quickly and minimize the risk of disease and insect entrance.

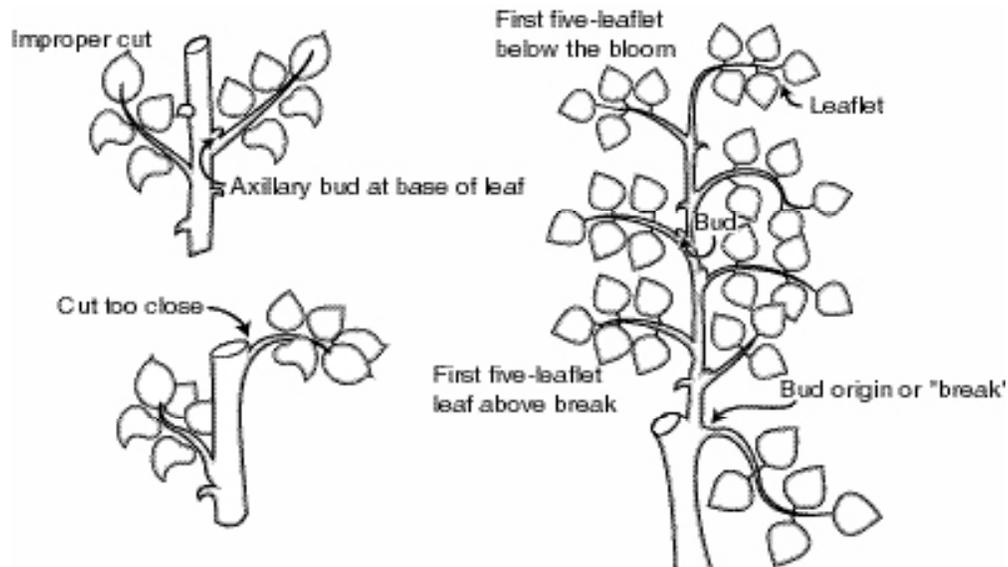


Figure 6. Pruning or cutting flower stems.

tremely vigorous plants may be cut to 24 to 36 inches if they have space to grow large. For exhibition roses, cut canes back to 6 to 10 inches. Plants often fail to produce new canes annually from the crown. When this happens, it becomes necessary to select laterals on older canes in lieu of new canes from the crown. Removing soil and mulch from around the crown to expose it to the sun usually induces new cane growth. The vase, or open-center, system of pruning induces cane development from the crown by permitting more direct sunlight to the center of the plant.

Canes terminate in a flower bud. After the flowers fade, one or two new shoots develop from the lateral buds in the axils of the top leaves with five to seven leaflets. Remove the flower stalk at the second or third five-leaf leaflet from the flower head (fig. 6). If the flower stalks are not removed from hybrid teas, multiple flower heads develop producing weak, short-stemmed rose buds. The old flowering heads should be removed to permit the new laterals to develop into healthy flowering wood. Do not delay with this kind of pruning. When flower clusters are not removed for a year or two, thinning becomes a major job.

In pruning roses, examine the sucker growth. If suckers come from below the bud union, remove them entirely as soon as they develop.

Floribunda roses are pruned differently than hybrid

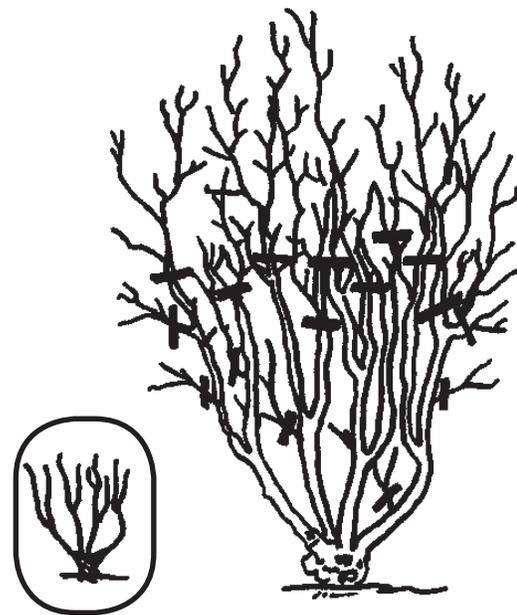


Figure 7. Floribundas are usually not pruned as severely as hybrid teas. Even so, be sure to remove any dead, broken, damaged, or blotched branches back to where the pith, or center of the cane, is white and healthy looking. Next, remove weak, spindly canes, canes growing toward the center of the bush, the weaker of two canes that crisscross, canes that grow out, then up, and suckers, if any. Finally, trim back all remaining canes.

teas. The plants vary in height from 12 inches to 5 or 6 feet. The bushes are usually more compact and are grown for mass effect of flowers rather than individual flowers. The canes are smaller and less should be removed in the pruning process (fig. 7). Cane is pruned to a lateral branch.

Floribundas are more effective when planted in groups of a single variety. Prune each plant in a bed or hedge of one variety to approximately the same size and height. Thin the tops, remove old flower heads, and cut back just enough to encourage vigorous development of new shoots. Floribundas produce many flowers. After flowering, remove spent flowers to permit new ones to develop throughout the season. In time, remove the older canes so that new ones can take their place. If there is no need to control the height, little pruning may be necessary for these roses beyond the removal of old flower heads.

Climbing roses are pruned to develop new, vigorous canes and to adjust their size to the trellis, pergola, fence, or place where they are being grown. These plants blossom on 1 and 2-year-old wood. Prune climbers in late spring, after the first heavy crop of blooms have faded. Excessive pruning removes flower buds. Plants which have not been pruned for several years are usually thick and bushy with new and old and perhaps even dead canes. Prune these while the canes are dormant, when it is easier to see the canes and laterals that should be removed. Prune sparingly, leaving some of the strongest canes that may need to be removed after the first spring flowering. Immediately following the first heavy spring bloom, remove older, gray-colored canes and save the healthy green ones. Laterals can be cut back to 8 or 10 buds. Train the long canes by arching or tying them in a horizontal position. This makes every bud send up a flowering branch.

Never prune the hybrid perpetuals, such as Paul's Scarlet, Blaze, Silver Moon and American Pillar, before they bloom, and even after they bloom do not prune them severely.

Large bushes, such as Harrison's Yellow, the rugosas, Austrian Copper, and other species grown for large bushy effects, need little or no pruning. Remove any dead wood. If the plants become thick or too large for the allotted space, cut out the excess growth to reduce the plant size. If the canes are branched, they may be cut back to laterals. Never remove just the tips of canes.

Insect Pests

Aphids or Plant Lice

Two kinds of aphids are common on roses. One is large, green or pink, and attacks the growing tips and buds. Flower petals of infested buds are puckered, small and off-color, or the entire bud may turn brown without opening. The other aphid is smaller, green, and sucks the juices from the underside of the leaves and produces honeydew. A strong stream of cold water will wash aphids off the plants.

Red Spider Mite

This pest, also called the two-spotted spider mite, may damage rose foliage severely. Spider mites are very small and often cannot be seen without the aid of a magnifying glass. A yellow mottled pattern of the leaves may suggest spider mite injury. Frequent spraying of the plants with a strong stream of water will usually hold spider mites within satisfactory levels. However, chemicals may be needed to control heavy infestations.

Borers, such as the flat-headed apple tree borer, may infest rose bushes that are not vigorous. The bush may start to die back in spite of good soil, fertilizing, and watering. These pests are seldom serious when the bushes have been properly managed.

Thrips often feed on unfolding buds, resulting in "blasting" of the flower. The outer petals of infested buds turn brown and die, preventing the flowers from expanding. Infestations appear to be heavier on partially shaded plants than those in full sun. Control is difficult, but chemicals can help.

Be sure to use a formulation of any chemical that is labeled for roses and for the insect you are trying to kill. Read the entire label carefully and follow directions.

Diseases

Powdery mildew is perhaps the most prevalent disease on roses in New Mexico. Most climbing roses are especially susceptible. The disease attacks the young leaves, buds, and shoots of susceptible varieties, usually distorting their growth. Powdery mildew requires repeated spraying with fungicides throughout the growing season. It appears to be most troublesome during the summer and fall when days are hot and

nights are cool. Do not crowd plants, and avoid planting them in damp, shady locations. Many resistant varieties are available.

Canker, cane blight and dieback kill many roses annually throughout the southwest. Several organisms are responsible for this disease. Dead areas appear on canes injured by winter freezes, around wounds made in pruning, or where flowers have been removed. Vigorously growing plants are less susceptible than less vigorous ones.

Crown gall is characterized by the appearance of rough galls or swellings on the roots or on the crown of the rose bush. It often appears where tissues have been injured in cultivating. This same bacterial disease attacks bush berries, peaches, grapes, pecans, apples, and many other horticultural plants.

Inspect planting stock very carefully. Reject plants with suspicious bumps or swellings near the crown or graft union. Soil in which diseased plants have grown should be left idle for at least 3 years before replanting. If a long waiting period is not practical, discard diseased plants with the surrounding soil and replace with clean soil before replanting. This practice will help eliminate the disease organisms from the soil.

The previous version of this publication was authored by M. Douglas Bryant, former Extension horticulturist.

