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Richard Howard Hanchey

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Roses For The Yard

By

R. H. HANCHEY and W. D. KIMBROUGH

The Peace Variety

LOUISIANA STATE UNIVERSITY

and

AGRICULTURAL AND MECHANICAL COLLEGE

AGRICULTURAL EXPERIMENT STATION

W. G. Taggart, Director
INTRODUCTION

There is no doubt that the rose is the most universally popular flower grown. There are many other beautiful flowers, such as the camellia, gladiolus, iris, lily, narcissus and several other ornamental plants, that have many followers, but none is a real rival of the rose. The fact that some kind of rose can be grown in most localities where any plant will thrive accounts for much of its widespread popularity. Its wide range of types and colors, pleasing fragrance and unsurpassed beauty as a cut flower usually give it first consideration as a flower to plant in home gardens. Here in the deep South it is possible to have roses in bloom in the open for a period of eight to nine months in a year. While the rose is generally grown as a cut flower, some types may be worked into a planned landscape. As the rose plant is a perennial, a rose bed properly cared for should be satisfactory for a number of years.

There is very little experimental information concerning the culture of roses in this area, but it is very much needed and desired. In general it has been believed that only a few varieties of roses could be successfully grown by the average person in south Louisiana. Many more people would grow roses if they could expect to grow satisfactorily some of the newer more prized varieties. Experimental work was started with roses at the Louisiana Agricultural Experiment Station in January, 1949. Many years must often pass before sufficient data for making recommendations can be accumulated. Because of the great demand for information concerning rose culture, it is the purpose of this bulletin to give helpful information to those interested in growing roses under Louisiana conditions. The information is based on observations and experimental work done here and elsewhere.

ROSE CLASSIFICATION

The average rose grower considers all roses as being either bush or climbing types. There are, however, several classes of roses, some being satisfactory and some unsatisfactory as a group, but having individual varieties of special merit within the group. Bush roses are generally divided into the following classes: Hybrid Teas,
Hybrid perpetals, Teas, Polyanthas, Hybrid Polyanthas (Floribundas), Tree or Standard, and Miniature.

Hybrid Teas

Varieties of this class are of relatively recent origin and are the result of crosses between tea roses and hybrid perpetuals. This group is of far more importance than the other groups, as it contains most of the varieties commonly grown now. Practically all greenhouse roses sold by florists are of the hybrid tea group. They are classified as continuous bloomers, which means they bloom in cycles until stopped by unfavorable environmental conditions such as cold weather. The growth habits of the different varieties in this group vary, but generally speaking they range in height from two to six feet, with most being intermediate. They vary in form from the sprawling type of growth made by varieties like Crimson Glory to the upright growth of varieties like Texas Centennial. The foliage varies in color from the light green of Talisman to the dark green of Peace. Flower form may vary from the delicate single blossom of Dainty Bess to the full double of Briarcliff. Many of the hybrid teas are fragrant; others are not. Hybrid teas as a group are recurrent bloomers and are fairly vigorous growers.

Hybrid Perpetuals

The word perpetual in this case is very misleading. The hybrid perpetuals as a group are not perpetual bloomers. During the time when they were most popular they came nearer to being perpetual bloomers than other types grown at that time. As a group they are of little importance today. American Beauty and Ulrich Brunner are varieties of this group. The variety Frau Karl Druschki is a hybrid perpetual and probably the best white variety for growing in Louisiana. The group as a whole grows vigorously and makes a stiff, upright type of growth and has dull green leaves and very double and somewhat flat blooms. They may or may not be fragrant.

Poylanthas

Plants of this group seldom grow over two feet in height. The flowers are small in size and borne in clusters. Fragrance is lacking in many varieties. Cecile Brunner (Sweetheart rose) and George Elger are examples of this group. This group is gradually being replaced by the hybrid polyanthas or floribundas.

Hybrid Polyanthas (Floribundas)

This class probably ranks second to the hybrid teas in impor-
distance at the present time. As a group they are similar to the true polyantha but individual plants attain greater size. The blooms are borne in clusters but are generally larger than those of the polyantha, and some floribunda varieties have less flowers per cluster. This is an important group of roses but cannot compare with the hybrid teas as a source of cut flowers or for exhibition purposes.

Tree or Standard

Very few tree roses are grown in Louisiana. Many people dislike the constant pruning that is necessary to keep the top of a tree rose in a pleasing shape and the staking of plants which is essential for their support. A tree or standard rose can be any variety of bush rose. Hybrid teas and floribundas are probably used most. A tree rose is produced by selecting a straight-stemmed cane and placing one or two buds of the desired variety in it two to six feet from the ground depending on the height desired for the plant. Tree roses of practically all of the hybrid teas can be bought. The cost of propagation makes them more expensive than the same variety grown as a bush rose.

Miniatures

This class of roses is characterized by small flowers and small plants. The plants range in height from six to twelve inches and the blooms are less than an inch in size. As a group they are not too popular in Louisiana. Pixie, Midget and Tom Thumb are varieties of this class.

Climbing Hybrid Teas

Bud mutations frequently occur on bush hybrid teas. One bud may make exceptional growth and that particular cane become much taller than the remaining canes. If this climbing type of growth is due to a bud mutation, this variation from the normal can be propagated asexually and the climbing characteristic perpetuated.

Generally speaking, climbing hybrid teas do not have as many blooming periods as the bush forms, but individual plants may produce many more blooms at one time. The additional foliage present on climbers and its distance from the ground make disease control more difficult than on bush types. Climbing roses could be of more importance in Louisiana than the number now planted indicates.

Tea

The tea group is characterized by small flowers, small leaves and growth that is usually not vigorous. They are normally recur-
rent bloomers until low temperatures induce dormancy. This group is of very little importance at the present time. Lady Hillingdon is one of the few varieties of this type still grown to some extent in Louisiana.

**VARIETIES**

One of the most important considerations when planning to plant a rose garden is the selection of proper varieties. There are hundreds of rose varieties, and the grower usually has to limit selections to a relatively few of them. Success with roses will depend to a great extent on the selection of varieties adapted to the area where they are to be grown. Varieties selected only from pictures in a catalogue can easily lead to disappointment. Varieties satisfactory under some conditions will not do under others. People may also differ as to what satisfies them when it comes to rose production. Individual preference in regard to color and shape should be taken into consideration. What may be considered excellent by one may be thought to be inferior by another. In the variety test at L.S.U. there are about 70 selected varieties. Of course there are many good varieties that have not been tried, but promising varieties will be added each year. New rose varieties are being developed by rose breeders. Most of the new varieties are being patented, which means they should not be propagated without authorization.

When the ornamental program at the Louisiana Agricultural Experiment Station was started, it was known that many varieties could be grown in the northern part of the state, but there was considerable doubt about the probable success with roses, except for a few varieties, in the southern part of the state. Two or three years should be sufficient time to indicate whether varieties may be successfully grown in an area. The number of years that bushes may live and grow successfully will take more time to determine.

Most yard gardeners are not interested in planting a large number of varieties. It is believed that it is better to plant three to six plants each of a few varieties than to set out one plant each of more varieties. In that way bouquets of a variety can be cut at one time.

There are four varieties of roses that have been recommended for planting in south Louisiana for several years. These varieties are Red and Pink Radiance, Etoile de Holland and Editor McFarland. After growing some of the newer varieties some people do not believe that Radiance roses should be recommended. It is believed, however, that in south Louisiana the two Radiance roses should still head the list of varieties to plant, for in this area they
Experimental Roses at L.S.U.

are the most vigorous growers and most dependable bloomers. They cannot compete with good specimens of many other varieties, but when other varieties are not available, the Radiance roses are very satisfactory. The shell pink Radiance, Mrs. Charles Bell, is fairly good but not in the class with the two Radiance roses recommended. Varieties are sometimes sold as White Radiance but there is no white rose in the class of the Red or Pink Radiance. The Etoile de Holland is a popular, old, red variety. It is a semi-double rose. The stems are sometimes not strong enough to hold the blooms up as they should. Editor McFarland is a very good pink rose. Its blooms are borne in clusters and require a lot of disbudding to produce specimen flowers. There is another variety, Charles K. Douglas, that is quite similar to Etoile de Holland but may grow a little more vigorously. A poor, full-double rose is sometimes sold as Charles K. Douglas.

The following patented roses are recommended as worthy of trial:

Peace—It is the outstanding variety at the present time and belongs in a class by itself. The color is somewhat variable but may
be called a dream with more or less pink tincting. Cooler temperatures seem to make for more intense color. When fully opened, it is a very large rose but in spite of its size is very beautiful. It does not have as many blooms per bush as some varieties, but it should not be called a shy bloomer. It makes a vigorous growth, and the stems are relatively large in diameter.

**Charlotte Armstrong**—Rose color. This variety makes very long buds that are especially beautiful. It is a semi-double type. The bush makes a vigorous but not compact growth. This variety has been found to be generally satisfactory.

**Countess Vandal**—Salmon pink. A general favorite. It is especially beautiful in the bud stage. The plant does not make a very vigorous growth in south Louisiana, but it produces many beautiful blooms with few side buds.

**Crimson Glory**—Red. Still the most popular red rose. Produces large flowers in profusion but usually on fairly short stems. The plants tend to be low and spreading.

**Nocturne**—One of the most beautiful red roses. Long, pointed buds are produced. Plants make a vigorous, upright growth. The color of this rose tends to fade to some extent during very hot weather.

**Mirandy**—Dark red. A very popular variety. Plants make a vigorous growth. The color does not fade badly in hot weather. Buds are not pointed but tend to be stubbed off to some extent.

**Eclipse**—Yellow. The most popular yellow at the present time. It has bloomed profusely for two years in the variety test here. Best blooms were produced in spring and fall, but many good blooms were produced during the summer. The blooms tend to fade in hot weather. Blooms are only medium in size but are especially beautiful in the bud stage. Plants make only a fairly vigorous growth.

**Lowell Thomas**—Yellow. A relatively new variety that is gaining in popularity. It is a darker yellow than Eclipse but does not bloom as profusely.

**Tallyho**—Pink. A new pink that seems very promising. Plants make a good growth.

**Texas Centennial**—Flame and carmine. This is a sport of the President Hoover variety and makes a similar type of growth. It grows vigorously but rather straggly. Blooms are produced on long stems.

**Picture**—Pink. Produces medium small flowers in profusion. Plants make very good growth. It is a very satisfactory variety.
The Chief—Bicolor. This variety produces very large striking blooms on long stems. The bush itself tends to be low and spreading.

The following varieties have been grown for only one year but seem promising:

Debonair—cream yellow  
Christopher Stone—red
Mme. Chiang Kai-shek—light cream  
Girona—bicolor
Bravo—red  
Taffeta—bicolor
Brandywine—cream  
Sutter’s Gold—bicolor

No white variety will be suggested for planting but Caledonia or K. A. Victoria may be as good as any. Snowbird has done very well for one year. It produces a medium sized white bloom. Frau Karl Druschki, often called White American Beauty, is a hybrid perpetual that can be recommended in its class. The plants make a much more vigorous growth than hybrid tea varieties. Blooms are produced profusely in the spring only, but some blooms may be obtained in the fall.

The following floribunda varieties are considered worthy of trial:

Pinocchio  
Fashion
Goldilocks  
Floradora

GRADE OF PLANTS TO BUY

Rose bushes are usually sold in three grades—No. 1, No. 1½ and No. 2. The No. 1 grade is the largest size and is the one recommended for planting. The size of No. 1 bushes will vary to some extent with the vigor of the variety. The more vigorous ones should have at least three canes. The best two-year-old, field-grown plants should be obtained for planting. They should be free of crown gall which is often found on rose bushes, though such plants should not be passed for sale by inspectors. Quality of rose bushes should not be sacrificed for bargain prices. If it is possible, plants that have gone into a normal dormancy should be obtained. Orders for plants should be placed early in the season to help insure obtaining the varieties desired. The time delivery is wanted should be specified when the order is placed. When the plants are received, they should be unpacked immediately and either planted or heeled in until they can be set out.

LOCATION

Good drainage is imperative if roses are to be grown successfully. This does not merely mean surface run off of water, but that
water will percolate through the soil so that it will not stay waterlogged. If the soil is poorly drained because of an impervious layer near the surface, it is not suitable for planting roses. Under such conditions merely digging a pit and putting gravel in the bottom will do no good unless the depth is sufficient to go through the portion of soil preventing good drainage and allow the water to go through it. When drainage is not too good, raising the level of the rose bed should be beneficial. Even where drainage is thought to be good, raising the level of the rose bed may often be beneficial.

A location exposed to full sun is best for the rose garden. If such a site is not available, place the rose garden where it will get as much sunshine as possible. During the hottest part of the summer a little shade might be beneficial so far as color of blooms is concerned, but in the spring and fall it will not. Too much sun causes the color to fade.

Roses are grown almost exclusively for cut flowers, and the rose garden is usually not too pretty from the landscape standpoint. This means that, where choice can be exercised, the rose garden should not be located in a prominent place, such as the front yard.

SOIL

Roses are grown successfully on a wide range of soil types. In the average yard the grower does not have much choice. If a choice can be made, a loam soil with a porous clay subsoil is probably ideal. A mildly acid soil is best for roses, with a pH range of 6.0 to 6.5 probably being best.

SPACING

Because of lack of space or the desire to plant too many bushes, plants are often set out much too close together. If good growth is expected, plants must have ample space in which to grow. Three feet between plants in the row is a good spacing to use, and the distance between rows should be four to five feet. It is believed that one of the reasons why roses have grown so well in the experimental plots is that they have not been crowded. It is best for rose plantings to be in double rows rather than in three or more, so that they are more accessible for cutting blooms, dusting or spraying, pruning, etc.

PLANTING

The best time to set out roses may vary from year to year though it should be done in the dormant season. General recom-
mendations must of necessity be a sort of compromise. In the South
root growth often takes place though the above ground parts may
be dormant. Plants should be set out in time for the root system to
become somewhat established before active growth starts in the
spring. If set out early and there is a period of mild weather,
growth may start, and then, if a severe cold comes, plants may be
damaged or killed. This happened in February, 1951. If plants are
set late in the dormant season, poor growth usually occurs at least
for a time.

January is probably the best time to plant roses in south Loui-
siana and February in north Louisiana. Most rose plants are sold
bare rooted and should be dormant when they are set out. The rose
bush apparently does not have a true rest period, and after the
bushes are set out, they will grow when conditions are favorable
for growth. If plants are set out in Louisiana in October or Novem-
ber, they are sure to start growth before low temperatures retard
such growth. Such young growth may then be damaged by cold, or
inferior blooms produced out of season may use reserve food in the
plant to such an extent that growth will not be normal when spring
comes. This happened to plants set out in January of 1950 at Baton
Rouge because of a more open winter than is usual for this area.

Plants should be set out when the soil will work well. Do not
plant when the soil is wet and soggy because under such conditions
it is impossible to do a good job of planting. Preparation for plant-
ing roses should be begun well ahead of time. Even a year ahead is
not too long. The bed should be raised if necessary and a consider-
able amount of organic matter worked into the soil. This may be
a green-manure crop, leaves or manure of some kind. In any case
the organic matter should be well decomposed before time to plant
the bushes. Holes should be dug large enough to allow the roots to
be spread in a normal position. A mound built in the hole is often
better than trying to push soil under the roots. The plant should
be set at a depth that allows the crown of the plant to be at or
just beneath the surface after the soil has settled. If the plant is
set too high, it will likely be damaged by wind or blown over. After
the roots have been properly spread in the hole, surface soil alone
or with some leaf mold should be added first as it will be in con-
tact with the roots. As more soil is added, it should be firmed well
around the roots. When the hole is nearly filled, the plant should be
watered well. After the water settles, finish filling the hole with
soil that is not muddy. It may be mounded slightly around the plant
temporarily, but no further packing is necessary.

Experienced growers might use a little commercial fertilizer
at planting time, but it would probably be better to wait and fer-
Fertilizers should be applied in the spring. Many plants are damaged or killed by the use of too much fertilizer at planting time.

No pruning should be necessary at time of planting, but it may be done if essential.

**FERTILIZER**

There are a number of elements that are essential for plant growth. Most of these elements are obtained from the soil, some in very small quantities. If all of the essential elements that come from the soil are present, are in a form available to the plant and in sufficient quantity to meet the needs of the plant, no fertilizer need be added. Usually soils in the South are deficient in one or more of these elements. It is to supply these deficiencies that fertilizers are added. Information concerning the fertilizer needs of roses is not too conclusive. Work at Cornell University indicates that the nitrate level in the soil solution should be from 25 to 100 p.p.m. This means that it is possible to have too much as well as too little available nitrogen present. A fertilizer experiment was started with roses at the Louisiana Agricultural Experiment Station in February, 1949. Plots range from no fertilizer to those receiving heavy application of complete fertilizer and chicken manure and cow manure with and without the addition of complete fertilizer. After two years of growth there was little difference in growth of plants due to fertilizer treatment. Plants on all plots made excellent growth. The heaviest applications of commercial fertilizer used have done no apparent damage. Late in the season of the second year the plants on plots that had received manure were a little more vigorous than those on plots that received no manure. There is every reason to believe that response to the application of commercial fertilizer will be obtained as the years pass. The plots that received no fertilizer were beginning to show its lack in the spring of 1951.

The best time to apply fertilizer is in late winter. This would be about the middle of February in south Louisiana. The fertilizer should be applied broadcast in an area extending about 18 inches in every direction from the crown of the plant. The fertilizer should be well distributed over the area and not too much left in one place. It is best to work the fertilizer into the soil around the plants. Only a rather general suggestion can be given as to the amount to apply, and that is from \(\frac{1}{8}\) to \(\frac{1}{4}\) pound of 8-8-8 fertilizer per plant or its equivalent. The rate of application of a complete fertilizer is usually based on the nitrogen content. That would mean that half as much fertilizer that contains 8 per cent N should be used as one containing only 4 per cent N. In good soil one application of complete fer-
Fertilizer should be sufficient. An application of nitrate of soda or its equivalent at the rate of one to two ounces per plant in August may be beneficial for the fall blooms. In very sandy soils additional nitrogen may be beneficial, but it should not be applied late enough to stimulate growth that might be subject to winter injury. Fertilizer should be used with caution for it may be that more rose bushes have been damaged by the use of excessive amounts than from its lack. It is believed, however, that in the South the use of some fertilizer will, under most conditions, be beneficial.

Organic matter in the form of manure will be found to be generally beneficial to rose plants. Well decomposed barnyard manure should be broadcast uniformly over the rose bed at the rate of 10 to 20 tons per acre. It should be remembered that manure often contains weed and grass seeds that are not desirable.

**CULTIVATION**

The main reasons for cultivation are to control weeds and grass and to prevent the soil from becoming too compact. Aside from being unsightly, weeds and grass compete with the rose plants for water and essential elements that are obtained from the soil. If the soil becomes too compact the plant may suffer because of insufficient oxygen to supply the needs of the roots. The main cultivation should be given right after the winter pruning and just prior to the application of fertilizer. Only light cultivation should be given the rest of the year, so as not to damage the roots of the rose plants unnecessarily.

**ROSE PROPAGATION**

**Cuttings**

Most of the common varieties of roses can be propagated by cuttings. A rose propagated from a cutting is own-rooted. It has developed roots from its own tissues.

Information on the longevity of the newer and many of the older varieties of hybrid teas on their "own roots" is not available. Some of the older hybrid tea varieties do well on their own roots. In Baton Rouge there are a few Pink and Red Radiance plants eighteen years of age that were propagated from cuttings that flower regularly. It is quite possible that many varieties will perform satisfactorily on their own roots. It takes from two to four years to produce a desirable plant from a cutting and apparently many varieties do not do well when own-rooted. Experiments are being set up in the ornamental research program at the Louisiana Agricultural Experiment Station to test own-rooted roses versus
budded roses and to get information on the best stocks to use for budding roses to be grown under Louisiana conditions.

Cuttings can be made from roses during the growing season or during the dormant season. If cuttings are taken during the growing season, they are semi-hardwood cuttings and can be made from a stem just before blooming, at the time of bloom, or just after blooming. Semi-hardwood cuttings root best if given special attention. Fair results can be expected if cuttings are treated as follows: Use a cutting box with six-inch sides that has holes in the bottom for drainage. Cover the holes with an inch of gravel or broken pottery. Use a mixture of $\frac{1}{2}$ sand plus $\frac{1}{2}$ vermiculite by volume or sand alone as a rooting medium. A mixture of $\frac{1}{2}$ peat and $\frac{1}{2}$ sand is also satisfactory. Cover the cutting box with unbleached sheeting so that the sheeting will be around 24 to 30 inches above the sides of the cutting box. Place the cutting box in a shaded place and water down well. The cuttings should be 5 to 7 inches in length and the basal cut should be made just below a bud. The upper leaves should be left on the cutting. Dip the basal end of the cutting in one of the commercial root-inducing materials. Those that have the weaker concentrations should be used and not the ones sold to be used on plants that are hard to root. Then place the cutting in the cutting bed, leaving 2 to 3 inches of the cutting exposed above the rooting medium. Keep the rooting medium moist, never allowing it to dry out.

Hardwood cuttings are generally taken during December, January and February after the plants are defoliated. Cuttings 8 to 10 inches in length about the size or slightly larger than a lead pencil are used. These should be placed about four inches apart in well prepared and well drained rows. Root stimulants are probably of no value on hardwood cuttings. Hardwood cuttings should be placed deep in the soil with only two buds exposed. This is an excellent method for obtaining plants to be used as an understock for budding. During most seasons a covering or other protection is not necessary for hardwood cuttings in Louisiana.

**Budding**

Practically all roses sold for outdoor growing have been budded. The T or shield method of budding is used. It is the same method that is used in propagating citrus and peaches. Multiflora, Ragged Robin, Odorata, Manetti, Dr. Huey and others are used as understock for budding. In budding, the understock furnishes the root system, and the bud or scion placed in it forms the top of the plant. Buds on the lower part of the cuttings to be used as stocks should be removed to prevent growth from the stock after propagation.
When the understock attains the size of one-fourth to six-sixteenths of an inch in diameter it is large enough to bud. Budding can be done at any time the bark is slipping. The technique involved in budding roses is simple. A T cut about an inch in length is made through the bark as low as possible on the understock. A bud that has been cut in a shield shape is then inserted into the T cut. The bud should come from wood that is not succulent or that is not too hard. The cut on individual buds should start one-half inch below the bud and stop one-half inch above it. A portion of the leaf petiole can be left on the bud to aid in placing the bud in the T cut slit. The bud is inserted into the slit at the top of the T after the sides of the lower portion of the T have been peeled open. After proper placement of the bud the complete area below and above the bud should be wrapped with rubber budding strips, raffia or cotton twine. The bud itself should not be covered with the wrapping material. If the bud is green two weeks after budding, the chances are it has “taken.” If twine or raffia was used in wrapping, it should be removed at this time. If rubber strips were used, they will rot and not girdle the bud.

If the budding operation is performed in the spring, the understock can be cut off just above the bud as soon as it has taken. If the budding is done in late summer, it is better to wait until the following spring to remove the part of the understock above the bud. Late summer or fall removal might force the bud into growth that would be injured by winter temperature.

PRUNING

Bush Roses

The recommended time for pruning roses in Louisiana is in February. In general the later in the season pruning is done, the later will be the first crop of blooms. As soon after pruning as weather conditions permit, new growth will start on the plants, and it may be damaged by severe cold following growth. That is the risk of pruning in December or January. The grower will have to use his own judgment as to how much chance he wants to take to get very early blooms. If pruning is delayed too long, growth may be reduced considerably, at least early in the season. Good pruning shears that will make clean cuts should be used. The shape of the bush may be controlled to some extent by pruning to inside or outside buds, but varieties tend to have a characteristic shape which is not likely to be altered too much. Heavy gloves should be worn when pruning roses, and even then some thorns will be felt.

There is some variation of opinion as to the extent of the pruning that should be done. It should be remembered that in general
pruning has a dwarfing effect on the plant. Its apparent stimulatory effect is due to the reduction of growing points, thus giving more vigorous shoots but not as many. Pruning of rose bushes is done to regulate the size of the plants and to increase the length of the stems of blooms. It also removes dead and dying canes. Four to six healthy canes should be left per plant. Plants of vigorous varieties such as Radiance may be cut back at the winter pruning time to 12 to 15 inches from the ground. Most varieties should be cut back to from 18 to 20 inches from the ground if that much can be left. Weak growing plants should be pruned lightly.

In the South where vigorous growth has been made during the summer and bushes are tall and ragged looking, another general pruning should be made in August. This is done to get the bushes in condition for the fall bloom. It should not be as severe as the winter pruning. Canes should be cut back to about 24 to 30 inches from the ground and some thinning out done.

Climbing Roses

Pruning of climbing roses is a little different from pruning bush roses. Early blooms are produced on canes of the previous year’s growth so that, if it is reduced extensively, the number of blooms will be decreased considerably. Pruning after the first bloom period is generally recommended. The spring bloom of hybrid perpetual climbers is the main bloom though there may be a
Pruned plants in fertilizer plots.

Large plants at left unpruned, others pruned.
light bloom in the fall. Climbing roses should be pruned sufficiently
to keep them within the limits of the trellis or other support used.
Some so-called climbing roses are really pillar roses, but they
should be pruned similarly to real climbers.

Floribunda roses should be pruned according to vigor of
growth and their adaptation to the general landscape design.

**DISBUDDING**

If flowers of exhibition varieties are to be grown for show
purposes, they must be disbudded. This means that only one bud,
the terminal, should be allowed to bloom per stem. The side buds
should be removed when they are very small and can be easily
removed without leaving noticeable scars. In a large rose planting
proper disbudding will consume considerable time, but it greatly,
affects the quality of blooms produced. When quantity of blooms
is more desired than quality, disbudding need not be practiced so
carefully. Some varieties, such as Talisman, often have terminal
buds that tend to be defective, in which case disbudding should
not be done too thoroughly. There is a varietal difference in the
way blooms are produced. Some tend to have few, if any, side
buds, while others tend to bloom in clusters.

**CUTTING BLOOMS**

There is a common belief that rose blooms must be kept cut
if the bush is to continue blooming profusely. This is not neces-
sarily true. Blooms left on the bushes too long tend to be uns-
sightly, and, if seed are allowed to set, their development will be
a drain on the plant. Roses are grown primarily for cut flowers,
and that means that they will be cut. Roses can be cut to such an
extent that the bush will be injured. Very few, if any, should be
cut from the first crop of blooms after the plants are set out. When
plants make a new growth, it is at the expense of reserve food in
the plant. Leaves from the new growth if not removed replace this
food and add to it, thus helping to keep the plant in good condition
and allowing it to grow. If too many blooms with their accompany-
ing leaves are removed the plant will not grow as it should. Let the
plant get well established before cutting the blooms too freely.
Even established plants should not be cut severely enough, when
removing blooms, to injure the plant materially. Cutting blooms, if
properly done, is in reality a type of pruning and may prevent the
bushes from growing out of bounds. The bushes will likely thrive
better if some of the blooms are enjoyed on the bushes. It is be-
lieved that another reason the bushes in the test garden have
grown so well is that blooms were not cut when the plants were
small.
The best time of day to cut roses is now believed to be in the afternoon. This is because at that time there are more food reserves in the parts removed, and for that reason the flowers should keep better. It should be remembered, however, that during hot weather flowers open rapidly and what were buds in the morning may be full open blooms by late afternoon.

MULCHING

Proper mulching is beneficial to the rose garden. Materials such as pine straw, oak leaves, sawdust, bagasse, etc. may be used. The mulch should be no more than from 2 to 3 inches deep. It will help conserve moisture and tend to discourage weed and grass growth. When mulch materials decompose, they add organic matter to the soil. In the process of decomposition nitrogen is necessary, and mulching usually makes the addition of extra nitrogen beneficial.

IRRIGATION

While good drainage is absolutely essential for the successful growth of roses, the plants should not suffer for lack of water. This means that at certain times during the year watering will be beneficial. As with other plants, when roses are watered, the job should be done thoroughly; then wait about a week before it is repeated. Raised beds recommended for roses make the task of watering properly more difficult. If the water can be applied without wetting the leaves, leaf diseases will not spread as badly.

DISEASES AND INSECTS

Healthy, vigorous rose plants are necessary for the production of high quality flowers. To grow that type of rose plant, diseases and insects must either be prevented from attacking them or controlled when they appear. Badly diseased plants or those heavily infested with insects cannot make sufficient growth to produce good blooms, nor are they likely to live long.

The two most serious rose diseases that occur in Louisiana are blackspot and mildew. Blackspot normally is the most injurious. Failure to control it is one of the main reasons for lack of success with roses.

Blackspot is caused by a fungus. It usually occurs first on the leaves nearest the ground but will spread over the plant. The first noticeable symptoms are small purplish or dark gray spots on the leaves. These spots may increase in size and darkness of color. After a few days the area of the leaves surrounding the
spots becomes yellow. These spots contain thousands of spores that can be spread, especially under moist conditions, by wind, insects and other means. Severe infections, if not checked, may cause complete defoliation of certain rose varieties.

Mildew is normally most troublesome during the early spring months when the temperature is still relatively low, and generally disappears after hot weather begins. Buds, stems and leaves infected with the organism that causes mildew have a whitish coating that is easily seen. Leaves frequently become curled and twisted after infection. The rambler type roses are very susceptible to mildew injury.

Most of the commercial fungicide preparations sold for rose diseases will give effective control if applied properly. For best control it is essential that plants be sprayed or dusted with an effective fungicide before the disease organism attacks and that a protective covering be kept on the plants at all times. In general the spraying of plants will give better disease control than dusting, because the material used will stay on the plants longer and will not wash off as easily. Dusting is often more easily and quickly done than spraying, but it takes more material. The residue left on the foliage from spraying is objectionable. This is particularly true when fermate or one of the copper compounds is used. When a fungicidal spray is applied to plants in bloom, it should be kept off of the blooms as much as possible.

If the following directions are followed, very good control of blackspot and mildew should be obtained. After the rose plants are pruned in February, the pruned portions should be removed and burned. All leaves and other debris should be raked from the ground around the plants and burned. The pruned plants and the ground around them should then be sprayed with Bordeaux mixture or a similar copper compound. This should tend to prevent an early infection of disease organisms. When spring growth begins, the plants should be sprayed or dusted at intervals of one week with suitable fungicides. During periods of rainfall more frequent applications would likely be beneficial. It is important to have the spray or dust material on the plant before a rain and as soon after as possible. Tribasic copper sulphate used at the rate of three pounds to 50 gallons of water with a little soap powder or flakes used as a sticker has given good control of blackspot in the L.S.U. experimental plots. This is at the rate of one ounce to 1.04 gallons of water. Some foliage injury can be expected from the use of copper compounds during cold, wet periods. If Bordeaux mixture is used, the standard 4-4-50 mixture (4 pounds bluestone, 4 pounds of lime and 50 gallons of water) is satisfactory. Fermate
used at the rate of \( \frac{1}{2} \) to \( \frac{3}{4} \) pound to 50 gallons of water is effective against blackspot but not against mildew. Diathane Z-78 at the rate of \( \frac{3}{4} \) to 1 pound per 50 gallons of water with a little soap sticker should be satisfactory. Wettable sulphur may be used as a spray. Sulphur used as a dust is effective against rose diseases if kept on the foliage. A mixture made of about 88 per cent sulphur and 12 per cent copper is a more effective dust. It is probably best to get such a mixture already made than for the individual to try to mix it. During very hot weather there is likely to be some damage to foliage caused by sulphur. The addition of sulphur to soil will lower the pH of the soil. If added in sufficient quantity, the soil will become too acid for rose plants to grow well. The accumulation of sulphur used as a dust may cause harmful soil acidity. This means that sulphur as a dust should be applied in a good duster and not used in excessive amounts. Late in the afternoon is probably the best time to apply dust.

Crown gall is a bacterial disease that attacks the roots and crown of the rose and many other plants. It causes the formation of gall-like structures. If a plant has galls on the roots or crown, it should be destroyed rather than planted.

Chewing insects can be controlled best with market preparations of DDT, or by use of cryolite. It is impossible to prevent some damage to buds from some night flying insects. Thrips frequently prevent the opening of blooms on plants of certain rose varieties. This is especially true with buds that have a large number of petals. Unless controlled, thrips are nearly always present in rose flowers. The best control is to use DDT. Aphids or plant lice are very troublesome on the new growth of roses and can do considerable damage. They may cover the tips of growing shoots and buds. They are sucking insects and must be controlled by the use of a contact insecticide. Nicotine sulphate (Blackleaf 40) at the rate of 1\( \frac{1}{2} \) to 2 teaspoons per gallon of water to which a little soap is added should destroy aphids. The spray is most effective at high temperatures. Spray as often as aphids are found. Roenone, which is a constituent of derris and some other materials, is also effective against aphids. Contact insecticides must come into direct contact with the insects that are to be killed.

**IN CONCLUSION**

The experimental rose plots at L.S.U. have definitely shown that many varieties of roses can be successfully grown in south Louisiana. Some varieties have done better than others. Plants can not be judged by one period of bloom, but flower and growth over the whole season should be considered. Many people are still
likely to be disappointed with roses in their own yards because they may not be able to meet all the requirements necessary for excellent rose production or because some have been neglected. It isn't always easy to do everything that should be done or to do it at the right time. For emphasis the following points, important for best success with roses, are stated again though they have been discussed in this bulletin.

1. Be sure that the rose bed has good drainage.
2. Have exposure to full sun if possible.
3. Prepare the soil well in advance of planting.
4. Get the best plants obtainable.
5. Plant varieties that are adapted to the area.
6. Set the plants at proper time of year and when the soil is not muddy.
7. Let the plants become well established before cutting blooms.
8. Disbud when side buds are small.
9. Do not apply too much fertilizer.
10. Decomposed organic matter is beneficial.
11. Prune at proper times.
12. Irrigate thoroughly when necessary.
13. Control black spot and other diseases.
14. Control aphids, thrips and other insects.

The planting of roses should not be discouraged even though all qualifications can not be met. A rose garden that is only fair is far better than none at all.