
ROSES IN THE GARDEN AND LANDSCAPE: CULTURAL PRACTICES & WEED CONTROL

Integrated Pest Management for Home Gardeners and Landscape Professionals

Roses in the landscape grow within a system that includes other plants, environmental conditions, pests, and other organisms. Through careful selection of plant varieties and management of environmental conditions with proper cultural practices, beautiful roses can be grown with a minimum of pest problems. Initial placement of roses into a suitable site gives plants the best opportunity for growth with minimal maintenance. Once established, roses provided with appropriate fertilizer and irrigation are less susceptible to some pest problems. Sanitation efforts such as picking up fallen leaves and winter prunings can contribute to reducing disease and insect incidence in spring. Finally, weeds must be managed to reduce competition and provide an attractive landscape. For details on insect and mite pests and their management, see *Pest Notes: Roses in the Garden and Landscape—Insect and Mite Pests and Beneficials*. To find out more about diseases of roses and how to prevent them, see *Pest Notes: Roses in the Garden and Landscape—Diseases and Abiotic Disorders*. Both publications are listed in References.

CULTIVAR SELECTION

Roses have been cultivated in garden settings since antiquity, and Roman writings refer to use of rose flowers for decoration and fragrance. Perhaps the earliest specific use of roses as landscape plants in the United States occurred in the late 1800s and early 1900s. Hybrids of *Rosa rugosa* roses from China and Japan were extensively planted as hedges around farmsteads on the Great Plains. Although the flowers of *Rosa rugosa* cultivars are small, the ability of plants to survive, even

in temperatures of -30°F, made them a welcome and colorful addition to the landscape.

Modern roses may be classified based on lineage and flowering characteristics. Hybrid teas and grandifloras were developed primarily for their large, showy flowers. Because of their profuse bloom and disease resistance, the cluster-flowered floribundas and polyanthas are more suitable for landscape use than hybrid teas



and grandifloras. Selective hybridization with incorporation of floribunda parentage has resulted in the relatively recent development of landscape roses, also called shrub roses, which are cultivars selected specifically for use as flowering shrubs in the landscape. These varieties have enhanced disease and insect resistance and require less pruning than traditional garden varieties of roses. Planting and care are also easier because thorns are smaller and less numerous than found on traditional varieties. Because petals and spent flowers separate from the stems, deadheading (the removal of old flowers) is not required. In cold weather areas, the own-root propagation of landscape roses means plants can regenerate true-to-type even if killed to the ground by cold temperatures.

Landscape roses are available in three growth forms: upright plants, mound-

ing shrub roses, and ground covers:

- *Upright plants* grow as medium-to-large shrubs with uniform foliage and bloom. These varieties can be used as border plantings, screens, or for vertical accents in a landscape design. Multiple plantings can be maintained as an informal hedge. Varieties include 'Flutterbye,' 'Pink Meidiland,' 'Sevillana,' and 'Simplicity.'
- *Mounding shrub* roses are more rambling than upright varieties. Uses include borders and mass plantings. Varieties include 'Bonica,' 'Lady of the Dawn,' 'Lavender Dream,' 'Knock Out' and 'Scarlet Meidiland.'
- *Ground covers* are low-growing varieties that are useful as covers for sloping banks, borders for walkways, or cascades over walls. Some varieties reach 2 ½ feet in height. Varieties include 'Alba Meidiland,' 'Baby Blanket,' 'Carefree Delight,' 'Eyeopener,' 'The Fairy,' 'Flower Carpet,' 'Ralph's Creeper,' 'Red Ribbons,' 'Red Meidiland,' and 'Sea Foam.'

CULTURAL PRACTICES *Establishment*

Roses are often purchased in late winter or early spring as bare-root plants. To maintain plant health prior to sale, these plants should be held in the nursery under cool conditions with their roots kept moist. Packaged plants should also be kept cool because warm temperatures hasten loss of carbohydrate reserves and contribute to gradual desiccation of wood and the resulting difficulty in establishment. Establishment from bare-root stock becomes more difficult as day temperatures rise above 70°F in late spring. To increase the percentage of survival

when planting bare-root stock in May or June, mist the wood once or twice per day and place mulch around the base of the plant to increase humidity.

Roses may be planted throughout the summer from nursery containers. However, the current season's stock is to be preferred rather than container stock held over from the previous year. With the exception of miniatures and smaller cultivars, roses generally do not perform well when maintained in nursery pots for more than one season.

Planting sites may have full sun to partial shade; however, roses do best with 6 hours or more of direct sun.

Irrigation

Roses need to be irrigated in most locations in California. Drought stress leads to defoliation and sunburn of canes, and may contribute to spider mite problems. However, overwatering or poorly drained soils may lead to root disease and nutritional deficiencies. Frequency and duration of irrigation will depend on weather conditions and soil texture. Roses do best when 50% of available water is depleted between irrigations. Checking after irrigation to determine soil moisture status and rate of depletion is helpful in scheduling irrigation. Daily irrigation should not be necessary even in the desert areas of California. For example, in the Central Valley, rose plants in production fields are irrigated, at most, at 8-day intervals during the warmest months, and irrigation twice per week is usually satisfactory for roses in landscapes. Water may be supplied via overhead sprays, flood irrigation, or drip tubing. Irrigation with over-the-top delivery should take place in the morning so foliage dries during the day. Mulches help to decrease water loss from the soil through evaporation and may enhance growth of the root system.

Soil and Nutritional Requirements

Roses prefer well-drained soil with a pH near the neutral value of 7.0. Many California soils are still suitable despite a pH above 7.0, but the likelihood of micronutrient deficiencies becomes

greater as pH increases, especially for pH values above 7.5. Roses are not salt tolerant, so electrical conductivity (EC_e) values, which measure the level of salt ions in the soil, should be less than 2.0 dS/m. Soil test values suitable for roses are given in Table 1.

Nitrogen is the nutrient typically in shortest supply. Although nitrate (NO₃-N) levels may be lower than the suggested soil test value, this nutrient is easy to add so that a low soil supply of NO₃-N is usually not problematic. For young landscape plantings or home gardens, adding nitrogen at the rate of 1 pound actual nitrogen per 1,000 square feet twice per year, spring and fall, should provide an adequate amount of this nutrient. Slow release fertilizers may be used. For sandy soils and for soluble fertilizers, splitting the seasonal application into two parts one month apart is suggested. For mature plantings, adding nitrogen in spring only may be sufficient. Too much nitrogen may shift plants into vegetative growth at the expense of flowers.

Although tissue tests are not normally needed for roses in landscape settings, they may be used to provide information on the current nutritional status of the rose plant. Suggested nutrient levels are presented in Table 2.

Pruning

Pruning provides an opportunity to direct growth and invigorate rose plants. Pruning requirements vary among types of rose plants. Hybrid teas, grandifloras, and many floribundas benefit from annual pruning in which most top growth is removed leaving three to five canes in a vase-shaped configuration (Fig. 1). Landscape varieties may be hedged or left unpruned, although rejuvenation pruning or removal of older stems every two to three years will renew vigor in the planting. In most of California, pruning should be done in winter before buds swell, although it may be delayed where late spring frosts are common. A starting point in pruning is to remove diseased and damaged wood. Between one-third and two-thirds of healthy

wood may be removed through a combination of heading and thinning cuts, which should be within ¼ inch above outwardly growing lateral buds or branches (Fig. 2). Removal of more wood results in fewer but larger flowers with longer stems; less pruning preserves the size of plants and results in a greater number of smaller flowers. Pruning paint or other wound dressings are not necessary.

During the growing season, the rule-of-thumb for cutting blooms on first-year plants is to make the cut above the first outwardly facing five-leaflet leaf. On well-established plants, cut blooms somewhat lower to insure new canes can support the weight of the blooms. Removal of spent rose blossoms allows

Table 1. Suggested Soil pH, EC_e, and Nutrient Levels for Growing Roses.

Soil characteristics	Unit	Low	High
pH (acidity/alkalinity)	—	6.0	7.5
EC _e (electrical conductivity)	dS/m	0.5	2.0
NO ₃ -N (nitrate-N)	ppm	35	150
NH ₄ -N (ammoniacal-N)	ppm	0	20
P (phosphorus)	ppm	5	50
K (potassium)	ppm	50	300
Ca (calcium)	ppm	40	200
Mg (magnesium)	ppm	20	100
B (boron)	ppm	0.1	0.75
Fe (iron)	ppm	0.3	3.0
Mn (manganese)	ppm	0.2	3.0
Cu (copper)	ppm	0.001	0.5
Zn (zinc)	ppm	0.03	3.0
Mo (molybdenum)	ppm	0.01	0.10

Table 2. Suggested Values for Nutrient Levels in Rose Tissue.

Nutrient (unit)	Low	High
N (%)	3.0	5.0
P (%)	0.2	0.3
K (%)	2.0	3.0
Ca (%)	1.0	1.5
Mg (%)	0.25	0.35
Zn (ppm)	15	50
Mn (ppm)	30	250
Fe (ppm)	50	150
Cu (ppm)	5	15
B (ppm)	30	60

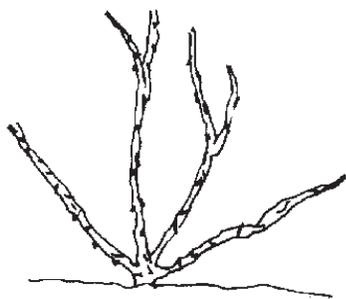


Figure 1. A vase-shaped configuration is the goal when pruning.

the plant to conserve energy and leads to further flower production. To deadhead a rose plant, use the same guidelines as those for cutting blooms. Landscape varieties do not need to be deadheaded.

WEED MANAGEMENT

Weeds are common in many landscape situations including around rose plantings. Mulching with two to four inches of organic material such as wood chips will help reduce annual weeds and make hand-weeding easier. Woven landscape fabrics placed under organic mulch will provide weed control for several years. In most home gardens, mulches supplemented with regular hand-weeding or roguing (digging out

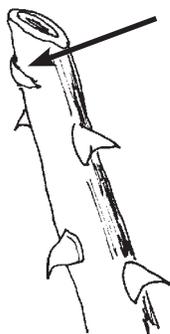


Figure 2. Pruning cuts should be made cleanly above a lateral bud (arrow) or branch.

the entire plant, roots and all) should provide satisfactory weed control. Mechanical cultivation devices such as hoes must be used with care because roses are shallow rooted.

In extensive plantings or professionally managed public or commercial land-

scapes, mulches and hand-weeding may be supplemented with herbicides. Some of these materials may be available only to professional applicators and not to home gardeners. The pre-emergent herbicides oryzalin (Surflan) and pendimethalin (Pendulum) can be used around roses before weeds emerge or after weeds are removed, but before others germinate. While these herbicides control primarily grasses, they also control broadleaf plants such as chickweed, fiddleneck, knotweed, lambsquarters, pigweed, prostrate spurge, oxalis (from seed), and purslane. These herbicides will not control established weeds. To control established grasses, the postemergent herbicides fluazifop-p-butyl (Fusilade), sethoxydim (Sethoxydim), and clethodim (Envoy) may be used when the grass plants are small, and when these herbicides are used according to label directions will not injure rose plants. Be sure to consult labels for permitted sites and rates.

Roses are sensitive to postemergent, broadleaf herbicides used in the landscape, such as 2,4-D, triclopyr, and dicamba. Use broadleaf herbicides with great care when rose plants are present in the landscape so as to not cause damage from drift. Roses are also very sensitive to glyphosate (Roundup and many other trade names), which can be absorbed through the green stems in addition to the leaves. Glyphosate damage may appear at bud break the following spring after a summer or fall application that contacts leaves or stems; symptoms include a proliferation of small, narrow shoots and leaves. For more information on weed control in the landscape, see *Pest Notes: Weed Management in Landscapes* listed in References.

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Pesticides are poisonous. Always read and carefully follow all precautions and safety recommendations given on the container label. Store all chemicals in the original labeled containers in a locked cabinet or shed, away from food or feeds, and out of the reach of children, unauthorized persons, pets, and livestock.

Pesticides applied in your home and landscape can move and contaminate creeks, rivers, and oceans. Confine chemicals to the property being treated. Avoid drift onto neighboring properties, especially gardens containing fruits or vegetables ready to be picked.

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