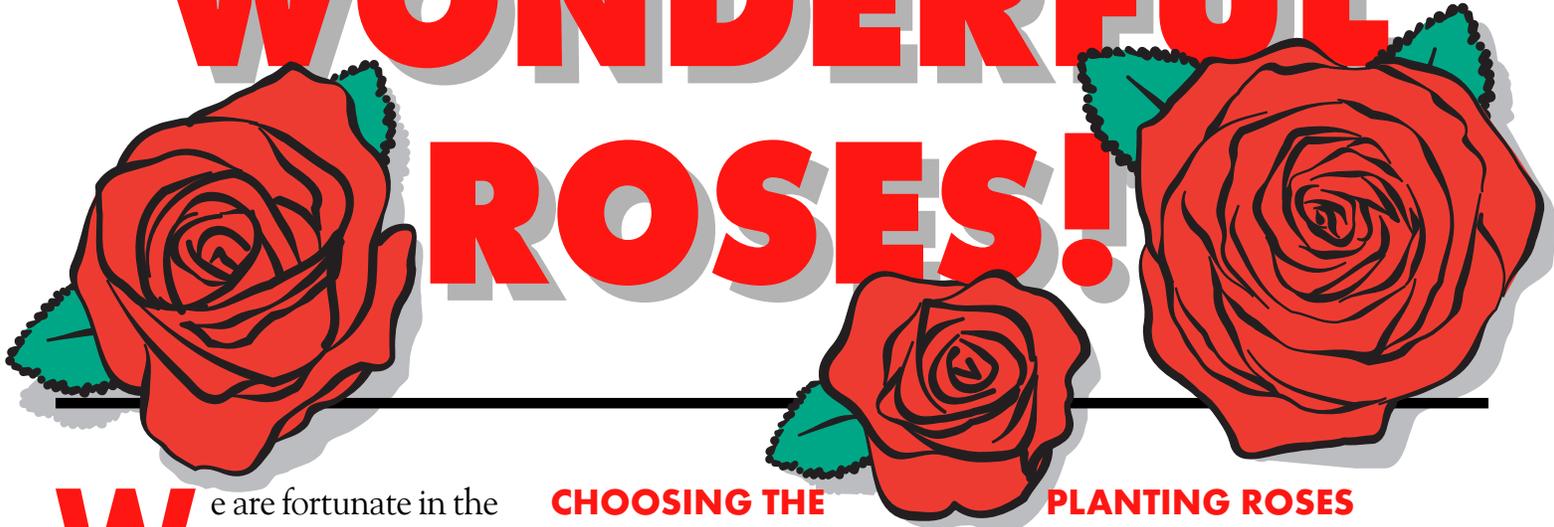


WONDERFUL ROSES!



We are fortunate in the Bay Area to have such a long blooming season for roses. Growing healthy roses that require minimal care is not difficult. By choosing appropriate rose varieties, planting roses properly, and carefully following recommended cultural practices, you can grow beautiful roses that are less susceptible to pests and diseases. These preventative strategies can keep plants healthy without the use of pesticides and fungicides that may contribute to local water quality problems. The following tips will help you to protect your family's health and the environment while growing strong, healthy roses with glorious blooms.

CHOOSING THE RIGHT ROSE

- Start with healthy plants. Look for glossy foliage and an evenly moist rootball. Avoid plants with spindly stems, discolored or spotted leaves, or roots that are coiled around the container.
- Choose rose varieties that are disease-resistant and suited to your particular climate. There are no disease-free roses, but some varieties will grow more successfully in cool, foggy coastal microclimates or in hot inland areas.
- Visit a local rose garden at various times during the growing season to see what particular varieties look like and to learn about different roses' growing habits and requirements.
- Ask local gardeners and rosarians for suggestions. Try to find people who are growing roses with minimal pesticides.
- Contact local rose societies, nurseries, and master gardeners for lists of roses they recommend for your area.

PLANTING ROSES

Before you plant, spend some time finding the best spot in the garden for your roses.

WHERE TO PLANT

- Roses need full sun, which means six hours of direct sunlight per day. Sunlight encourages blooms and discourages disease.
- Roses require good drainage. In the spot you've chosen for planting, dig a hole the size of a gallon jug and fill it with water. If the hole doesn't drain in one hour, you should choose another spot, or make a raised bed for planting the roses.
- Give your roses plenty of room to grow so that they won't be crowded. Get an idea of the mature size of the rose when you buy it. Good air circulation is crucial in preventing the spread of diseases.
- Consider planting roses in mixed beds rather than traditional rose beds. This diversity of plants will attract beneficial insects and cut down on the spread of rose pests and diseases.



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WHEN TO PLANT

- Roses purchased in pots can be planted any time of year, but the best selection is available in nurseries from December to May. Potted roses can be planted immediately or they can remain in the pot for several months.
- Bare root roses (plants with no soil on their roots) are available December through February. They should be planted right after you buy them so that they don't dry out.

HOW TO PLANT

Planting in Containers

For container planting, choose roses that don't grow more than 4 feet tall. Choose a container at least 20" deep and wide. Use a premium commercial potting soil, such as Whitney Farms or Fox Farms. You may also want to add organic matter such as compost or high-quality rose planting mix. Water well after planting.

Planting in the Ground

- Dig a hole at least 2 feet square and 18" deep for each plant to leave room for adding soil amendments. If you have a small hole with rich soil, the roots may not move out into the surrounding soil and can become stunted. Fill the hole with a 50/50 mix of soil from the hole and compost or Rose Planting Mix.
- Place the rose in the hole so that the bud union (the knobby part of the trunk where the rose was grafted) is 2" to 3" above the soil. Roses grown on their own roots should be planted at the same level as they were in their nursery container.
- When planting bare root roses, make a mound of prepared soil in the bottom of the hole and spread the roots around and over the mound. Fill in the hole and tamp down the soil.
- Water thoroughly and mulch.

CARING FOR YOUR ROSES

WATERING

The amount of water your roses will need depends on the climate and the weather, the type of soil, and the type of rose. In areas with summer fog, roses will need less water than in areas with summer heat. You will have to water more frequently if you have sandy soil than if you have clay soil. It is important to give your roses the right amount of water. Waterlogged soil will kill roses, and drought conditions can stress plants, making them more susceptible to pests and diseases.

- Keep the soil moist. Use your finger to test the soil and check roses in pots at least twice a week.
- Watering with soaker hoses or a drip irrigation system delivers water to the soil without wetting the foliage. This can help prevent fungal diseases. If you water with a sprinkler, water early in the day so the foliage

TIPS FROM BAY AREA GARDENERS

Except in the hottest microclimates, some rose growers find that varieties with 30 or fewer petals do best in Northern California.

Mix-your-own organic fertilizer

2 parts bone meal

1 part hoof and horn meal

1 part bat guano

1 part cottonseed meal or alfalfa meal

1 part kelp meal or fish meal

1 part epsom salts

Feed about 1 cup per plant at pruning time and every two months during the growing season. Work into the soil with a cultivator and water thoroughly.

will dry out before evening.

- If you use granular fertilizer, water it in with a hose. Drip systems don't provide enough water to dissolve the granules.

FERTILIZING

Roses prefer a slightly acidic soil (pH 6.2 to 6.8) that is not high in salt. Fertilizers such as alfalfa meal, cottonseed meal, blood meal, and bat guano can acidify the soil. Animal manures are generally high in salts.

- Use slow-release fertilizers such as compost or an encapsulated material such as Osmocote®. These fertilizers release nutrients slowly over a long period, preventing spurts of succulent growth, which attract aphids and diseases. Organic fertilizers, like compost, will also improve soil structure and moisture retention and will provide food for essential soil organisms.
- If you choose a commercial fertilizer, choose one specifically formulated for roses.
- If you have sandy soil that is poor in nutrients and organic matter, you may have to fertilize every month during the growing season. Roses growing in clay soil with organic matter may need fertilizing only once a year.
- Avoid using fertilizer/systemic insecticide combinations. These can cause stunted and deformed leaves, especially when the weather is cool. They may also harm soil-dwelling organisms.

MULCHING

Mulching with organic materials, like compost and shredded leaves, helps to conserve moisture, control weeds, improve soil structure, and keep roots cool in summer heat. Mulch can also prevent the spread of diseases like black spot by keeping disease spores from splashing up onto the



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plant from the soil. Spread a two-to three-inch layer of mulch around each plant, keeping the mulch a few inches away from the trunk.

PRUNING

Careful pruning can keep roses healthy and help to prevent disease and pest problems. Pruning allows you to remove dead, spindly or diseased plant material, helps to shape plants and promote flowering and new growth, and provides good air circulation to discourage diseases.

- During the growing season, remove any leaves and shoots affected by disease but do not prune too heavily. The plant will respond with new, succulent growth that is susceptible

to aphids and powdery mildew. During January pruning, remove any diseased portions of the plant.

- Good sanitation is essential in reducing disease problems. Remove all diseased prunings and rake up any diseased leaves and blossoms as they fall. Do not compost them unless you have reliably hot compost that you turn regularly. Diseases can be transmitted from stems, leaves, and petals lying on the ground and from diseased plant material.
- The modern Hybrid Tea Roses and Floribundas only produce flowers on new growth so prune to remove last year's wood. Cut these bushes back every January, leaving only 6" of canes at the base.

- Arching shrub roses should be pruned lightly so their naturally elegant shape is not destroyed. Thin the canes so they do not cross or rub, and cut back the lateral shoots.
- Climbers should also be pruned lightly. Don't cut back long canes. Train them into a horizontal or diagonal position to encourage lateral shoots that produce flowers all along the cane rather than just at the tip. Trim back lateral shoots to 2 or 3 nodes. Remove canes that cross or rub.
- Roses that bloom once in the spring should be pruned right after they have flowered.

MANAGING COMMON ROSE PESTS AND DISEASES WITHOUT PESTICIDES

Inspect plants on a regular basis so that you can detect any diseases or pests before they become a problem. Become familiar with the pests and diseases that are common in your area. Before you treat plants for pest problems, look for beneficial insects that are the natural enemies of rose pests.

APHIDS

Tiny (1/8"), sucking insects that feed on plant sap. Often found in clusters on new shoots and flower buds, especially on over-fertilized plants. May cause leaves to discolor or turn black with sooty mold. Summer heat and natural predators will reduce their numbers. **Controls:** Wipe off by hand or spray off with water, prune off infested growth, spray with an insecticidal soap, use slow-release fertilizers to prevent growth spurts.

BLACK SPOT

A fungus that causes circular black spots with fringed edges to appear on leaves and stems. Leaves may yellow and drop. Needs water to grow; leaves that remain wet for more than 7 hours are particularly susceptible. Spores over-winter on infected stems and on fallen leaves, and are spread by splashing water, cultivation, and insects. This disease is common along the coast. Inland it may be an indicator of excessive moisture, insufficient amounts of light or heat, or poor air circulation. **Controls:** Choose resistant varieties, prune to remove infected plant material and create air circulation, destroy fallen leaves, mulch to prevent spread of spores, spray with sodium bicarbonate or baking soda.

POWDERY MILDEW

Appears as a white or gray powdery coating on leaves, shoots and flower buds. Leaves may curl and drop. This fungus prefers warm dry days and cool nights with high humidity. Leaves need to be dry for the fungus to grow. New growth overwinters in leaf buds and on leaves and is spread by wind. **Controls:** Plant disease resistant varieties, water by overhead sprinklers during midday, prune to remove infected plant material and provide air circulation, spray with antitranspirants or a mixture of baking soda and horticultural oil.

RUST

A fungus that appears as small, bright orange spots on lower leaf surfaces, then as orange/brown spots on upper surfaces of leaves and stems. Does not affect blooms, but leaves may discolor and drop. Rust thrives in the cool, moist weather of coastal California. It overwinters as black spores on stems and leaves, and is spread by wind and water. **Controls:** Avoid overhead watering, prune back infected growth, mulch to prevent spread of disease.

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LESS-TOXIC CHEMICAL CONTROLS

If disease or pest problems are persistent in your garden, you may want to use one of these less toxic chemicals. Because these products prevent *but do not cure* disease, treatments must begin before symptoms are widespread. Be sure to coat both sides of the leaves. To decrease the possibility of burning leaves or flowers, water plants the day before you treat them and test a few leaves and petals before spraying the whole plant.

- Potassium bicarbonate (Kaligreen®) is similar to common baking soda and can be used to prevent powdery mildew. It must be applied weekly. Or, use this baking soda mixture: 1 tablespoon baking soda, plus 2 tablespoons horticultural oil in 1 gallon of water. Spray when you first detect disease, and repeat when new symptoms appear.
- Sulfur and lime can be effective against black spot, powdery mildew,

and rust. Do not use when temperatures exceed 85F° because you will burn the leaves.

- Antitranspirants such as Cloud Cover® or Wilt Pruf® and horticultural oil (Sunspray Ultrafine®) have been observed to provide roses with protection from fungal diseases. They create a thin coating that can prevent spores from fungal diseases from invading the leaves. Treatment is begun when new leaves appear in spring and must be repeated whenever you see new growth. Cloud Cover® in its ready-to-use form is too strong for roses. The concentrate can be mixed 1 part Cloud Cover® to 12 parts water to prevent burning. Use a 1% solution of horticultural oil and water (about 3 tablespoons of oil in 1 gallon of water).
- Neem oil (Rose Defense®) can help prevent powdery mildew, black spot, and rust. Repeat treatment every 7 to 14 days. Neem oil can be toxic to bees, so it is safest to spray it in the evening.

RECOMMENDED READING

- American Rose Society, 1998. Handbook for Selecting Roses. Shreveport, Louisiana. (318) 938-5402.
- Steve H. Dreistadt, 1994. Pests of Landscape Trees and Shrubs. Berkeley: University of California Division of Agriculture and Natural Resources.
- Maggie Oster, 1994. The Rose Book. Emmaus, Pennsylvania: Rodale Press, Inc.

RECOMMENDED WEB SITES

- American Rose Society: <http://www.ars.org/>
- Bugs and Roses Home Page: <http://www.jps.net/rosebug/>
- Santa Clara County Rose Society: <http://mejac.palo-alto.ca.us/orgs/sccrs/>

PRODUCTS

Examples of trade names of products listed in this fact sheet

Potting Soil: Whitney Farms; Fox Farms

Slow Release Fertilizer: Osmocote®

Potassium Bicarbonate: Kaligreen®

Antitranspirant: Cloud Cover®; Wilt Pruf®

Horticultural Oil: SunSpray Ultrafine®

Neem Oil: Rose Defense®

PESTICIDES AND WATER POLLUTION

Common household pesticides show up in treated wastewater and in Bay Area creeks, sometimes at levels that can harm sensitive aquatic life. So, water pollution prevention agencies have teamed up with participating Bay Area stores to reduce the risks associated with pesticide use. This fact sheet is part of a series of information pieces and store displays aimed at educating Bay Area residents about less-toxic pest management. Look for the “Our Water Our World” logo next to products in participating hardware stores and nurseries throughout the Bay Area.

Pest control strategies and methods described in this publication are consistent with integrated pest management (IPM) concepts, and are based on scientific studies and tests in actual home and garden settings. Follow all label directions on any suggested product. No endorsement of specific brand name products is intended, nor is criticism implied of similar products that are not mentioned.

FOR MORE INFORMATION

For more information, contact:

Bio-Integral Resource Center (BIRC)
(510) 524-2567

University of California Cooperative Extension Master Gardeners in your area (in the phone book)

Central Contra Costa Sanitary District website: www.centrialsan.org

University of California IPM website: www.ipm.ucdavis.edu

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Writing:

Tanya Drlik, Bio-Integral Resource Center
Debi Tidd, The Gardens at Heather Farm

Design:

Lauren Wohl Design

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