



## Integrated Pest Management Of Roses

Roses have long been favorites in the garden, both for their landscape value and as cut flowers. The focus of this fact sheet is to help gardeners increase their familiarity with how integrated pest management (IPM) can be applied to rose culture.

Successful IPM starts with: the appropriate site selection and soil enrichment, choice of optimum genetic material for disease resistance, selection of top grade plants from a reputable supplier, development of thorough insect and disease scouting and record keeping, and development of sound cultural and sanitation practices.

### Planning The Rose Garden

When selecting the site, keep in mind that roses need:

- at least six hours of sunshine, preferably morning sun that will quickly dry dew
- to be grown without competition from the roots of large trees
- good drainage (however roses can be grown in a raised bed or on a slope to avoid standing water)
- protection from hot afternoon sun or forceful wind
- good quality soil with plenty of organic matter

Cultivar selection is a very important component of IPM since many roses are particularly susceptible to pests. Rose breeders have selected for resistance to disease, and any good list of rose varieties will include resistance along with color and fragrance.

In general, the *Rosa rugosa* hybrids and old garden roses like gallicas, damasks, and centrifolias have good resistance. Rugosas cannot tolerate some chemical sprays, so should be kept clean with pruning rather than reliance on pesticides. Table 1 contains a brief list of roses with superior disease resistance.

### Roses with Superior Disease Resistance

#### Hybrid Teas

Folklore  
Ivory Tower  
Jardins de Bagatelle  
Paradise  
Pink Peace  
Precious Platinum  
Touch of Class

#### Grandifloras

Love  
Queen Elizabeth

#### Floribundas

Betty Prior  
Escapade  
Frensham  
Gene Boerner  
Passionate Kisses  
Playboy  
Trumpeter

#### Shrubs

Ballerina  
Carefree Wonder  
Knock Out series  
Meidiland series

#### Climbers

New Dawn

Adequate spacing and good air circulation reduces the ability of a fungal disease to spread easily or quickly. Rose diseases spread rapidly in crowded gardens where leaves touch each other and remain wet for extended periods of time.

Consider mixed plantings rather than a traditional rose bed. For example, roses might be included in herb and wildflower gardens or perennial borders. A major benefit of plant diversity is that more beneficial insect predators and parasitoids will frequent your roses if other species of flowers are available as pollen and nectar sources. Think of your garden as a habitat for beneficials as well as an interesting part of your landscape design.

### *Helping You Put Knowledge to Work*

### Nutrient Management And Growing Practices

Test your soil to determine what amendments are needed. Requirements vary according to pH and local availability of minerals. The ideal pH for roses is between 6.5 and 6.8. The soil can be improved with organic matter such as well-rotted manure or compost. Phosphorus should be added at planting time for healthy root growth. Fertilizer may be applied during the growing season to encourage repeat blooming.

Proper watering of roses can ward off diseases and insects. Irrigate each rose deeply in the soil. The amount of water required by the plant depends on its stage of growth. Roses need more water when they are coming into flower. Water less often if the flowers are being cut, and water sparingly before the new growth starts. Mulching with organic matter is an excellent way to keep roots cool in summer, retain moisture, and control weeds. Apply two to three inches of peat moss, ground bark, or composted leaves. This mulch will also help improve soil structure. Each year, the top layer of mulch that contains old rose leaves should be removed and replaced with new mulch.

Pruning in the spring accomplishes many goals: removing damaged or dead canes, shaping the plant, and opening up the interior for better air circulation. If the plant suffered heavily from a foliar disease in the prior season, any leaves remaining should be picked and destroyed.

The prunings, canes as well as leaves, may contain dormant fungal structures, cankers, and insect eggs. This debris should be buried deep under ground, burned where allowed, or sent to the landfill. Pruning low to the ground reduces the probability for pest survival in the wood, but it also can weaken the plant if you prune too short.

### Scouting And Record Keeping

Scouting and keeping good records are essential to IPM. One of the best ways to improve pest management is to be prepared for problems and detect them early. A garden diary or journal will help you to anticipate trouble and recall the place and time of first onset. Every couple of days, take a walk through the garden and examine the plants closely. Make notes of where and when you spot a problem. Record any remedies used, and your success rates.

In addition to potential problems and symptoms, look for beneficial insects in your garden, and evidence of parasitism. It takes some experience to recognize the young forms of many natural enemies, such as lady beetles and lacewings. Many predatory beetles, flies, ambush bugs, and other insects feed on aphids and other plant pests. It may take a season without insecticides to get to know the insects that help to protect your garden.

### Insect Pest And Disease Management

**Aphids**—Reduced shoot growth, distorted or pale foliage, small insects clustered on stems and shoots. Many natural enemies exist. Ladybugs and syrphid fly larvae eat many aphids. A strong jet of water can be used to wash aphids from plant surface or spray with insecticidal soap. If a pesticide is necessary consult Pest Management Around the Home. A multipurpose rose spray may be purchased.

**Japanese Beetle, Rose Chafer**—Leaves skeletonized, flowers eaten. Hand pick adult beetles and drop in a jar of soapy water. Individual flowers for show can be protected with covers (bags). If a pesticide is necessary consult Pest Management Around the Home.

**Roseslug and other sawfly larvae**—Upper leaf surfaces skeletonized, leaves devoured, only midvein remains. If the infestation is small, remove affected leaves. Handpick larger larvae. If a pesticide is necessary consult Pest Management Around the Home.

**Rose midge**—Buds or shoots blacken or die. Remove and destroy (bury, burn, or put in the trash) all affected buds and shoots as soon as you spot them. If a pesticide is necessary consult Pest Management Around the Home.

## Disease Management

**Black Spot**—Circular to irregular shaped black spots on the upper surface of the leaves, leaf yellowing, leaf drop, canes with raised purple-red blotches that turn black with age. Carefully prune and discard or destroy affected plant parts when foliage is dry. In autumn, rake and discard or destroy all fallen leaves, fruit and branches. Spray with an approved fungicide or with the mixture of baking soda and horticultural oil as described in Pest Management Around the Home. A multipurpose rose spray may be purchased.

**Botrytis Blight**—Damage mainly occurs in storage. Damage often found near ends of canes from which flowers were cut, small flecks and patches on petals, spotting on canes. In early spring, remove winterkill branches that may harbor the fungus. During the growing season, prune and discard or destroy any plant parts with symptoms, avoid crowding. Cultivars that prove particularly susceptible should be replaced with resistant varieties. If wet conditions develop, apply fungicide according to recommendations in the publication Pest Management Around the Home.

**Crown Gall**—Proliferation of tissue forms overgrowth or galls usually located near the soil line or around the crown region. Remove and discard or destroy infected plants and soil immediately surrounding the plants. Consider planting other species of plants in sites where rose crown gall infection is severe. Treat new bare root plants according to recommendations in the publication Pest Management Around the Home.

**Powdery Mildew**—Powdery white growth covering the leaves upper surface, leaves may become distorted. Avoid crowding, prune to thin plants and plantings to improve air circulation. In autumn, rake and discard or destroy all fallen leaves, fruit and branches. If disease appears apply fungicide according to recommendations in the publication Pest Management Around the Home.

**Rust**—Orange powdery spores are usually confined to the lower leaf surfaces, later in the season upper leaf surfaces have orange/brown spots, young stems and sepals may become infected, distorted growth. Avoid crowding, prune to thin plants and plantings to improve air circulation. When rust pustules are first seen on lower leaf surfaces, apply fungicide according to recommendations in the publication Pest Management Around the Home.

## End Of The Season Clean-Up

A goal for the late summer is to prepare the rose plants for dormancy. To discourage new growth after July 15 discontinue fertilizer application and allow the last flower on each stem to set seed. This will result in the development of rose hips. Leave the pod on the plant, for it will trigger physiological preparation for winter. No more new growth or flower buds will form below the rose hip. This hardening process protects the plant from frost damage so that it will have a better survival rate.

Practicing good sanitation is critical to reducing fungal disease problems. Remove any infected or infested leaves and rake up the old leaves at the base of the plant. This debris should be discarded or destroyed.

A good way to protect roses from winter injury is by burying the crown, including the graft and the base of the stems. Mound up soil 10 to 12 inches above grade. This is usually done in late November. The covering should be removed after the danger of serious freezing weather has passed and before new growth appears.

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**For Additional Information**

EcoGardening Fact Sheet #14. Attracting Insects' Natural Enemies. NYS CE Fact Sheet, Spring 1996, Cornell University.

EcoGardening Fact Sheet #13. A Gardener's Calendar for Pest and Nutrient Management. NYS CE Fact Sheet, Spring 1996, Cornell University.

EcoGardening Fact Sheet #10. Companion Planting. NYS CE Fact Sheet, Winter 1994, Cornell University.

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