

IPM OF THE COMMON INSECT, SPIDER MITE, MOLLUSK PESTS OF THE ROSE GARDEN

Pest	Chemical Control Measures*	Other Alternative Control Measures
<p>Scale Insects – several species may be present and feeding on stems and leaves. In general scale insects take several seasons to build up populations high enough to cause death of rose canes. Sudden increases may be due to the presence of ants which interfere with natural biological control.</p> <ol style="list-style-type: none"> 1. Rose scale 2. San Jose scale 3. Black scale 4. Soft-brown scale 5. Cottony-cushion scale 	<ol style="list-style-type: none"> 1. Spray infested plants with a dormant oil spray. 2. Spray infested plants with insecticidal soaps or botanical insecticides like pyrethrum as needed. 3. Spray with contact or systemic insecticides for longer residual control. 	<ol style="list-style-type: none"> 1. Physically dislodge them by hand as needed. 2. Control ants with ant baits, sticky bands, or contract insecticides. Ants may interfere with natural control by beneficial natural enemies. 3. Conserve and augment native natural enemies e.g., parasitic wasps and flies, some species of lady beetles, etc. 4. Depending on species involved, biological control methods can be used.
<p>Aphids – several species may be involved depending on area. They feed on tender plant growth throughout the growing season. They are most common during the spring months.</p>	<ol style="list-style-type: none"> 1. Spray infested plants with insecticidal soaps or botanical insecticides like pyrethrum as needed. 2. Spray with contact or systemic insecticides for longer residual control. 	<ol style="list-style-type: none"> 1. Physically dislodge them by hand or with water sprays as needed. 2. Control ants which may interfere with beneficial natural enemies. 3. Conserve and augment native natural enemies e.g., parasitic wasps, ladybugs, predaceous flower flies, etc. 4. Biological control, e.g., lacewings.
<p>Spittlebugs – immature stage of a brown leafhopper-like insect makes the unsightly spittle-like froth. They appear to cause very little damage to the plant and might not need to be controlled.</p>	<p>If control is needed, wash spittle/froth with water spray; then either spray with</p> <ol style="list-style-type: none"> a) insecticidal soaps or botanical insecticides or b) contact or systemic insecticides for longer residual control. 	<p>Wash spittle/froth and immatures off the plants with water spray.</p>
<p>Leafhoppers – several species may be involved. Immatures and adults suck sap from the stems and leaves; immatures are usually found on the undersides of the leaves.</p>	<ol style="list-style-type: none"> 1. Spray infested plants with insecticidal soaps or botanical insecticides like pyrethrum as needed. 2. Spray with contact or systemic insecticides for longer residual control. 	<p>Conserve and augment native natural enemies e.g., parasitic wasps, and predaceous insects (e.g., small pirate bugs, big-eye bugs, predatory thrips, etc.) and predaceous mites.</p>

<p>Thrips - Immatures and adults feed by rasping petals of light colored roses. They may also feed on stems and foliage.</p>	<p>Same controls as above.</p>	<p>Same controls as above.</p>
<p>Caterpillars – several species may be involved depending on the season and region. They feed on stems, foliage, and flowers. 1. Fruit-tree leafrollers -- late March – April 2. Tobacco budworms – occasional from mid April through fall</p>	<p>1. Spray infested plants with microbial insecticides containing <u>Bacillus thuringiensis</u> or with botanical insecticides like pyrethrum as needed. Inorganic insecticides such as Kryocide may be another less toxic alternative. 2. Spray with contact or systemic insecticides for longer residual control.</p>	<p>1. Dormant sprays on fruit and shade trees may have some control on overwintering egg masses of fruit-tree leafrollers. 2. Monitor/check rose bushes near fruit and shade trees from mid March-April for leaf-folding or leafroller activity. 3. Time sprays with the presence of caterpillar activity in the rose garden; do not apply sprays based on calendar dates.</p>
<p>Beetles 1. Hoplia beetles – present only from late April through June 2. Spotted cucumber beetles – occasional from May through fall</p>	<p>1. Spray infested plants with botanical insecticides like pyrethrum as needed. Inorganic insecticides such as Kryocide may be another less toxic alternative. 2. Spray with contact or systemic insecticides for longer residual control.</p>	<p>Physically dislodge them from the flower petals by hand and crush them as needed.</p>
<p>Rose Curculio [=Rose weevil] – April through June. Adults drill feeding and ovipositing holes on buds; larvae feed on petals then fall to the ground to overwinter and pupate. This weevil may be a big problem among rosarians who don't cut back spent bloom.</p>	<p>Same chemical controls for Hoplia and Cucumber beetles apply to Rose curculio.</p>	<p>1. Physically dislodge them from the flower petals by hand and crush them as needed. 2. Conserve and augment native natural enemies e.g., predaceous thrips, black hunter bugs, etc. 3. Parasitic nematodes might be used as a biological control provided that rose curculio overwinters as larvae/pupae in the soil and there is an endemic population in the rose garden.</p>

<p>Raspberry Horntail Wasps – active in late April through June. Female wasps lay eggs on tender canes about 4-7 inches from their tips. The larvae girdle the cane and the cane tip droops over due to lack of liquids from the base of the cane.</p>	<ol style="list-style-type: none"> 1. Spray infested plants with botanical insecticides like pyrethrum as needed. 2. Spray with contact or systemic insecticides for longer residual control. 	<ol style="list-style-type: none"> 1. Check plants for distinct egg punctures 4-7 inches from the tips of tender canes. The oviposition sites are blisterlike. The eggs can be punctured with a needle. 2. Time insecticide applications with the first sign of drooping canes. Systemic insecticides appear to give a better control than contact insecticides. The shorter spray interval on the insecticide label may be needed for adequate control.
<p>Cane-borers [=Twig-nesting wasps/bees] <ol style="list-style-type: none"> 1. Aphid predators – March through fall 2. Fly predators [Ectemnius spp.] – May through fall </p>	<p>No chemical controls recommended as these insects are considered beneficial natural enemies.</p>	<p>Exclude these twig nesting wasps by sealing the ends of recently pruned canes. Rose growers invite these insects into their gardens by pruning their roses during the winter and cutting spent bloom during the season and leaving the stem tips uncovered.</p>
<p>Leaf-cutter bees – these bees damage the rose leaves by cutting pieces of leaves from the margins from June through August.</p>	<p>No chemical control recommended as these insects are considered beneficial natural enemies.</p>	<p>No alternative controls known.</p>
<p>Two-spotted spider mite – most common from May through fall; however, they may be endemic in the garden. They suck the sap from individual cells creating a bronzing appearance of the foliage. Spider mites produce distinctive webbing material on the under side of the leaves.</p>	<ol style="list-style-type: none"> 1. Spray infested plants with insecticidal soaps as needed. 2. Spray with miticides for longer residual control. Check the label of contact and systemic insecticides for miticidal action. Note: Certain insecticides like carbaryl (Sevin) and acephate (Orthene) have been recorded as inducing spider mite outbreaks. If you use these insecticides, monitor closely for spider mites. 	<ol style="list-style-type: none"> 1. Monitor garden for mite activity by checking the underside of leaves on a weekly basis. 2. Wash off the underside of the foliage with a water wand about three times per week or as needed. 3. Effective natural enemies are available commercially, but they need to be introduced into the garden early in the season.

<p>Snails and Slugs – stem and foliage feeders; they walk on their stomach and are active at night leaving a distinctive silver trail. During the day they hide in dark, moist protected areas.</p> <ol style="list-style-type: none"> 1. Brown Garden Snail 2. Slugs – various species 	<p>Apply available slug and snail pesticides containing metaldehyde like Deadline. Be aware of any pets and kids in the areas to be treated.</p>	<ol style="list-style-type: none"> 1. Place physical barriers around rose beds, trunks, and even pots; Copper bands and a new stickum containing Copper Sulfate are available. 2. Decollate snails can be used as a biological control agent of brown garden snails in some areas. 3. Trap and dispose of them. 4. Establish Snail farm for food and profit; if you can't beat them, eat them!
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***When using any pesticide READ THE LABEL! Mix and apply the pesticide according to what the label says. Be sure the label says the pesticide can be used on “roses” or “ornamentals.” If the pest you are trying to control is not listed on the label, that particular pesticide may not be a good choice. Follow all safety precautions carefully – to protect yourself and the environment.**