

This chapter describes insect and disease problems of ornamental plants. The first section describes pests that affect many different ornamentals, followed by pests of specific ornamentals. Management information describes preventative and cultural measures that may control the pest. Try these first. Sometimes the management information also mentions pesticides. When more than one pesticide is mentioned, the least toxic pesticide is listed first. Before using a pesticide read and follow label directions. Also read Section 9 “Using Pesticides to Manage Pests”. It contains important safety information.

Proper identification of plant pests and diseases is an important step before attempting to control the pest. Not all plant problems are caused by pests; some are caused by cultural, nutritional or environmental conditions. Photographs for many of the insects and diseases mentioned in this chapter can be found on pages 89-118. See page 3 for information on how to get help identifying plant problems.



Pests Affecting Many Ornamental Plants

INSECTS

Aphids

Aphids attack a wide range of ornamental plants, causing leaves to curl and twist. Look for small, soft-bodied, sap-sucking insects that vary in colour from pinkish-white to green and black. These insects will be found in clusters or colonies on stems



and the underside of leaves. Secretions of sticky ‘honeydew’ often appear on lower leaves. Cars parked below infested trees can become coated with this honeydew. Aphid honeydew also provides a food source for fungi, which appear as a black, sooty mould on leaves.

Management

Aphids are best controlled when colonies are small and before leaves start to curl. They can often be removed by hosing down the plant with water. Aphids will usually be controlled by natural enemies, such as ladybugs and parasites.

“Aphid Chaser” is a commercially available alarm pheromone for the control of aphids on roses. It does not kill aphids, but disrupts their feeding and

reduces their population growth. This will also increase the effectiveness of natural enemies. The dispenser device is a small rubber donut which is placed by hand on plant stems or branches. For best results apply early in the season according to package instructions, and replace every 4 weeks or when aphids re-appear.

Use insecticides only as a last resort, as they will also kill the natural predators and parasites of aphids. Plants can be treated with insecticidal soap, pyrethrins, endosulfan or malathion. See the “Pesticide Products” chart on page 59 for details on insecticides.

Asian Longhorned beetle

(*Anoplophora glabripennis*)

(See figure 94, page 97)

This beetle is currently present in localized areas in Eastern North America (Toronto, New York, Chicago), where eradication attempts are underway. There are several long-horned beetles that bore into various species of live trees and logs which could be introduced into B.C. Other species of concern include: brown spruce longhorn beetle, smaller Japanese cedar longhorned beetle, great capricorn beetle, and *Monochamus* spp. (sawyer beetles). There are native sawyer beetles in B.C., including the Oregon fir sawyer beetle, which is commonly confused with the Asian longhorned beetle.

Management

There is no ‘management’ for Asian longhorned beetle. If found the Canadian Food Inspection Agency needs to be notified and attempts will be made to eradicate it. Other similar native beetles can be found in downed logs, stumps, and dying or stressed trees. Maintaining good tree health is always the best preventive tool.

Caterpillars

A wide variety of caterpillars attack many ornamental plants. Most cause chewing damage on leaves and new shoots. Some types feed within rolled leaves; others skeletonize leaves just under the surface or form webs. Damage may occur throughout the growing season. Caterpillars come in different sizes and colours. For more information see ‘Bruce Spanworm and Winter Moth’ under “Pests of Fruit and Nut Trees”, page 143.

On herbaceous plants, watch for signs of leaf or bud damage and check for young larvae in the spring. Unlike cutworms, which only feed at night, most caterpillar larvae feed in the daytime.

Many caterpillar pests of ornamental trees have a population cycle with a peak every four to seven years. Most large trees can withstand quite a lot of defoliation in the peak year with no permanent damage.

Management

Inspect woody plants during the dormant season for hardened, dark grey egg masses (1.2- 2.5 cm wide) that encircle the twig. These can be pruned off and the prunings destroyed. Dormant oil may also be used according to label directions to kill overwintering eggs on trees. Sticky bands placed around the base of tree trunks will prevent damage from some caterpillar pests. Small numbers of caterpillars may be removed by hand picking or by pruning and destroying infested foliage (for example, with tent caterpillars).

If an infestation is severe, it may be necessary to apply an insecticide spray. This is usually not practical or necessary for large trees. There is little point in spraying trees if the damage has already been done and the caterpillars are already at their largest stage, or have already pupated. Btk is effective in controlling an early infestation of young caterpillars. The caterpillars die after feeding on treated leaves. Alternatively, carbaryl or pyrethrins can be used. Note: repeated use of carbaryl or pyrethrins may cause a build-up of mites. (See “Pesticide Products” chart on page 59).

Forest and Western Tent Caterpillars

(*Malacosoma disstria* and *M. californicum*)

(See figure 83, page 97)

The forest and western tent caterpillars have very similar life cycles. In spring the eggs hatch and larvae feed on flowers, buds, and foliage, usually in colonies. Western tent caterpillars form tent-like webs for protection, while forest tent caterpillars form a silken mat on the trunk or branches from which they move out and defoliate the host. They pupate in cocoons, emerging as tan coloured moths about midsummer. Females encircle twigs on the host tree with bands of eggs, which overwinter and hatch the following spring.

Forest tent caterpillars are bluish-grey and have a prominent row of whitish diamond shaped dots along the back. Western tent caterpillars are similar, but are yellowish brown, with a row of blue spots and orange spots along the back. Caterpillars can be up to 5 cm long. Moths have a wingspread of up to 34 mm and are varying shades of brown. They fly in June and July. Trees known to be susceptible to western tent caterpillars include: *Acer*, *Betula*, *Crataegus*, *Fraxinus*, *Populus*, *Prunus*, *Quercus*, *Rosa*, *Salix*, *Tilia*, and *Ulmus*. Trees known to be susceptible to forest tent caterpillars include: *Arbutus*, *Betula*, *Ceanothus*, *Corylus*, *Crataegus*, *Ilex*, *Malus*, *Populus*, *Prunus*, *Quercus*, and *Salix*.

Management

Remove overwintering egg masses encircling twigs. During the growing season, prune off branches with caterpillars and tents, if not too numerous, and destroy the caterpillars. Trees can withstand some defoliation and usually recover with no management required.

Fall Webworm

(*Hyphantria cunea*)

(See figures 86-87, page 97)

Tent-forming caterpillars that occur in spring and early summer are either “forest” or “western” tent caterpillars. Those that occur in late summer and early fall are called “fall webworms”. They are variously coloured and hairy. Apple and cherry ermine moth larvae form small tents during May and early June. Healthy trees will tolerate considerable feeding damage.

Management

During the dormant season, inspect branches up to pencil thickness for hardened, dark grey masses of eggs circling the branch. Prune them off and destroy prunings, and spray trees with dormant oil following label directions. See “Dormant Spraying”, page 79. During the growing season, prune off small branches with tents on them, or spray with Btk, pyrethrins, endosulfan or carbaryl at label rates.

Elm Leaf Beetle (*Pyrralta luteola*) and other Leaf Feeding Beetles

Various species of leaf-eating beetles and their larvae feed on trees and shrubs such as elm, alder, and willow. Some species have 2 generations per growing season. Beetles usually feed on the edges of the leaves resulting in notched and ragged leaf margins. Healthy trees can tolerate considerable feeding damage.

Management

Elm leaf beetle larvae migrate down the tree trunk to pupate. Sticky bands can be applied to tree trunks to capture larvae before they pupate and prevent an infestation the following year. If trees are small and damage is severe, spray with insecticidal soap, pyrethrins or carbaryl according to label directions. Spraying a 50 cm wide band of insecticide on the tree trunk at a convenient height will also kill these migrating larvae. However, repeat treatments may be needed later in the season if larvae or beetles reappear.

Gypsy Moth

(*Lymantria dispar*)

(See figures 84-85, page 97)

Gypsy moth is a serious threat to B.C. forests. The gypsy moth caterpillars feed on a wide range of deciduous trees. Entire trees can be stripped of leaves. The caterpillars are hairy, tan in colour with distinct coloured spots on their back, and grow up to 6 cm long. Moths emerge in July and August. There is one generation per year. Egg masses are laid in sheltered places on hard surfaces such as tree trunks, behind rocks, fallen logs, fences, or lawn furniture. The female adult gypsy moth lays all of her eggs in a single egg buff to tan coloured mass that resembles a sponge or chamois. The number of eggs in one of these masses varies from fewer than 100 to more than 1,000 eggs.

Management

This pest has been found only in some parts of the Lower Mainland and Southern Vancouver Island and is not established in B.C. There are ongoing surveys to detect and destroy egg masses. If you find velvety, buff coloured egg masses or caterpillars on trees, please notify your local Ministry of Agriculture and Lands, forestry service, or Canadian Food Inspection Agency office.

Andromeda Lacebug

(*Stephanitis takeyai*)

Adults are 3 mm long and have a lacy appearance. They suck plant juices of *Pieris japonica* and sometimes rhododendrons and azaleas. They feed on the underside of leaves, giving them a yellow, mottled appearance. They have 1 generation per year. Feeding starts in mid-May. Plant health is generally unaffected, though mottling on leaves from feeding is unattractive.

Management

Hosing off infested plants with water often controls the pest. Lacebugs are susceptible to most broad spectrum insecticides. If needed, apply insecticidal soap or malathion when young lacebugs are first seen.

Mealybug

(*Pseudococcus* spp.)

These scale-like insects have a soft scale that is covered in white, powdery wax. They feed on the sap of plants and produce honeydew on all parts of plants. Both larvae and adults cause damage. The honeydew attracts ants and often leads to the growth of sooty mold. Affected plants appear unthrifty, yellow, wilted, or deformed, and can die from the infestation. A wide variety of plants can host mealybugs. About 30 days are required for one generation. Two to eight overlapping generations are possible in a year, depending conditions and species.

Management

Mealybugs favour high temperatures and humidity, so climate management is a good preventive approach; keep temperature and humidity as low as possible for indoor plants. Sprays with water or pesticides (insecticidal soap, malathion, carbaryl) can effectively control crawlers (young that do not have a thick waxy protective covering). Adults are not controlled effectively with pesticides. For heavily infested plants, plant disposal may be the only permanent solution.

Mites

See page 145, 270.

Root Weevils

See page 121.

Scale Insects

See page 144.

Shot hole Borer, Bark and Ambrosia Beetle

See page 143.

DISEASES

Bacterial Blight

(*Pseudomonas syringae*)

(See figure 203, page 107)

Bacterial blight is a widespread disease of woody ornamental plants in the Pacific Northwest but rarely occurs in the Interior. In Coastal British Columbia, symptoms appear on new growth from March to June under cool, wet conditions. The bacteria pass the summer and winter on and inside twigs and buds. Damage from bacterial blight is often worse in very wet springs or following a late spring frost or cold period. Bacterial blight is common on more than 40 species of woody deciduous trees such as aspen, flowering cherries, dogwood, forsythia, lilacs, linden, magnolia, ornamental maples, magnolia, ornamental pear and, roses. The most common symptom on woody ornamentals is wilting, blackening and tip dieback of new shoots. It also causes blackened buds, flower blast, black, angular leaf spots and vein blackening, leaf shot hole and stem and trunk cankers.

Management

Young landscape trees are more susceptible to bacterial blight than older established trees and shrubs. Protect frost sensitive plants from cold weather by planting in sheltered locations. Prune out blighted shoots in January or February or in mid-summer when weather is dry. Minimize pruning wounds by making sharp cuts and disinfect pruners between cuts with 10% household bleach solution (corrosive), Lysol, or other disinfectant. Prune back to green tissue below the cankered or dead wood. Remove and destroy prunings, dead twigs and fallen debris. Keep weeds under control as the bacteria can survive on weeds. Provide good nutrition, drainage and growing conditions and add lime to increase the soil pH if necessary. Do not fertilize after July as this will lead to new growth which is more susceptible to bacterial blight. Space plants for better air circulation.

Copper sprays applied in spring should be at a low concentration, 2 ml/L of water, to avoid shoot damage. Those applied in fall should be at a rate of 6 ml/L as they will not damage mature leaves and will be more effective. See label for detailed information and precautions.

Grey Mold or Botrytis Blight

(*Botrytis cinerea*)

Grey mold, caused by the fungus *Botrytis cinerea*, is common on decaying plant tissue and debris where there is high humidity and moisture. Botrytis breaks down dead plant tissue into humus and survives in plant debris and in the soil. A grey, fuzzy mould develops on dead or dying plant tissue then spreads to healthy plant tissue when conditions are wet. Infection first appears as water-soaked spots or areas on soft or senescent foliage, flower parts or young stems. Fallen petals that land on leaves are often areas of infection by grey mold. These areas turn tan to brown or greyish-white as they dry out. Fuzzy grey spore masses develop on infected tissues under cool, moist conditions. Spores are air borne and can infect healthy plant tissue. On flowers and woody ornamentals it can cause flower, leaf and shoot blights and occasionally stem rots or cankers.

Management

Thoroughly clean and discard garden debris and refuse in the fall to reduce the level of grey mold in the garden. Remove spent flowers and old leaves before grey mold becomes established. Susceptible plants should be grown in a part of the garden having excellent sun exposure with good air circulation and spacing. Avoid sprinkler irrigation of annual and perennial flowers as they approach bloom. If practical, water the base of plants in the morning so that plants dry off quickly.

Powdery Mildew

(See figure 204, page 107)

There is a powdery mildew fungus for almost every plant species except conifers. With few exceptions, most powdery mildew fungi are very host specific – for example, maple powdery mildew will not attack rhododendron. Look for white, powdery growth on leaves and shoots. Under favorable environmental conditions these diseases can cause significant damage. Warm days and cool nights are ideal for disease development.

In Coastal British Columbia, the disease can occur as early as January on some plants such as rhododendrons.

Management

Avoid highly susceptible varieties; some very resistant varieties of roses and other ornamentals are available. Avoid planting in shady areas with poor air circulation. Cleanup of diseased leaves at the end of the season and removal of visibly infected shoots during pruning will reduce disease carryover. Hosing off infected plants with water in mid-day is partially effective as long as the plants do not stay wet overnight. Lime sulphur applied during dormancy according to label directions will help to reduce over wintering fungus on the twigs.

If a chemical control program is desired during the growing season, apply a garden product containing, folpet, thiophanate-methyl, triforine or sulphur according to label instructions. To be effective, a fungicide program must begin before mildew is well established.

Dilute solutions of baking soda mixed with insecticidal soap or horticultural oils are sometimes used by home gardeners. However this can be damaging and is not a registered control product (see “Home Remedies”, page 54).

Root Rot

(*Pythium* and/or *Phytophthora* species)

Several soil-borne fungi can cause root rot of garden ornamentals. Common causal agents are *Pythium* and *Phytophthora* species, which are members of the “oomycete” group of fungus-like organisms called “water moulds”. Woody plants are more commonly attacked by *Phytophthora* species and herbaceous plants by *Pythium*, but there are many exceptions. As a rule, they cause disease only when the soil is poorly drained and wet for extended periods of time. Symptoms of root rot include wilting of foliage on warm days, poor growth, pale colour or symptoms of nutrient deficiency and in severe cases, death of the plants. Affected root systems show a lack of feeder roots and blackening or browning of larger roots. When roots are pinched and pulled gently, the root cortex (outer layer) slips off easily, leaving a bare vascular cylinder. The rot may extend up into the crown of the plant.

Management

Good soil drainage is the key to avoiding most root rots. In heavy soils, this will require installation of perforated plastic tile drains with a suitable outlet. The deeper the drains, the larger the area that will be drained so they should be installed as deep as the outlet permits. A few root rots will cause problems even in well-drained soils. In these cases, replace dead plants with other species that are more resistant to root rot.

Over watering or surface watering with drip-lines or sprinklers or flooding can bring on root rot. Drought stressed plants seem to be more susceptible to root rot infection later when moisture is restored.

Armillaria Root Rot

(*Armillaria* spp.)

Armillaria root rot occurs on over 700 species of conifer and hardwood trees and shrubs. *Armillaria* is a native fungus in British Columbia soils and most often infects plants on newly cleared land. In landscape plants, the disease is most commonly found on arborvitae, cedar, other conifers, crabapple, oak, blackberry and raspberry.

The first symptoms are decline and dieback, with leaves turning yellow and wilting. Only one side of the plant may be affected. Infected trees may die. Cutting away the bark at or just below ground level reveals a white mat of fungal mycelium. Black shoestring-like strands of fungal mycelium called 'rhizomorphs' may be visible in the mat or around the base of the plant. Rhizomorphs are evidence of armillaria root rot and can look like roots when found in the soil. Roots are destroyed and turn dark brown to black and the rot extends into the crown of the tree. In the fall, a cluster of honey-coloured mushrooms may appear at the base of infected trees.

Armillaria can survive for many years on dead roots and old cane stubs. It is usually a disease of mature trees that are suffering environmental stress. Healthy, vigorous trees can often out-grow the infection until other factors, such as flooding or soil compaction inhibit root growth.

Management

Water deeply when needed. Avoid surface watering around the crown and main trunk. Remove infected trees and soil in the root zone and replant with resistant species. Western larch and incense cedar are among the most resistant conifers. Resistant plant species are listed in the Nursery and Landscape Pest Management & Production Guide. There is no effective chemical control.

Verticillium Wilt

(*Verticillium* species)

Two species of *Verticillium* fungi (*Verticillium dahliae* and *Verticillium albo-atrum*) cause wilting of woody plants; *V. dahliae* is the most common. This species produces microsclerotia that can carry over in soil for up to 10 years. *V. albo-atrum* persists in the soil for 1-2 years, and is most commonly found on alfalfa. These fungi attack many deciduous trees, herbaceous perennials, berries, weeds and vegetables but do not infect conifers or grasses.

Other hosts of *Verticillium* fungi include eggplant, potato, tomato, dahlia, raspberry and strawberry. Landscape trees planted on land previously cropped with these plants have a high risk of developing the disease. The fungus enters the roots and moves upwards in the plant, plugging up the plant's vascular system. Often the first symptoms seen are nutrient deficiencies, yellowing, wilting and dieback of young twigs and branches, often on one side of the plant or tree. These symptoms are easily mistaken for root rot, frost damage, drought stress or other problems. However, with verticillium wilt, the dieback becomes progressively more severe from year to year. Cutting into woody stems with a knife reveals black or brown streaks in the wood or vascular cambium, often in nodes where branches or stem diverge, but these are not always visible. Mature landscape trees with verticillium wilt will sometimes 'wall-off' the fungus in the infected branches and survive for many years. Other trees may totally succumb within a year or two of the first twig dieback.

Management

Avoid drought stress or flooding on mature landscape trees. Remove dead and dying plants including the infested roots and soil and replant with a tolerant or resistant species (refer to the Nursery and Landscape Pest Management & Production Guide). Mature trees where dieback is just starting can be pruned to remove dead wood and may show only intermittent symptoms for many years. Disinfect pruners between cuts with 10% household bleach solution (corrosive), Lysol, or other disinfectant. No chemical controls are available.

Ramorum Blight and Dieback (Sudden Oak Death) – A Quarantine Disease

What is Ramorum Blight and Dieback?

Phytophthora ramorum, the causal agent of ramorum leaf blight and shoot dieback is an oomycete plant pathogen that can infect many ornamental plants. It was first known to cause sudden oak death (SOD), killing a large number of tanoak and coast live oak trees in California. SOD was first reported in Coastal California in 1995 and later in Southwestern Oregon where it is confined to pockets of forest lands. In 2004, the pathogen was detected in a nursery in California. Since then, the pathogen has been detected in nurseries in British Columbia and several U.S. states, particularly California, Oregon and Washington. Strict regulatory control measures have been taken by both Canada and the United States to destroy all identified plant materials, and sanitation measures are in place to prevent the spread of the disease. This disease is not established in British Columbia or Canada.

P. ramorum has a wide host range, infecting nearly 70 genera of plants, including *Acer*, *Aesculus*, *Arbutus*, *Camellia*, *Lithocarpus*, *Magnolia*, *Quercus*, *Pieris*, *Prunus*, *Pseudotsuga*, *Rhododendron*, *Rosa*, *Rubus*, *Syringa*, *Taxus*, *Umbellularia*, *Vaccinium* and *Viburnum*.

How does Sudden Oak Death/ Ramorum blight and dieback spread?

The pathogen produces spores which are blown by the wind or splashed in rainwater or dew onto leaves and branches of shrubs and trees nearby. Leaves, twigs, branches and even the trunks of some hosts may be infected. *P. ramorum* can also be accidentally spread to new areas through transport of infested soil or plant parts like cuttings, foliage and firewood. Movement of nursery stock (primarily *Camellia*, *Rhododendron*, *Viburnum*, *Pieris*, *Pyracantha* and *Kalmia* species) have been responsible for most spread of ramorum blight to new locations in the U.S. and Canada.

Symptoms

Ramorum blight and dieback is an aggressive disease capable of killing healthy, mature oak trees. The damage on other ornamental hosts is variable, ranging from cosmetic damage with foliar blights or leaf spots to eventual death of the plant. Signs of infection may be confused with similar symptoms caused by other plant diseases.

- Susceptible oaks exhibit the most dramatic and serious symptoms. Symptoms include bleeding cankers on the trunk and branches and the foliage changes very rapidly to yellow and finally brown. Infected trees die. (See figure 212, page 108)
- Infected rhododendrons show brown leaf blotches with fuzzy margins, and dieback at the ends of twigs and branches. (See figure 211, page 108)
- Pieris and camellia are characterized by leaf blight and shoot dieback.
- On huckleberry, infected leaves often fall off very quickly. In severe cases, stem or twig dieback may extend down to the soil-line and kill the plant.
- Viburnum may be subject to leaf blight, shoot dieback and wilting.
- Symptoms on arbutus may include leaf spot, canker or shoot dieback.
- Symptoms on big leaf maple, cockeye and pink honeysuckle include leaf spots.

For a complete list of symptoms and related information, visit the California Oak Mortality Task Force homepage at <http://www.suddenoakdeath.org/>.

Prevention and Management

Prevention, sanitation and eradication measures are the current management strategies. No effective chemical controls are currently available.

To help prevent the introduction of Sudden Oak Death/Ramorum blight and dieback, do not transport infected or potentially infected host plant material and soil that is taken from areas where the *P. ramorum* is known to occur. Contact the

Canadian Food Inspection Agency's (CFIA) local office regarding quarantine restriction information on movement of hosts and associated materials. The disease is particularly active during spring, early summer and fall. Be aware of the symptoms, visually inspect host plants, and report possible cases to your local CFIA, Canadian Forestry Service or Provincial Ministry of Agriculture and Lands office/diagnostic lab.

Environmental Injury

See "*Plant Disorders Not Caused by Pests (Abiotic Disorders)*", on page 83.

OTHER PESTS

Algae, Lichens and Moss

Variously coloured growths may be found on the twigs, limbs and trunks of many trees and shrubs. The growths may be leaf-like, hairy or scale-like. They are not parasitic on plants but make them look unsightly and in the case of evergreens, interfere with photosynthesis.

Management

Annual dormant sprays with lime sulphur will prevent the establishment of these growths. Once established, however, they must be scraped off with a wire brush or stiff scrub brush in conjunction with spraying.

Deciduous Trees and Shrubs: Apply lime sulphur at 120 mL/L of water during dormant period, or 50-53% copper spray at 6 mL/L of water using a spreader sticker. If plants are not completely dormant, a lower concentration of lime sulphur must be used but it will not be as effective as a dormant spray. Copper sprays may also burn young shoots if applied under cool, cloudy conditions. Do not use lime sulphur on filberts, apricots or viburnum.

Evergreen Shrubs (such as, rhododendron, juniper): Apply 50-53% copper spray at 4.0 mL/L of water. Repeat as necessary.

Holly: Apply lime sulphur at 60 mL/L of water in early spring but not after April 1 and not on a warm day; or 50-53% copper spray at 4 mL/L of water. The copper spray may be repeated in the fall but avoid applications that may leave visible residues at harvest.

Fences, greenhouse benches, etc.: Cryptocidal soap (potassium salts of fatty acids) controls algae, mosses, lichens and liverworts. Use as directed on the label. Using lumber, which has been pressure-treated with wood preservatives, will delay the growth of these organisms for many years but should not be used on lumber in contact with food products. For further information on the safe use of wood preservatives, see page 80.

Slugs and Snails

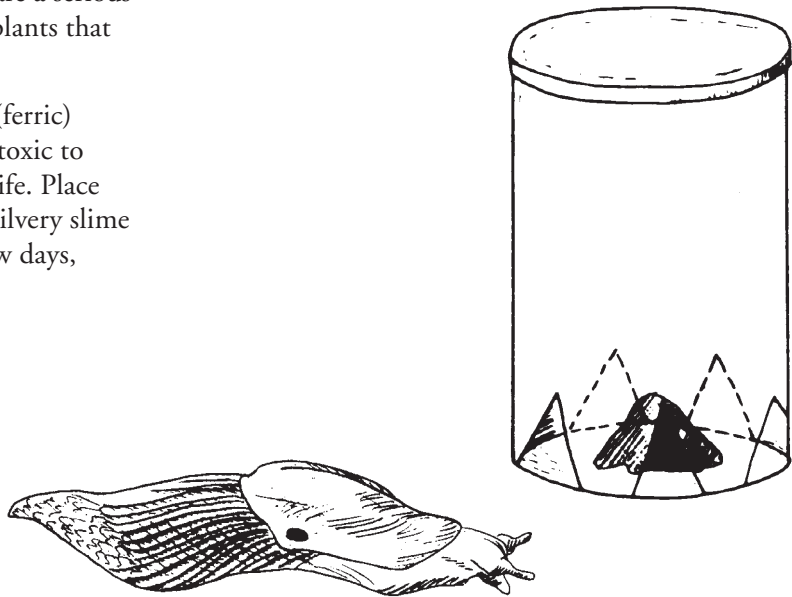
Slugs have soft, un-segmented bodies and exude a slimy mucous. They are active throughout the year if temperature and humidity are suitable. They shelter in moist, dark places during the day and feed at night. Surface tissues of the plants are rasped, and irregular holes are eaten in foliage leaving it slimy and tattered. Seedlings may be completely eaten and blossoms on flowering plants may be severely damaged. Snails have shells and are usually less numerous and do less damage than slugs. However, they may be found in trees, whereas slugs prefer to stay on the ground.

Management

Slugs prefer damp, shaded areas, so removing vegetative trash and other daytime hiding places and keeping grass mowed will help to control them. Large slugs can be destroyed by walking through the garden when it is damp and cutting them in half with a sharp, flat spade. This is impractical for small slugs. If slugs are a continual problem, apply control measures early when seedlings are in the most vulnerable stage. Homemade slug traps, containing beer or fermented yeast and sugar can be used to attract slugs that drown in the liquid. In flowerbeds, place boards, grapefruit rinds or cabbage leaves as shelter sites for slugs and then destroy the slugs in the morning. Slugs will not feed on geraniums and many ornamental shrubs. If slugs are a serious problem every year, consider growing plants that are not attractive to them.

Commercial slug bait containing iron (ferric) phosphate (in pellets) is attractive and toxic to slugs, but is not toxic to pets and wildlife. Place bait on the ground in areas where the silvery slime trails are evident. Replace bait every few days, particularly after rainfall.

Baits (either pellets or thick liquid) containing metaldehyde are toxic to pets and wildlife, and should be used only as a last resort. The metaldehyde bait should be placed in a “bait protector” made from a coffee can or something similar. Several holes are made along the bottom sides of the coffee can and the lid replaced. This is not an effective way to protect dogs from poisoning as they may knock the cans over. The same treatments apply to snails in flower and vegetable gardens. Do not get slug bait on plants grown for food.



Slug and snail coffee can bait protector