



Gardennote

Pest and disease control for home gardeners

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Unlike commercial farmers, home gardeners only have access to a limited number of pesticides. Chemicals, that are registered for home use are sold in hardware shops, nurseries and chemical retailers, and are typically in small packages, not stronger than poison schedule S6 (Poison).

This gardennote lists chemical and cultural control methods, currently (June 2010) available to home gardeners. When using chemicals, always follow label instructions and wear recommended safety gear.

Note that some chemicals are registered for use on ornamentals but not on fruit and vegetables.

Reduction of contributory factors

Be aware, that there are a number of steps that can be taken to prevent pest or disease outbreaks.

Removing ants is relevant to the control of aphids, scales and mealybugs because ants move these insects around the garden. Removing weeds and disturbing leaf litter and thatched lawn edges is relevant to the control of beetles and other insects because these sites provide additional food sources and places to breed.

Reducing humidity is relevant to the control of fungal disease. Avoid over-watering and watering at night and, if possible, avoid wetting the leaves. Ensure plants are not over-crowded. Keep pruning equipment clean.

Use of predators

A number of predatory insects are the natural enemies of many pest insects. Natural predators include lacewings, ladybirds, hoverflies, parasitic wasps, mantids, spiders, birds, frogs and lizards. They can be encouraged by avoiding chemical use and growing a diversity of plants with nectar-rich flowers and different heights of vegetation to provide cover. Buying predatory insects to target certain pest species is not viable for the average gardener, from whose garden the predators can escape; however, it is an option for owners of specific plant collections in controllable spaces such as glasshouses and shade-houses.

Disposal

After manually collecting pests or pruning diseased plants, seal in plastic bags and place them in the bin.

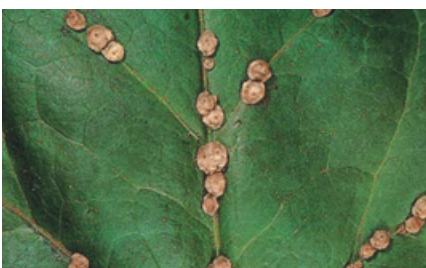
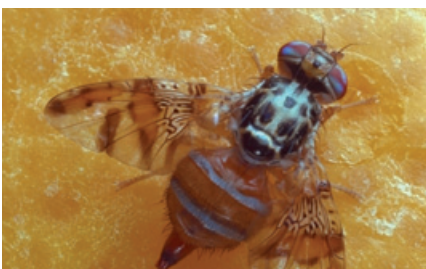
Important disclaimer

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GROUP	PEST OR DISEASE	CHEMICAL CONTROL (active ingredient/s)	CULTURAL CONTROL	ADDITIONAL COMMENTS
BEETLES	African black beetle	Chlorpyrifos	Disturb breeding sites.	Reduce garden lighting as it attracts these nocturnal beetles.
	Dried fruit beetle	(Cultural control is better for home gardens)	Disturb breeding sites and collect fallen fruit.	
	Spring beetle	Maldison	Disturb breeding sites.	
	Vegetable beetle	Chlorpyrifos	Disturb breeding sites.	
WEEVILS	Garden weevil	Cyfluthrin, methiocarb	Remove weeds.	
CATERPILLARS AND OTHER GRUBS	Bag-shelter moth	<i>Bacillus thuringiensis</i>	Remove and dispose of the silky bags when they reach tennis ball size.	Avoid touching the irritating body hair.
	Budworm	Bioallethrin + bioresmethrin, bifenthrin, cyfluthrin, maldison + petroleum oil, pyrethrins	Encourage natural predators.	Avoid touching the irritating body hair.
	Cabbage white butterfly	Bifenthrin, cyfluthrin, maldison + petroleum oil, pyrethrins	Encourage natural predators.	
	Cluster caterpillar	Bifenthrin, cyfluthrin, maldison + petroleum oil, pyrethrins	Encourage natural predators.	
	Cutworm	Bifenthrin, cyfluthrin, diazinon, maldison + petroleum oil, pyrethrins	Put toilet roll tubes smeared with onion juice around seedlings.	
	Diamondback moth	<i>Bacillus thuringiensis</i> , bifenthrin, cyfluthrin, maldison + petroleum oil, pyrethrins	Encourage natural predators.	
	Looper caterpillar	<i>Bacillus thuringiensis</i> , bifenthrin, cyfluthrin, maldison + petroleum oil, pyrethrins	Encourage natural predators.	
	Sawfly larvae ("spitfires")	Bifenthrin, cyfluthrin, maldison + petroleum oil, pyrethrins	Remove and dispose of twigs with groups of larvae.	
	Tiger moth	Bifenthrin, cyfluthrin, maldison + petroleum oil, pyrethrins	Encourage natural predators.	Avoid touching the irritating body hair.
White cedar moth	Bifenthrin, cyfluthrin	Wrap trunk with hessian to create a hiding place, then remove and dispose of caterpillars.	Avoid touching the irritating body hair.	



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FRUIT FLIES	Mediterranean fruit fly (Medfly)	Spinosad	Collect infested fruit and soak in water under a layer of kerosene for at least four days before disposing of it.	Splash-baits are less successful than cover spray but cover spray kills beneficial insects, so avoid if possible.
SLUGS AND SNAILS	Slugs and snails	Copper sulphate (repellent), iron phosphate, methiocarb, silicate salts + copper (baits)	Remove and dispose of. Sawdust or shell-grit barriers deter movement.	Try to use controls that are not toxic to children or animals.
LEAFMINERS	Leafminers	Paraffin oil	Remove and dispose of affected leaves.	Robust plants are better able to withstand attack.
APHIDS	Aphids	Bifenthrin, cyfluthrin, maldison + petroleum oil, paraffin oil, pyrethrins, natrasoap	Blast with a jet of water. Encourage natural predators. Remove ants.	
SCALES	Scales	Maldison + petroleum oil, paraffin oil	Encourage natural predators. Remove ants.	
MEALYBUGS	Mealybugs	Cyfluthrin, paraffin oil, natrasoap	Encourage natural predators. Remove ants.	
WHITEFLIES	Whiteflies	Bioallethrin + bioresmethrin, cyfluthrin, paraffin oil, pyrethrins, natrasoap	Remove plants that regularly host high populations.	Alternate chemicals to reduce resistance developing.
THRIPS	Thrips	Bifenthrin, cyfluthrin, diazinon, maldison + petroleum oil, pyrethrins, natrasoap	Encourage natural predators.	
BUGS	Azalea lace bugs	Cyfluthrin, imidacloprid	Encourage natural predators.	
	Crusader bugs	Cyfluthrin, imidacloprid	Encourage natural predators. Remove weeds.	Avoid touching the fluid that these bugs eject as it is an irritant.
	Green vegetable bugs	Cyfluthrin, imidacloprid	Encourage natural predators. Remove weeds.	
MITES	Two-spotted mites	Bioallethrin + bioresmethrin, bifenthrin, dicofol, paraffin oil, natrasoap	Encourage natural predators. Remove and dispose of badly infested plants.	
COCKROACHES	Cockroaches	Alpha-cypermethrin, cypermethrin, deltamethrin, permethrin	Avoid leaving food and water exposed; encourage natural predators.	
MILLIPEDES	Portuguese millipedes	Chlorpyriphos, cyfluthrin, propoxur	Smooth vertical barriers prevent entry to houses; wide vinyl tape makes a temporary barrier.	Unlike most other millipedes, these are attracted to house lights at night.



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ANTS AND TERMITES	Ants	Chemical control depends on the species	Indoors, avoid leaving food and water exposed. Outdoors, wet the nests.	Send samples to PaDIS for identification and recommended chemical control.
BEES AND WASPS	Bees		No control is needed.	Never try to remove bees yourself; call a licensed bee operator.
ANIMALS	Rats and mice		Trapping is the preferred method.	Avoid poisons as rats and mice may die in inaccessible places and smell.
FUNGAL DISEASES	Black spot	Chlorothalonil, tau-fluvalinate, triforine	Reduce humidity.	
	Dollar spot	Chlorothalonil	Reduce humidity. Keep lawn fairly short, free of thatch, and well-fertilised.	Alternate fungicides to prevent resistance developing.
	Spring dead spot	Chlorothalonil, iprodione	Avoid mowing grass too short.	Alternate fungicides to prevent resistance developing.
	Downy mildew	Furalaxyl, phosphorous acid	Reduce humidity.	High humidity locations encourage fungal disease.
	Powdery mildew	Triforine		Reducing humidity helps, but powdery mildew can exist in dry conditions also.
	Leaf curl	Copper hydroxide, copper oxychloride		Apply copper spray at bud-swelling.
	Moulds	Mancozeb	Reduce humidity.	
WEEDS	Bindii	Bromoxynil + MCPA	Remove whole root to avoid regrowth.	Seeds form between spring and summer.



Specimen identification requirements

When sending or delivering samples, the following information is required:

- Collector's name, location (where the specimen was found), full address, telephone number and e-mail address, description of the damage and date collected.

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