

Safety & Pesticides

Pesticides are often used to protect our homes and gardens from invading pests. However, the long-term effects on the environment are unknown, as are the health risks to the user. Heavy reliance on harsh chemical pesticides can be avoided by using the many 'alternative' pest control measures that are available to us.



Just because a pesticide is readily available on the market does not indicate that it is entirely "safe". All chemical pesticides can be extremely toxic if used improperly. Residues from pesticides can remain in our gardens and homes for months or years.

Therefore, whenever possible consider your options: use less toxic or non-toxic products to control your pest problems. Use the following information to assist you in controlling your garden pest problems whilst minimizing your exposure to pesticides and protecting the environment.

The safest and easiest way to control garden pests is to follow these steps:

1. Examine your garden regularly to identify pest problems before they escalate.
2. Correctly identify the pest problem (*keep in mind that some insects in the garden are beneficial*).
3. Choose a non-chemical option to control the problem whenever possible.
4. Only use chemicals when absolutely no other option is available. Follow all safety information. Make sure to use the RIGHT pesticide, in the RIGHT place, at the RIGHT dose.



Ornamental/Vegetable Pests

APHIDS



IDENTIFICATION: Black, green or golden in colour, soft bodied-up to 2mm in size. Usually clustered together in large groups- especially at soft new growth of plants.

Feed on plant sap. Damage is often noticed by twisting and curling of leaves.

CONTROL: Prune out and destroy affected areas or use a jet of water to blast aphids off the stem. A soapy water or oil spray will also kill aphids.

MEALYBUGS



IDENTIFICATION: Soft-bodied, white, oval-shaped insect that feeds on plant juices. Produces white, wax-like substance to protect itself against predators. Often found clustered together which gives the appearance of a white fungus. Found in many protected places on plants.

CONTROL: Prune out and destroy affected areas or use a jet of water to blast mealybugs off the stem. Soapy water or an oil spray will also kill mealybugs. On small plants such as orchids, alcohol on a Q-tip can remove mealybugs.

SCALE INSECTS



IDENTIFICATION: Can be soft or hard bodied. Vary in colour, shape and size but often resemble dark brown or beige bumps on plant stems or near leaf veins. Can also be green or almost transparent and are often oval in shape. Often associated with ants feeding on the secretions of this insect.

CONTROL: Prune out and destroy affected areas. Larger scale can be scrubbed or scraped off stems. A soapy water or oil spray will also kill scales.

MITES



IDENTIFICATION: Not often visible by eye. Clusters of mites or their damage may become evident. Mites scrape at leaf surfaces causing bronzing and pale speckled patches. Mites are often found on the underside of leaves but damage can be evident on upper sides. May be associated with fine webbing.

CONTROL: Scout plants regularly to locate mite infestations early. If isolated, prune off affected leaves. Apply light oil sprays at regular intervals to plants affected by mites. Most home garden mite problems do not warrant control if plant is kept healthy.

WHITEFLY



IDENTIFICATION: Small (2mm) white-winged plant juice sucking insects. Resemble miniature moths. Found on underside of leaves. Fly away easily when disturbed off plant. Immature stage is always found on the underside of the leaf, tiny, oval, clear to yellow in colour and does not move.

CONTROL: Most plants can tolerate a moderate level of whitefly infestation. Prune out and destroy affected areas. A soapy water or oil spray will also kill this pest. Whiteflies are attracted to the colour yellow, so hang sticky yellow traps near affected areas to reduce the pest population.

CATERPILLARS



IDENTIFICATION: These are the soft larvae of adult moths or butterflies. They vary in size and colour. Damage can be noticed by holes in leaves and small pellet like droppings on lower parts of plants.

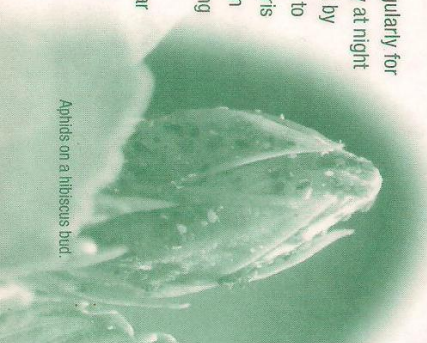
CONTROL: Examine plants regularly for caterpillar damage, especially at night when caterpillars are active. Hand pick and destroy caterpillars. Learn to identify an egg batch. Remove and destroy. Prune out small caterpillars if clustered together. Protect young seedling stems with clear plastic "collars" made from water bottles. Use non-toxic pesticides like Dipel or Thuricide.

SNAILS AND SLUGS



IDENTIFICATION: Very recognizable by large shell (snail) or shell-less (slug). Has a soft, shiny body which often leaves a shiny slime trail. Eats ragged holes in leaves.

CONTROL: Examine plants regularly for slug/snail damage, especially at night when they are active. Collect by hand and destroy or use salt to eliminate them. Remove debris (rocks, leaves, wood) that can harbour slugs from surrounding area. Try placing a partially buried saucer of fresh beer near affected plants. Slugs/snails will be attracted and drown.



Aphids on a hibiscus bud.

Soapy Water Spray:

When mixing soap solutions, start with 1 teaspoon of pure soap (e.g. Ivory Liquid) per gallon of water. Try doubling the concentration if plants are undamaged and insect control is not satisfactory. All soap sprays, whether homemade or commercial, will damage plants if used repeatedly or mixed at high concentrations. Test a small area first.

Oil Sprays:

Purchase horticultural oil sprays from your plant nursery. Ensure that the spray makes contact with the insects as control is by suffocation.

Home Remedies:

Satisfactory insect control can be obtained from home-made recipes. For aphid, small caterpillar, mite and whitefly control try:

- **Garlic Oil Spray:** Soak 5 or 6 minced garlic cloves in 2 teaspoons of mineral oil for 24 hours. Slowly add 1 litre water with 1 teaspoon liquid soap mixed in. Store in glass jar. Use two tablespoons of mixture to 1 litre water. Test on small area of infested plant before use. Apply to affected areas.

- **Tomato Leaf Sprays:** Soak 1 to 2 cups of chopped or mashed tomato leaves in 2 cups water overnight. Strain and add two more cups of water to liquid and spray.

Similar sprays can be made from hot peppers, black pepper, ginger, cloves, fennel, citrus peels, onions, even cigarette butts... try your own recipe!

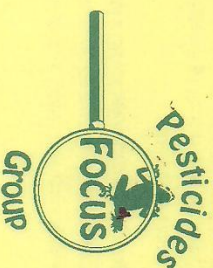


- **Get Creative:** Try cedar chips sprinkled on the lawn for chinch bugs, crushed egg shells and copper strips against slugs, or try planting herbs and garlic amongst your bedding plants to keep away aphids and mites.

**Consider your environment.
Don't immediately reach for the pesticide!**

The mission of the
Pesticides Focus Group is:
"To promote the safe and responsible
use of pesticides, and actively encourage
the use of alternatives, through the
implementation of new policies,
regulations and educational
programmes".

This brochure has been
produced by the



and funded by the
Bermuda Government,
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**Please use all pesticides safely.
Follow all instructions on the labels.**

The Pesticides Focus Group will not be liable
for the misuse of any of the suggested
pesticide alternatives.



Got Garden Pests?

An attractive garden with beautiful
shrubs and rainbows of flowering
plants is truly a sight to
behold. However, insects
and other garden pests
can drive even the
calmest gardener
to despair.

