MANAGING GARDEN PESTS
with integrated pest management

The intelligent approach to pest control

Integrated Pest Management — known as IPM — is the smart approach to managing garden pests. It uses observation, knowledge and thinking instead of the brute force of toxic chemical sprays.

IPM:

- reduces or eliminates the use of synthetic, toxic garden biocides (pesticides, herbicides, fungicides etc) that can affect the health of gardeners as well as natural systems
- reduces or eliminates the need to use natural insecticides
- reduces damage to our plants by insect pests without killing all the beneficial insects that help control the pests.

A knowledge-based practice

IPM:

- includes the use of observation, experience, experimentation, knowledge, information and the application of multiple techniques
- is based on **an understanding of garden ecology**; it takes into account the garden food web in which predatory insects feed on the pest insects that eat our plants; the problem with synthetic pest sprays — and some of the natural sprays — is that they kill both pests and predators
- focuses on pest **management**, not complete eradication. It is applied when pest infestation grows to such an extent it threatens the health of our plants
- can be applied to plant diseases and weeds but is most commonly used to deal with insect pests
- is based on an **understanding of** our garden and the processes going on in it such as the relationships between plants and animals
- may include the use of natural or botanical pesticides or herbicides as a last resort if there is severe infestation or weed invasion.

(left)... applying a botanical spray to control insect pest infestation in a community garden. (right)... gardeners check for insect pests.

Misuse a health hazard...

According the Paul Rogers (*Safer Pest Control*, 1997; Choice Books, Marrickville NSW), home owners use more pesticide per hectare than farmers, most home owners find difficulty interpreting information on the correct use of pesticides and a large number are unaware of the hazards or of the alternatives to chemical biocides.

He reports that 1990 figures disclose up to 25 million cases of pesticide poisoning each year around the world.

The potential for accidental poisoning by agricultural chemicals is greater where low literacy skills make it difficult for farmers to read instructions on the label of chemical containers.

Overuse of pesticides and herbicides also leads to the contamination of waterways.

IPM — THE TOOLKIT

KNOWLEDGE

Knowledge about both pest and beneficial insects helps in gaining an understanding of what is going on in our garden. Observation and accessing information, thinking and experimenting builds experience and knowledge.

DESIGN

- **species diversity** — plant a variety of plants to create habitat for small birds and insects
- **companion plants** — cluster plants with known beneficial effect on other plants
- **diversity of habitat** — provide ponds, rocks, logs to attracts predators of insect pests
- **healthy soil** — provides nutrients for healthy plant growth, use compost and mulching
- **design to reduce plant stress** — choose the plants to suit your climate and soils
- use **disease resistant varieties** suited to your climatic conditions
- use **chickens and ducks** to eat your pests and provide eggs.

PREVENTATIVE PRACTICE:

SELECT PEST AND DISEASE-FREE SEEDLINGS AND SEEDS

Host-resistant plants have been selectively bred to resist particular pests including insects and disease pathogens. Buy fruit trees grafted with disease resistant rootstock.

- buy seeds and seedlings known to be pest and disease resistent
- inspect plants given by other gardeners for pests and disease before planting.

GROW PLANTS ADAPTED TO YOUR CLIMATE AND SOIL CONDITIONS

Plants not adapted to climate and soils are unlikely to grow strong and healthy; because they may be weaker they are more susceptible to insect pest attack.
Non-adapted plants may include those grown outside their climatic range.

BIOLOGICAL MANAGEMENT STRATEGY

Create habitats in your garden design to encourage predatory insects and small birds that eat the pest insects by using flowering plants, shrubs, rocks, logs and water features.

CULTURAL MANAGEMENT STRATEGY

- **sanitation** — remove dead and diseased leaves, branches and fruit that could harbour pests and plant diseases
- **crop rotation** — moving different types of vegetable crops through a garden over time; this disrupts infestation by soil-borne diseases
- **mulching** — helps retain moisture in the soil; reduces weed growth; provided habitat for predators; reduces soil temperature extremes; reduces impact of rainfall and soil erosion; encourages microorganisms and breaks down into plant nutrients
- **decoys** — interplant to disguise plants; use decoy plants to attract insect pests away from other plants.

MECHANICAL AND PHYSICAL MANAGEMENT STRATEGY

- **barriers** — sawdust and sand for soft-bodied pests such as snails
- **bands** — placed around trunk and branches to deter insects such as codling moth
- **bags** — placed around trunk to deter crawling insects
- **traps** — placement of traps with attractant to capture insects, such as beer traps for snails; traps are useful in monitoring the incidence of pests in a garden
- **baits** — placement of containers containing attractants to draw pests away from garden
- **reflective mulch** — deters aphids
- **hand picking** — of some larger insects.

CHEMICAL MANAGEMENT STRATEGY

Botanical sprays include insecticides made from plant materials such as pyrethrum, garlic and chilli.
Botanical sprays, like synthetic insecticides, are generally indiscriminate in the insects they deter, killing beneficial predators as well as pest insects. This is why they are a last resort for use only when other controls fail or when insect pest infestation is so great that it risks greater damage to the garden.

Healthy soils, healthy plants...

Healthy soils produce healthy plants and healthy plants are more pest and disease resistant. That's why healthy soils form the basis of gardens with few pest problems.

This is true whether we grow food, exotic or native plants. Native plants may require different soil conditions than exotics, vegetables, herbs and fruit.

Maintain fertility by making plant fertiliser from our organic wastes:

- kitchen and garden wastes can be made into compost
- a variety of materials can be used to mulch our gardens
- vegetable gardens can be managed by crop rotation.

Attract predators...

Design your garden to attract predatory insects and small, insect-eating birds by including flowering plants, water and shrubs to protect the small birds from cats.

Flowers also provide habitat for pollinating insects such as bees:

- set aside the end of a garden bed for perennial and annual flowers
- plant garden borders and edges to flowers
- mix flowers with your vegetables.

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Text and photo by Russ Grayson and Fiona Campbell

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