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Dealing with pests and diseases in an organic garden

How are pests and diseases controlled in organic gardens?

There are five main techniques. The natural enemies of pests and diseases are encouraged by providing appropriate habitats for those enemies. Plants are provided with a balanced nutrient supply to maximise their natural defences. Crop rotation and mixed plantings (such as in a cottage garden) are used to prevent the build up of soil borne pests and diseases. Plants that are naturally pest and disease resistant are preferred. Pesticides are only used a last resort when all else has failed. Physical (non-chemical) control methods such as squashing and destruction of pest habitat are preferred.

Building habitat for the natural enemies of pests and diseases

Many natural enemies of pests and diseases, in their adult form, feed on nectar. They can be attracted to the garden by providing appropriate flowering plants. Organic gardens should contain several species of flowering plants. Small birds can also be very useful pest predators and usually require dense or prickly shrubs, which allow them to hide from larger birds. An appropriate birdbath will also attract birds to the garden. Lizards are useful predators of larger garden pests such as snails and slugs. Providing a pile of rocks or other hiding places will encourage lizards to take up residence in the garden.

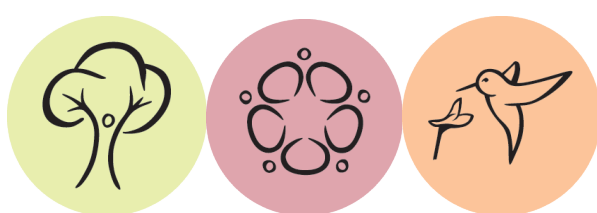
Maximising plants' natural defences

Plants and their pests and diseases have evolved together over many tens of millions of years. Plants have developed their own natural defences against pest and disease attack. To maximise the effectiveness of those defences plants require a balanced and adequate nutrient supply.

In an organic garden this is provided in the form of compost, which mimics the natural process of recycling plant nutrients from dead plants and making them available again to growing plants.

Crop rotation

Plant families grown in the same space year after year create an attractive habitat for soil borne diseases.



Organic pest management addresses many Permaculture Principles, including 'observe and interact', 'integrate rather than segregate' and 'use and value diversity'. Understanding your garden as an ecosystem means you can rely on a variety of plants and natural predators to keep pests to manageable levels.

Crop rotation disrupts the disease habitat and minimises the build up of soil borne pests and diseases.

Use of naturally pest and disease resistant plants

Many plants have a natural resistance to various pests and diseases. By choosing appropriate varieties many pest and disease problems can be avoided, such as using woolly aphid resistant apple root stock or grape phylloxera resistant root stock.

Physical (non-chemical) control methods

By careful monitoring the garden, problems can usually be avoided by physically controlling pests and diseases before they get out of hand. Often simply squashing pests and destroying their habitat when their population is small or pruning plants in the early stages of infection avoids the problem.

Pesticides of last resort

Pesticides are only used as a last resort when all other methods have failed. A wide variety of pesticides are available with a range of possible destructive effects. These destructive effects include upsetting the ecological balance of the garden and its environment by destroying large populations of the life within the garden ecosystems, particularly killing non-target insects such as the beneficial insects, which attack pests. Other effects include building up pesticide resistance within pests and disease causing organisms and building up pesticide concentrations in the environment and food chain and damaging the soil ecosystem upon which natural plant nutrient recycling depends. The organic gardener has to make an informed decision as to whether the risk of potential damage to the ecology of the garden and its

environment caused by pesticides justifies their use to save a crop or plant. It may be less damaging to sacrifice the crop or plant.

Integrated Pest Management

Integrated pest management is a strategy for managing the above pest and disease control techniques to maximise their effectiveness. Its main features are:

- it takes advantage of all available pest and disease control measures
- it aims to manage pest populations rather than eradicate them
- it works with and protects the ecology of the garden and its environment
- where last resort chemicals are used, they are used very selectively to minimise ecological damage and the build up of chemical resistance of pests and diseases.

It requires the gardener:

- to have a good knowledge of the pests and diseases which affect the garden
- to implement a monitoring strategy to be aware of any potential pest and disease problems before they develop
- to be aware of all possible pest and disease control methods
- to set thresholds on tolerable damage.

Summary

Organic pest and disease control aims to manage pests and diseases without jeopardising the ecological balance of the garden and its environment. It requires an understanding of the potential impacts on these ecosystems of any control methods used.



For further information on this topic contact

The Canberra Organic Growers Society

The Canberra Organic Growers Society was formed in 1977 with the aim of providing a forum for organic growers to exchange information and encourage the general public to adopt organic growing methods.

To contact the Canberra Organic Growers Society or find out more about courses and workshops visit their website at www.cogs.asn.au