



Botanical Resources
AUSTRALIA

Pyrethrum: Nature's Own Insecticide

Do moths get to your potatoes before you do? Do caterpillars enjoy your cabbage too much? Are your fruit trees a paradise for fruit fly, or do aphids attack your roses when they're looking their best? There are a great number of insecticides on the market today, each of which may claim to rid your garden and vegetable patch from most forms of unwanted insect pests. But how safe are they? Would you be confident spraying just 24 hours before picking fruit with the insecticide you currently use? With pyrethrum – nature's own insecticide – you can do just that.



What is pyrethrum?

Pyrethrum is a natural plant oil that occurs in the pyrethrum daisy, *Tanacetum cinerariaefolium*, a member of the chrysanthemum family. It is found mainly in the tiny oil-containing glands on the surface of the seed case in the tightly packed flower head, and is the plant's own insecticide that it has evolved over the centuries to keep insects away. Pyrethrum is made up of six complex chemical esters known as Pyrethrins which work in combination to repel and kill insects. To produce refined pyrethrum for use in insecticidal preparations, pyrethrum daisies are farmed on a large scale, and the flower heads are collected in a yearly harvest. A state-of-the-art, multi-step process follows, producing pure refined Pyrethrins – a concentrate of the insecticidal oil found in the glands of the flower head. It is these pure refined Pyrethrins that are formulated – usually together with a synergist – into water based insecticidal preparations for home and garden use.

How is pyrethrum different?

Pyrethrum is an unique insecticide in that, handled correctly, it is appropriate for use near humans and warm blooded animals, in gardens where children play and in environments that are sensitive for their wildlife value. Pyrethrum is comparatively non-toxic to warm blooded animals because it cannot be metabolized by them and does not enter the food chain, but is effective against a broad range of insect pests (see list below). Pyrethrum is also fast acting and non-persistent in the environment, breaking down quickly in sunlight, which makes it particularly suitable for use on fruit and vegetable crops. The insecticide is one of the few that is certified for use on Australian organic farms, and pyrethrum



is even safe enough to be used as a post harvest spray to protect a crop from insects on its way to market. In addition, because Pyrethrins are such complex and non-persistent chemicals, the incidence of insect resistance is extremely low.

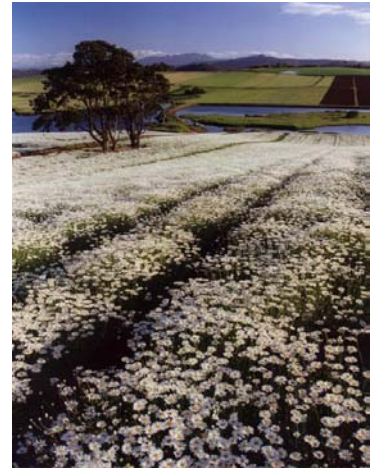


How does it work?

Pyrethrum affects the central nervous systems of all types of flying and crawling insects, blocking nerve junctions so that nervous impulses fail. In the lowest concentrations (0.005-0.1%) this affects insect behavior, producing a so-called avoidance reaction which results in insects fleeing the source of the chemicals. Importantly, pyrethrum induces abnormal behavior in female mosquitoes, leaving them disorientated and unable to seek their usual blood meals. At slightly greater concentrations (0.1-0.5%) Pyrethrins make insects lose normal behavioral patterns so that they abandon their usual hiding places and come out into the open, bringing them into contact with larger quantities of Pyrethrins which soon knock them down and kill them.

Tried and Tested

Pyrethrum's insecticidal properties have been known for thousands of years. Native to China, pyrethrum was traded along the Silk Route and powdered pyrethrum flowers were highly prized in Europe as "Persian Flea Powder" – a potion which relived the persistent insect itches of the ancient world. Today, pyrethrum flowers are farmed on a large scale mainly in East Africa and in the Australian inland state of Tasmania. Pyrethrum is a perennial plant that can produce flowers for harvest for up to five years. The daisies are in full bloom in the southern hemisphere summer, when the flower



heads are harvested and dried. A state-of-the-art, multi-step process follows, producing pure refined Pyrethrins – a concentrate of the natural insecticidal oil in the glands of the flower head. This oil is then formulated to clients' specifications and exported worldwide.

Pyrethrum is effective against more than 40 common garden insects including:

Ants	Lace bug	Pear slug
Aphids	Lawn beetle	Potato moth
Bean fly	Leaf borer	Pumpkin beetle
Cabbage moth	Leaf hopper	Scale insects
Cabbage white butterfly	Leaf miner	Thrips
Codling moth	Light brown apple moth	Wasps
Cut worm	Mealy bugs	White fly
Green vegetable bug	Mites	

Pyrethrum is a healthier and more environmentally aware way to keep insects away from fruit and vegetables and ornamentals. Fast acting, effective, an extract from nature – pyrethrum is the insecticide of the 21st Century.

For further information on pyrethrum see: www.botanicalra.com.au