

Natural Pyrethrum makes a comeback in crop insect control

After years of shortages, natural pyrethrum is back in favour with Organic growers. Conventional growers have also begun using it with good reason. It works!

If an insect can be hit by a droplet or three of the spray, they die.

In minutes.

There is virtually no residue, other than overnight if the crop is sprayed late in the day. This is because ultra violet light degrades it rapidly. A couple of hours of sun and it is gone. There is only a 1-day withholding period set by the National Registration Authority.

Perhaps because of the complexity of the molecule and maybe because of the combination with the synergist piperonyl butoxide, natural pyrethrum does not seem to be challenged by resistance like most other insecticides.

Cost

The use of piperonyl butoxide (PBO) in combination with natural pyrethrum was approved by organic certifiers just over a year ago. In theoretical terms, if it took a level of say 10 to kill an insect with straight pyrethrum, when PBO is added the level required drops to say, 2-3, which lowers the cost very significantly.

For instance, a 15 litre knapsack full costs about \$3. And, a 1000 litre tank costs about \$110.

It doesn't take much mental arithmetic to work out if the crop area you can treat with 1000 litres will produce an extra \$100 worth of harvest once the insects have been eliminated. Even if you have to do the crop twice, the benefits should far outweigh the costs.

Examples

A tomato grower at Bangalow on the NSW North Coast had so much trouble with whitefly he was almost considering turning his 'igloo' into a machinery shed. He'd pulled out a couple of rows of tomatoes and the ones still struggling were about half the size (bush and fruit) of those growing outside just 20 metres away. About \$50 worth of Py-Bo turned the situation around.

A linseed crop on the Darling downs was under stress from lack of rain and consequently the heliothis caterpillars were devouring around 5% of what heads were left overnight. For just under \$15/ha he was able to eliminate the pests within an hour or so and get a harvest instead of ploughing it in.

Heliothis, monoleptas and loopers were all attacking a crop of soybeans and had destroyed flowers and pods. Boom-sprayed at 400 litres per hectare, the insects were killed. Luckily, secondary flowering did occur and a yield of around 2 tonne/ha was taken off. Not as good as 3-4 tonne, but very worthwhile under the circumstances.

Olives at Texas in Queensland were being sucked dry by lacebugs to the extent the leaves were not doing the photosynthesis job to fill out the fruit. Instead of a crop worth between \$20-\$30 a tree the grower was only expecting around \$10 a tree. Using a 1500 litre tank and orchard blower, he treated over 2000 trees at 1.7 litres a tree... 22.5 cents each tree. He followed up second spray about 5 weeks later and this should see him through.

Avocado trees have been treated with orchard blowers using around 4 litres a tree... 55 cents... to control fruit spotting bugs and monoleptas.

Broccoli, basil, lettuce, tomatoes, capsicum, melons and pumpkins are attacked by anything from aphids, thrips, bugs, caterpillars of various sorts and grasshoppers. Treatment by knapsack (\$3 a fill) or boom spraying has killed pest populations in minutes. If necessary, fruit and vegetables can be harvested the morning after the evening spray.

Compatibility

Growers who use a foliar fertiliser can confidently mix the fertiliser and the Py-Bo together and save application costs.

As usual, mix up only as much as is needed to do the job. It's not good policy to apply solution kept overnight without adding more concentrate.

The concentrate will keep for years in its black bottle and stored in the shed.

Beneficials

Pyrethrum does not discriminate. However, bees and parasitic wasps are repelled by very low levels of pyrethrum. They will not come near a treated crop until the pyrethrum is indiscernible... later the day after treatment.

If a crop is severely attacked and the grower's pocket is threatened, there is no hope that ladybirds, wasps, assassin bugs, fungus or bacteria are going to make a significant difference in time to save the situation. This is where the organic and conventional growers must make a judgement. "Last resort" is decision is sometimes left too late. None of the growers mentioned above will wait so long next time.

Safety

Pyrethrum is of very low threat to mammals because it is detoxified so rapidly in warm-blooded systems. Centuries ago the Chinese used it as a treatment for stomach worms. It was dusted all over troops and prisoners in the second world war to kill fleas and lice and reduce typhus.

Not that you should ignore all forms of protection and common sense. If you handle the concentrate or the spray and then touch your lips, nasal membranes or eyes, there will be a numbness and some discomfort. It makes

some people sneeze. If you are driving an open tractor, at least wear a face and nose mask to stop inhaling the fine droplets. Wash with soap and water when finished.

Wheredoyagettit?

The pyrethrum/pbo combination is available in most garden shops and some grower's co-ops. Many of them are 4g/L pyrethrum. Pestech Australia sell an 80g/L formulation (20 times stronger and at a 1:6 ratio) especially for serious growers. The registered rate of dilution is 1 ml per litre of water and the treatment costs and examples given in this article are based on their product called Py-Bo.

Are you contemplating going Organic?

The market for organic produce is increasing. Local and export opportunities are encouraging.

But what about the insects?

Will you be able to harvest a crop worth selling?

This article should reassure you that you can control crop pests.

The basic premise of sustainable, organic fruit and vegetable production is that once you get the soil nutrition right, the plant is so healthy it can shake off insect attack. And, this is true up to a point.

As always, the weather can change things around. Once a plant is in stress, insect pest populations seem to explode in a matter of days. The beneficials can't keep up and your crop and income both wilt.

If you are contemplating the change to Organic and you know the soil nutritional level will take some time to get right, it can be comforting to know there is an insecticide that is an approved input which will deliver immediate control if things look like getting out of hand. Obviously it does not compromise your conversion if fully certified growers use it.

Organic growers of many years experience also know there are times when extra insect and mite control is needed. They look at Py-Bo as a reliable input to protect their output.