

Implementing IPM on farm - Experiences from leading growers

Peter Schreurs and Sons, Devon Meadows VIC

**Integrated
Crop Protection**
PROTECTING CROPS

Key Messages

- Adoption of an IPM approach on Peter Schreurs and Sons farm was triggered by a two-spotted mite problem in their leek and parsnip crops
- The Schreurs trialed predatory mite, persimilis, to control two-spotted mite in a fish tank, before being comfortable to test the approach on a leek crop in field
- Having not used insecticides on their leek crop for the past 15 years, the Schreurs can see the results in the quality of their produce and reputation with buyers
- The Schreurs have adopted companion plantings, including native trees and shrubs, to provide better habitat for beneficial insects
- Better customer awareness around IPM and the benefit of fresh produce sold with no chemical residues is needed

Peter Schreurs and Sons grow a range of vegetable crops on their 180 hectare farm in Devon Meadows near Cranbourne in Victoria. Leeks are the main crop in the business, but they also produce cos lettuce, endive, kohlrabi, wombok and radicchio.

On the farm, Darren Schreurs is responsible for controlling pest and disease in the crops. Darren first encountered Integrated Pest Management (IPM) when he was trying to deal with mites and thrips in their leek crop.

Darren recalls, “before we moved to using IPM, we had a set insecticide spray program for control of insect pests. We used broad-spectrum insecticides, which killed all insects, so in theory we should have had clean crops with no insects.”

In the 1990's the Schreurs had a problem with two-spotted mite in their leek and parsnip crops.

“We had been rotating our chemicals making sure we were using different chemical groups, so as to not cause resistance to one chemical, but this was not working. The two-spotted mite had built up resistance to whatever we hit them with and were building in numbers.”

Not liking the idea of continuous use of dangerous chemicals for health reasons, and having no success in controlling pests, the Schreurs needed an alternative.

Fellow grower Tom Schreurs (of J. & J.M. Schreurs & Sons – and no relation!) advised Darren to talk with Dr Paul Horne of IPM Technologies.

“Paul came in 2000 to have a look at the problem we were having with the two-spotted mite and immediately advised us to stop spraying insecticides. This was unprecedented advice, as for decades we had relied on spraying chemicals to control pests – and with IPM we would not be spraying at all.

Paul explained to us how a predator mite, called persimilis, fed on two-spotted mite. By allowing the persimilis to live in the crop, they would control the two-spotted mite.



Two Spotted Mite, *Tetranychus urticae* (L) can be successfully managed with the predatory mite *Phytoseiulus persimilis* (R)

Photo Credit: Planet Natural, 2016

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“We feel that with more awareness of what IPM is, customers will understand that finding a ladybird or a brown lacewing in your lettuce is not a bad thing, in fact, this is a sign of no chemical residues.”

“We were sceptical, and had to try a small-scale experiment (in a fish tank) to see what would happen. After 18 days the persimilis had eaten all of the two-spotted mite.”

Darren replicated the fish tank trial in the field with a leek crop. Darren closely monitored the crop, a little nervously he admits, but after 4 weeks could not find a single two-spotted mite in their leek crop.

Darren recalls the realization that there was more to pest management than just spraying chemicals.

“If we could understand more about what is happening in the insect world we may then possibly understand how to control them naturally.”

Following the experience with the leek crop, Darren built up the courage and experience to apply IPM to all their crops.

“By 2001 we had all of our crop pests being controlled using IPM. The IPM approach was highly successful and well over a decade later IPM remains the mainstay of pest control on all our crops, not just leeks.”

Since adopting an IPM approach to dealing with pests, Darren has not applied a single insecticide on his leek crops in the last 15 years. The leeks grown on the farm include exports to Japan, and the lack of insecticide applications has been noted as an advantage when dealing with buyers, but the main factor is the high quality of the leeks.

“IPM is a long-term sustainable way of controlling pests. Since using IPM it has led us to having a greater understanding of how nature works and how our actions on the farm impact the environment around. We have a much broader view of our farm now, which has led us to start a number of other sustainability initiatives.”

Further Information:

To hear Peter Schreurs talk about the benefit of lacewings to control aphids and mites on his lettuce crop, have a look at this short video: <https://www.youtube.com/watch?v=5HQWeSO8xlw>

Challenges and the Future

To encourage more beneficial insects on the farm, Peter Schreurs and Sons are planting more native trees and shrubs that flower during different times of the year. These plantings provide a food source and habitat to some beneficial insect species in-between seasons of the commercial crops. The Schreurs have also started growing crops such as rye corn in the ground, side by side with lettuce. The rye corn attracts grass feeding aphids that provide food for a large number of predator insects, which once bred up, move into the lettuce crop controlling aphids such as currant-lettuce aphid.

One of the problems the Schreurs have had in using IPM is that they cannot guarantee their marketed produce is insect free. Using beneficial insects to protect crops means insects are present throughout crop production. Despite having very thorough washing systems in place before any produce is packed and dispatched there may still be some beneficial insects present in produce sold.



Currant-lettuce aphid, *Nasonovia ribis-nigri*
Photo Credit: Lionel Hill, DPIWE, Tasmania

“It has been a challenge dealing with some of our customers, in particular exported products, to be able to meet the criteria of no presence of insects” Darren notes.

“We feel that with more awareness of what IPM is, customers will understand that finding a ladybird or a brown lacewing in your lettuce is not a bad thing, and in fact, they may be more comfortable in knowing that this is a sign of no chemical residues inhibiting any insect activity.”