Technote

TomatoesNZ

Off-label use of Mit E Mec® and ParaMite® for russet mite control in Greenhouse Tomatoes

Key Information

- Mit E Mec® and ParaMite® may provide russet mite control, especially in the early stages of mite infestation.
- Both products should be used in combination with IPM approaches, including greenhouse hygiene.
- Preharvest intervals are recommended.
- Mit E Mec® and ParaMite® are in different mode of action groups, however Mit E Mec® is in the same resistance group as Avid®.
- Make no more than two applications of Mite E Mec®, and no more than one application of ParaMite®.
- Observe the maximum per hectare application rate for ParaMite®.

Background

As the name suggests, Tomato russet mite (*Aculops lycopersici*) causes russeting and bronzing of tomato leaves and fruit. The mites are tiny and it is usually the symptoms that are first noticed. Further information can be found on the TomatoesNZ Russet Mite Action Card.

At present, the only registered use claim for Tomato russet mite control in greenhouse tomatoes is Avid® (abamectin, IRAC Group 6). To assist growers to access and use new agrichemicals for Tomato russet mite control, Tomatoes NZ carried out trials through the A Lighter Touch programme to recommend appropriate pre harvest intervals (PHIs) to meet the default Maximum Residue Levels (MRLs) for Mit E Mec® and ParaMite® in greenhouse tomatoes.

This Technote summarises the results of this research, and provides guidance on the off-label use pattern of Mit E Mec® and ParaMite® that will result in residues that do not exceed the New Zealand default MRL of 0.1 mg/kg.

Description of the insecticide products

Mit E Mec® is a Group 6 insecticide containing 9.3g/ litre milbemectin in the form of an emulsifiable concentrate. It is not registered for use on tomatoes, but may be used off-label. Mit E Mec® is registered in New Zealand for control of two-spotted mite, six-spotted mite, European red mite, and other mites on fruit or ornamental crops. Mit E Mec® is not systemic but quickly moves into young leaves from where it is taken up by feeding and remains active for several weeks. Mit E Mec® takes about 14 days for maximum mite control. Refer to the label for further information on application[1].

ParaMite® is an insect growth regulator containing 110 g/L etoxazole in the form of a suspension concentrate. It is not registered for use on tomatoes, but may be used off-label. ParaMite® is registered for control of Two-spotted mite, Six-spotted mite, and European Red mite on some fruit crops. ParaMite® has translaminar activity and is effective on mite crawlers, where control may last for 4-5 weeks. Adult mites are not controlled. Refer to the label for further information on application[2].

The NZ Environmental Protection Agency has established controls on the use of ParaMite®.

- The maximum number of applications is one per year.
- The maximum application rate is no more than 1.05 L product per hectare.
- Ground based applications only.

[1] *Mit E Mec label*
[2] *ParaMite label*

Guidance for Off-label Use of Mit E Mec® and ParaMite®

Growers should follow NZGAP's Guideline for Growers whenever using agrichemicals off-label (https://www.nzgap.co.nz/NZGAP_Public/Growers/Guidelines.aspx).

Both Mit E Mec® and ParaMite® may be used off-label, however growers should check with their customers (supermarkets, marketing companies etc.) in case they have rules against off-label use.

Product	Rate	Use pattern and controls
Mit E Mec® (9.3g/ litre milbemectin) Group 6	75 ml Mit E Mec®/ 100 litres of water.	• Maximum of 2 applications with a minimum spray interval of 10 days. Should not be applied in 2 consecutive sprays within or between seasons or crops without a product from a different resistance group being used in between. • Apply the final spray no later than 1 day before harvest. • Observe label directions regarding bees.
ParaMite® (110 g/litre etoxazole) Group 10B	35ml ParaMite® / 100 litres of water.	• Maximum of 1 application per year. • Apply the spray no later than 7 days before harvest. • DO NOT exceed the application rate – the maximum application rate[1] is 1.05 litres of ParaMite®/ha (or 121.6 g ai/ha).

Resistance Management

Follow the resistance management guidelines on the product labels. Be aware that Avid® and Mit E Mec® are both Group 6 insecticides, so should be managed as a group and alternated with products in other groups, such as ParaMite® (Group 10B). Mit E Mec® should not be applied in 2 consecutive sprays within or between seasons or crops without a product from a different resistance group being used in between. Refer also to the NZ Plant Protection Society resistance management guidelines and Integrated Pest management guidelines such as the Tomatoes NZ Russet Mite Action Card[3].

Residue testing

The residue trial for this project was unreplicated and carried out in one greenhouse on a single cherry tomato variety. Based on the results of these trials, and evaluation of other published information, we expect that two applications of Mit E Mec® at a 10-day interval, with a final spray application 1 day before harvest will result in residues below the default New Zealand MRL of 0.1mg/kg. We also expect that a single application of ParaMite® 7 days before harvest will result in residues below the New Zealand default MRL.

However, we recommend that growers regularly undertake residue testing to ensure that their fruit remains compliant with the required MRLs. We also recommend that crop safety tests are carried out by growers on a small crop area before wider application.

Any residue exceeding the relevant MRL should be notified to Tomatoes NZ so that this information can then be added to the knowledge base.

[3] *https://www.tomatoesnz.co.nz/dmsdocument/393-russet-mite*