



Agriculture & Horticulture
DEVELOPMENT BOARD



Grower Summary

SF 125

Evaluation of foliar sprays of
acaricides for control of
tarsonemid mite in strawberry

Annual 2012

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Use of pesticides

Only officially approved pesticides may be used in the UK. Approvals are normally granted only in relation to individual products and for specified uses. It is an offence to use non-approved products or to use approved products in a manner that does not comply with the statutory conditions of use, except where the crop or situation is the subject of an off-label extension of use.

Before using all pesticides check the approval status and conditions of use.

Read the label before use: use pesticides safely.

Further information

If you would like a copy of the full report, please email the HDC office (hdc@hdc.ahdb.org.uk), quoting your HDC number, alternatively contact the HDC at the address below.

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HDC is a division of the Agriculture and Horticulture Development Board.

Project Number:	SF 125
Project Title:	Evaluation of foliar sprays of acaricides for control of tarsonemid mite in strawberry
Project Leader:	Professor Jerry Cross
Contractor:	East Malling Research
Industry Representative:	Seth Walpole, R W Walpole & Partners
Report:	Annual 2012
Publication Date:	16th July 2012
Previous report/(s):	None
Start Date:	1st April 2011
End Date:	31st March 2013
Project Cost:	£29,230

Headline

Due to poor establishment of tarsonemid mite in this project, no conclusions could be drawn from the first year's work.

Background and expected deliverables

The tarsonemid mite, *Phytonemus (Tarsonemus) pallidus* ssp. *fragariae*, sometimes called the strawberry mite, is a serious pest of strawberry. It feeds mainly on the upper surfaces of the young folded leaves of strawberry, making their surfaces rough and crinkled as they expand. Sometimes the leaves turn brown and die and the whole plant usually becomes stunted. Mites also feed in the flowers and fruits, seriously affecting yield and quality which can halt berry production.

There has been a significant and threatening increase in the frequency and severity of attacks in UK strawberry production in the last few years and the problem was particularly bad in 2010 and threatens to get worse.

The fact that most acaricides are contact acting with no or at best limited translaminar activity makes it difficult to gain control of the mite. Although readily controlled when directly intercepted by an acaricide, spray penetration in to the young folded leaves where the tarsonemid mites live and breed can be limited, and this further reduces control efficacy. Furthermore, strawberry leaves are waxy and covered in hairs, and many products are not specifically formulated for the crop and have insufficient wetting properties. Work by EMR in HDC project SF 79 clearly demonstrated substantive improvements in the efficacy of abamectin (Dynamec) when admixed with a silicone wetter.

There is a clear need to identify new, more effective spray treatments for tarsonemid mite. Ideally, these need to be compatible with biocontrol agents as well as being safe to plants, the environment and humans.

The overall objective of this trial was to identify new effective acaricide treatments for control of strawberry tarsonemid mite in propagation and/or fruiting crops.

Summary of the project and main conclusions

In the first year of the project, tarsonemid mite populations on the strawberry plants failed to build up to more than a few per leaflet, despite repeated attempts at artificial infestation. As a result of this problem in 2011, few results and conclusions could be drawn on the efficacy of the control measures applied. The project will continue in 2012 when it is hoped that artificial infestation will be more successful on a different strawberry variety.

The populations of tarsonemid mite failed to develop sufficiently to show any differences between the treatments applied and the untreated control. The multiple infestations of the plots should have resulted in very high mite populations. A possible explanation is low susceptibility of the variety Evie 2 to strawberry tarsonemid mite (the cultivar used for the trial). It has generally been considered that all strawberry varieties are highly susceptible to strawberry tarsonemid mite. However, new strawberry varieties have recently been bred in Russia with good resistance to strawberry tarsonemid mite, using the variety Spasskaya as a source of resistance. It is therefore possible that there is considerable variation in susceptibility to strawberry tarsonemid mite of cultivars commonly grown in the UK, and that this variation is not appreciated and has not been quantified. A low susceptibility of Evie 2 would explain the difficulty in establishing strawberry tarsonemid mite populations on it, despite repeated attempts, a problem which had not been encountered previously. Predatory mites might have been another contributory factor but they were present only in low numbers.

Financial benefits

Strawberry tarsonemid mite can cause devastating crop losses in highly valuable protected strawberry crops. Losses exceed £10,000 per ha per annum in some instances. New effective chemical treatments for control typically cost <£100 per ha per application, so the cost benefit ratio of any new acaricide treatment is likely to be very high and will benefit UK strawberry propagators and fruit producers.

Action points for growers

- There are no grower action points arising from this project thus far, but growers will benefit from good crop hygiene, regular crop inspections, early applications of predatory mites and the use of Dynamec with a silicone wetter when necessary.