Grower Summary

SF 141

Efficacy of insecticides, times using the blackberry leaf midge sex pheromone trap, to control the pest on raspberry

Annual 2014

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The results and conclusions in this report may be based on an investigation conducted over one year. Therefore, care must be taken with the interpretation of the results.

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.

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

Project Number:	SF 141
Project Title:	Efficacy of insecticides, times using the blackberry leaf midge sex pheromone trap, to control the pest on raspberry
Project Leader:	Michelle Fountain, East Malling Research, Kent, ME19 6BJ
Contractor/(s):	East Malling Research
Industry Representative:	Salih Hodzov W B Chambers and Son
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Further information

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

HDC,
AHDB
Stoneleigh Park
Kenilworth
Warwickshire
CV8 2TL

Tel – 0247 669 2051

GROWER SUMMARY

Headline

Early applications of chlorpyrifos or deltamethrin, timed using sex pheromone monitoring traps, reduced levels of damage by blackberry leaf midge

Background and expected deliverables

Blackberry leaf midge (*Dasineura plicatrix*), not only attacks blackberry and loganberry, but is an increasing problem in raspberry under polythene, with up to four generations per year. Adult midges are so small that they are difficult to detect. It is therefore difficult to time sprays effectively to coincide with the first generation and prevent galling, which results in stunting of cane growth and subsequent loss of yield. The most effective time to spray is at egg laying/egg hatch when the larvae are most vulnerable. The newly developed blackberry leaf midge sex pheromone trap is now available commercially for monitoring blackberry leaf midge emergence, but the timing of the sprays has not been investigated. This project aims to find the most effective timing of sprays in year one (this report) and screen a range of approved products for blackberry leaf midge control in protected raspberry (subsequent years).

Summary of the project and main conclusions

A replicated field trial was conducted to examine the effects of single applications of chlorpyrifos or deltamethrin to control blackberry leaf midge. The sprays were applied 1, 3, 7 and 14 days after a sex pheromone trap catch of 10 male midges per trap per week was exceeded. The 1, 3 and 7 day applications of both insecticides reduced the numbers of larvae and the resultant leaf galling.

Blackberry leaf midge sex pheromone monitoring traps proved a useful tool for timing applications of chlorpyrifos and deltamethrin. Early applications (within 7 days of the trap threshold of 10 midges per trap being exceeded) gave good levels of control of blackberry leaf midge in raspberry crops. Where applications were made more than 7 days after the threshold was exceeded, control of midge larvae and subsequent leaf damage was reduced resulting in higher numbers of larvae and resultant galling of leaves.

Financial benefits

A leading grower estimated that attacks of blackberry leaf midge could reduce blackberry yield by 10% which would lead to losses of up to £3,000 per ha on a typical 15t/ha crop. The pest is more serious on raspberry and can cause 60% loss in cane height in some modern primocane varieties. If the pest was not controlled and this occurred, 40% crop losses could be expected, amounting to a loss of £12,000 per ha.

Action points for growers

- Sex pheromone traps for blackberry leaf curling midge are commercially available and should be used to monitor midge populations in vulnerable raspberry and blackberry crops to improve the timing of insecticide applications.
- Traps should be checked at least every 7 days, but twice weekly is recommended for the first generation, to give a larger window of opportunity to apply plant protection products.
- Chlorpyrifos and deltamethrin both provide effective control but they are broad spectrum and have persistent adverse effects on natural enemies and biocontrol agents including *Phytoseiulus persimilis*.
- Effective insecticides should be applied within 7 days of a trap catch of 10 midges per trap and targeted at the emerging primocane leaf tips.
- Product label recommendations should be followed.