



Agriculture & Horticulture
DEVELOPMENT BOARD



Grower Summary

CP 073

The Role of Chemicals in the
Location of Host Plants by
Midge Pests of UK Fruit Crops.

Annual 2011

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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: CP 073

Project Title: The Role of Chemicals in the Location of Host Plants by Midge Pests of UK Fruit Crops.

Project Leader: Professor David Hall

Contractor: Natural Resources Institute

Industry Representative: Nigel Kitney/Tom Maynard

Report: Annual Report 2011

Publication Date:

Previous report/(s): N/A

Start Date: 01 Feb 2011

End Date: 30 November 2013

Project Cost: £64,650

Headline

Experiments have started to identify attractants for female raspberry cane midge.

Background and expected deliverables

Species of gall midge (Diptera: Cecidomyiidae) are important pests of many horticultural crops and are often very difficult to control by conventional means. NRI and EMR have made considerable progress in identification of female sex pheromones in this group of insects, and some are now in use for monitoring populations of several pest species. However, the female-produced sex pheromones attract only males. Attractants for the females, particularly mated females, would potentially be far more valuable for both monitoring and control of the pests. There is good evidence in several species of midge that mated females are attracted to their host plants for oviposition by specific odours from the plants. Although this has been known for over 40 years in some cases, the chemicals responsible for this attraction have not yet been identified.

This project will aim to identify the chemicals responsible for attraction of mated female midges to oviposition sites on their host crop for up to three species which are important pests of soft fruit and tree crops in the UK and where such attraction has been demonstrated previously. These are the raspberry cane midge, *Resseliella theobaldii*, the blackcurrant leaf midge, *Dasineura tetensii*, and the apple leaf midge, *D. mali*. Once the chemicals responsible have been identified and synthesised it may be possible to use synthetic lures for monitoring and controlling pest species.

Summary of the project and main conclusions

Work has begun on attractants for female raspberry cane midge. Observations have been made in growers' fields confirming attraction of female midges to split raspberry canes. Trapping experiments have been carried out with four different designs of trap baited with synthetic and natural lures. Horizontal or vertical sticky card traps caught more midges than delta traps, and water traps performed poorly. Catches of female midges were very low. Catches of male midges were higher, but there were no significant differences in numbers attracted to the unbaited traps and to those baited with either the synthetic or natural lures.

Midge larvae and pupae have been collected for further work during the winter using laboratory bioassays and electroantennography.

Financial benefits

- There are none to date

Action points for growers

None have yet been identified.