New Project

BOF 75

Novel insecticide treatments to control large narcissus fly

Project Number:	BOF 75
Project Title:	Novel insecticide treatments to control large narcissus fly
Project Leader:	Rosemary Collier
Contractor:	University of Warwick
Industry Representative:	Mr Adrian Jansen Lingarden Bulbs Ltd
Start Date:	1st February 2012
End Date:	30th April 2013
Project Cost:	£12,236

SUBJECT TO CONTRACT

Project Summary:

The large narcissus fly (*Merodon equestris*) is the most important pest insect of narcissus crops in the UK. The larvae feed and grow inside the bulbs. Exports to both EU and non-EU countries are essential to the economy of the bulb industry. Narcissus fly infestation levels as low as 1% may jeopardise the export of bulbs. Current control measures are nowhere near 100% effective, and the control strategy uses just one pesticide, chlorpyrifos, which is unpleasant to use, is used in hot-water treatment, and may not be available in the longer term. In England the narcissus crop covers around 4000 hectares, over 40% of which is grown in south-west England, with an additional several hundred hectares in Scotland and Jersey or grown for galanthamine extraction. Traditionally, Cornwall and the Isles of Scilly have been thought of as the areas most affected by the pest, due to a warmer climate and closer rotations. However, narcissus fly infestations can also occur in eastern England and Scotland. Narcissus crops remain in the soil for two or sometimes more seasons, which means that they are exposed to two or more periods of infestation by the narcissus fly. The reason for submitting the proposal at this

time is that large narcissus fly was a problem with bulbs harvested in 2011 (and also in 2010).

The aim of this project is to evaluate new insecticides against adult flies in laboratory tests and against larvae in a small field trial. Flies will be obtained from infested bulbs growing at Wellesbourne. Insecticides were last evaluated for large narcissus fly control in 2004-5 and several new active ingredients have become available since then and are being evaluated currently for edible crops in a Horticulture LINK project (SCEPTRE). If none of the insecticides are effective then there will be no point in pursuing further field experiments. However, if some of the insecticides are effective then they could be evaluated subsequently in the field. The insecticides to be tested will be applied as foliar sprays and the adult flies are likely to be the main targets. However, one of the novel insecticides is extremely mobile within plants and it may be that a foliar spray treatment with this insecticide would have some activity against large narcissus fly larvae. Some direct contact activity will also be assessed on an informal basis.

Aims & Objectives:

(i) Project aim:

The overall aim is to determine which, if any, of the recently approved insecticides, or insecticides likely to achieve approval within the next 2-3 years, are effective against large narcissus fly adults or larvae. If efficacy is demonstrated then field application strategies would require investigation subsequently.

(ii) Project objectives:

1. Determine whether insecticides applied to narcissus foliage at commercially viable rates kill adult large narcissus flies or larvae.
2. Determine whether fly mortality is increased by the addition of baits (sugar/protein additives) to the insecticide spray solution.

Benefits to industry

- The proposed study will demonstrate whether any of the insecticides approved recently, or likely to become available in the foreseeable future, are effective against the large narcissus fly.

- Exports to both EU and non-EU countries are essential to the economy of the bulb industry. Narcissus fly infestation levels as low as 1% may jeopardise the export of bulbs. Current control measures are nowhere near 100% effective, and the control strategy uses just one pesticide, chlorpyrifos, which is unpleasant to use and may not be available in the longer term.

Disclaimer

Further information

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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