New Project

PE 014

Peppers and Aubergines: A desk study to identify IPM compatible control measures for Nezara viridula and Anthomonus eugenii

Project Number:	PE 014
Project Title:	Peppers and Aubergines: A desk study to identify IPM compatible control measures for Nezara viridula and Anthomonus eugenii
Project Leader:	Dr Robert Jacobson
Contractor:	Rob Jacobson Consultancy Ltd
Industry Representative:	Mr G. Taylor, Valley Grown Salads
Start Date:	01 January 2013
End Date:	30 June 2013
Project Cost (total project cost):	£7,860

Project Summary:

- *Nezara viridula* (southern green shieldbug) is not a native of the UK but has been recorded annually from sites in southern Britain since 2003. It is becoming increasingly common in glasshouses in the London area where it has caused significant damage to sweet pepper and aubergine crops.
- In 2012, HDC commissioned Dr Jacobson to produce a factsheet which provides an introduction to the biology and recognition of *N. viridula* thereby helping growers to distinguish it from less damaging native species of plant bugs.
- *Anthomonus eugenii* has not yet been found in the UK but eradication measures were taken in four sweet pepper crops in the Netherlands during 2012.
- Current control measures against *N. viridula* in the UK and against *A. eugenii* in the Americas are based on broad spectrum insecticides which are extremely disruptive to IPM. This can lead to secondary problems with other pests; *eg Frankliniella occidentalis* (western flower thrips) and the associated tomato spotted wilt virus.
- It is vitally important that UK growers have access to IPM compatible control measures against *N. viridula* and *A. eugenii* as soon as possible.
- RJC and Associates will collate information via literature searches, insecticide databases and direct from suppliers of biological, chemical and other IPM-related products. In addition, they will consult personal contacts in the 'International Organisation for Biological Control' and 'International Biocontrol Manufacturers'

Association' who have had first hand experience of *N. viridula* and *A. eugenii* in other countries / other crops.

- The study will pay particular attention to the potential use of pheromones for monitoring and / or control, semiochemicals which may be used as attractants or repellents, biological control agents, biopesticides, 'soft' chemicals, 'trap plants', and IPM compatible insecticides applied as high volume sprays or through the irrigation system.

The collated information will be summarised for growers in appropriate technical notes and / or an article for HDC News.

Aims & Objectives:

The overall objective of the project is to identify IPM compatible control measures for *Nezara viridula* and *Anthomonus eugenii* in pepper and aubergine crops.

Benefits to industry

- *Nezara viridula* has piercing-sucking mouth-parts which are formed into a beak-like structure. Salivary fluid is pumped down one duct into the plant tissue and liquefied food is then sucked back into the insect. The insect probably feeds on all parts of the plants but the effects are most clearly seen in growing points and developing fruits. Damaged growing points usually wither and may die. Feeding on young fruit results in distortion and discolouration as the fruit swells. Feeding punctures on larger fruit cause hard brown spots and a variety of other imperfections which render the fruit unmarketable. In addition, it is common for fruit to be contaminated with globules of sticky regurgitated food which must be removed before sale.
- *Anthomonus eugenii* adults and larvae feed on and destroy buds. Larvae also feed inside fruits rendering them unmarketable. Riley & Sparkes (1998) state that up to 90% fruit has been damaged in some situations.
- Current control measures against *N. viridula* in the UK and against *A. eugenii* in the Americas are based on broad spectrum insecticides which are extremely disruptive to IPM (see section 10). This can lead to secondary problems with other pests which must also be controlled with chemical insecticides.
- The disruption and termination of the IPM programme means that growers lose an important marketing advantage over their overseas competitors.
- The full economic implications of *N. viridula* and *A. eugenii* infestations have not yet been determined for UK growers. However, initial observations suggest that losses due to direct damage, secondary pest problems and the loss of goodwill with retail customers could be very substantial.

Disclaimer

Further information

Email the HDC office (hdc@hdc.ahdb.org.uk), quoting your HDC number, alternatively contact the HDC at the address below:

HDC
AHDB
Stoneleigh Park
Kenilworth
Warwickshire
CV8 2TL

Tel – 0247 669 2051

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