Plant & Food RESEARCH
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Tomato potato psyllid identification/monitoring training workshop/s

Berry NA.

March 2010

A report prepared for:

Potatoes New Zealand

Berry NA.

Plant & Food Research, Lincoln

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This report has been prepared by The New Zealand Institute for Plant & Food Research Limited (Plant & Food Research), which has its Head Office at 120 Mt Albert Rd, Mt Albert, Auckland.

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The half-day psyllid identification laboratory workshops were attended by 8 participants in Auckland (14 January 2010), 7 in Havelock North (19 January 2010) and 5 in Canterbury (26 January 2010). All attendees were confident and became proficient at the accurate identification of the Tomato Potato Psyllid (TPP) by the end of the workshops.

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1 Introduction

The prediction of pest outbreaks is an important component of pest management strategies because a warning of the timing and extent of pest infestation can improve the efficiency of control measures. Crop monitoring can be used in insect pest management to determine the pest's distribution, seasonality, effectiveness of control measures and help predict pest outbreaks. Sticky traps and visual plant assessments have been identified as potentially useful tools for monitoring psyllids in potatoes. The techniques used to identify and monitor insect presence and abundance must be appropriate, robust and accurate. As growers have become increasingly aware of the importance of monitoring adult psyllid numbers in their crops it was recognised that industry required education in the accurate identification of the TPP.

2 Aim

As the TPP (*Bactericera cockerelli*) is a recent incursion, there is no published key available to help identify it and distinguish it from native and other introduced psyllid species found in New Zealand. In addition, standard crop monitoring methods are only just being established within current research programmes, e.g. Sustainable TPP Management SFF.

The aim of the training workshops was to provide growers, businesses and industry representatives with practical skills on TPP identification, sticky trap and visual plant assessment protocols.

3 Methodology

Half-day psyllid identification laboratory workshops were held in the Auckland (14 January 2010), Havelock North (19 January 2010) and Canterbury (26 January) regions. Potatoes New Zealand sent out invitations to various growers' businesses and companies providing crop monitoring and support services. Workshops were limited to 10 participants to maximise the "hands on" training time of individual participants.

The course comprised a 15-min power point presentation followed by a laboratory training workshop.

The training and accurate identification of the TPP was accomplished using the following:

- Live examples of TPP nymph and egg infestations on plants.
- Live examples (dependent on region) of various native psyllid nymph infestations on native plants.
- Freshly emerged and older TPP adults for each trainee to use in microscopic examination.
- The various morphological characteristics of TPP adults were demonstrated, trainees were subsequently provided with specimens to demonstrate their ability to locate these characteristics.
- A mixture of native psyllids and TPP adults was provided, Trainees were required to differentiate between native psyllids and TPP using their knowledge of the key characteristics of TPP.
- Identification of TPP on sticky traps was practised using previously mounted TPP and a number of aphids, thrips and other commonly found insect groups. Trainees were required to identify and count the number of TPPs on a trap.
- The ability to distinguish between TPP and other native psyllids was practised using a sticky trap with a previously mounted mixture of psyllids.
- The ability to accurately identify and count TPP was reviewed using sticky traps from commercial potato crops.
- A photographic handout entitled: Tomato Potato Psyllid and other psyllids in New Zealand: identification.
- A photographic handout entitled: Tomato Potato Psyllid life stages.
- A photographic handout entitled: Some other insects found in potato/tomato/capsicum crops.
- A photographic handout entitled: Main characteristics to distinguish *Bactericera cockerelli* from other psyllids in New Zealand.

4 Results

The half-day psyllid identification laboratory workshops were attended by 8 participants in Auckland, 7 in Havelock North and 5 in Canterbury. All attendees were confident and became proficient at the accurate identification of TPP by the end of the workshops. All attendees reported that the workshops were well run, and expressed their appreciation for the opportunity to improve their skills in TPP identification and their overall knowledge of the TPP.

5 Acknowledgements

Thanks to Potatoes New Zealand for organising the attendees and funding the workshops.