Remote microscopy diagnostics for pre-clearance export of apricots grown in central Otago

Introduction

• Central Otago growers wishing to export apricots to Australia are required to have fruit graded, packed and inspected by a registered packhouse as part of the Offshore Pre-Clearance Inspection Programme.

• An Australian government inspector is brought to Central Otago by the industry for approximately 6 weeks (early January to mid February) to carry out fruit inspections in the packhouse, specifically targeting insect interceptions.

• When the inspector found a specimen, and prior to remote microscopy diagnostics (RMD) insect identification, it took approximately 3 days to identify the specimen, as these had to be sent by courier from Central Otago to a certified laboratory in Auckland.

• RMD enables same-day insect identification by experts from the Plant Health and Environment Laboratory, Ministry for Primary Industries, Christchurch.

• A camera mounted on a compound or stereo microscope relays images in real time via the internet (Figures 2) and the technician in Clyde can manipulate the images of the specimens (Figure 3, 4) to enable identification by qualified MPI staff in Christchurch.

Conclusions

• RMD has proven to be a very beneficial tool for insect identification in the majority of interceptions; it has been running for two years now.

• MPI have been hugely supportive of RMD as evidenced by their loan of equipment to PFR in the first year this technology was used, as well as training PFR technicians in insect preparation.

• Time savings of approximately two days can be achieved for each specimen successfully identified.

• There are a small proportion of insects which are not suited to RMD, for example, oribatid mites fall into this category. Such specimens are sent via courier to Auckland or Christchurch.

• The preparation of some species is crucial to making a definitive identification (e.g. Figure 4).

• There were 12 interceptions in the 2015 season, four of these were actionable where fruit could not be exported to Australia, and included Thrips obscuratus and Nysius huttoni. Two specimens identified as Tydeus spp. were actionable for Western Australia only.

• Growers report that the service costs are on a par with the previous system but the time savings are invaluable.

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