



Dunedin unit reveals arid origin of pest

■ Advanced test used on painted apple moth

By Neal Wallace

A fledgling Dunedin biotechnology company using cutting-edge forensic technology has found a painted apple moth caught in Auckland is a new arrival.

Iso-trace New Zealand, wholly-owned by the University of Otago's commercial company, Otago Innovation Ltd, has developed a body tissue test so sensitive it was able to determine a moth caught at Otahuhu in May had pupated in a climate more arid than Auckland.

This told Biosecurity New Zealand that the moth had not survived the 2002 eradication spraying programme in West Auckland, but was a recent arrival.

Iso-trace general manager Tye Husheer said the test looked for chemical fingerprints to determine where an insect or animal came from.

Mr Husheer said in an interview that Biosecurity NZ pro-

vided moths from a variety of sources, which were split into six groups.

Forensic testing of those groups showed the moth caught last month was "significantly unlike" those caught in the last outbreak, or those reared in captivity for research and to breed females to produce pheromone to attract males to traps.

"What we ended up with ultimately was saying that we were pretty sure that it did not end up feeding on larvae in Auckland. We were able to determine the water and environment it was brought up in was a more arid region."

The test is so sensitive it identified, through analysing hydrogen, that two moths reared for research work had had access to different water sources and came from different regions within New Zealand.

Mr Husheer said this biosecurity chemical fingerprinting was what Iso-trace was designed for and proved the isotope ratio

mass spectrometry test worked.

"It is a pretty exciting development. I guess it's like an independent third party confirming our skills," he said.

The technology was developed out of nuclear research in the 1940s, but mass spectrometry was only a recent development.

Mr Husheer said Iso-trace, with Otago University, had developed automated sampling and data collection to make the technology applicable.

Its laboratory in the Centre for Innovation has equipment not found anywhere else in New Zealand and in few other laboratories in the southern hemisphere.

He was hopeful this success would lead to more work.

The painted apple moth is considered a threat to New Zealand's flora as it feeds on a variety of plants, stripping the foliage.

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