

Clover root weevil hits South Island

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AgResearch today announced it has detected the destructive white clover pest, clover root weevil, in the South Island for the first time.

Dr Craig Phillips, science leader for the Better Border Biosecurity (B3) project, a 12 year FRST-funded research joint venture aimed at preventing new pests from entering or establishing themselves in New Zealand, said a member of his team, Mark McNeill, had discovered a clover root weevil near Christchurch International Airport. It had been caught in a prototype trap they are developing for surveillance which attracts weevils with a chemical lure.

Dr Phillips said the fact that the methods and inventive technology his team were testing had detected clover root weevil in the South Island for the first time was significant. Another member of his research group, Dr Louise Winder, was able to use DNA testing to quickly show that the clover root weevil had come from the North Island, rather than from overseas.

Dr Phillips said after finding just one specimen, it was initially hoped it may have been an isolated case of a weevil hitching a ride south with flight cargo. But when further searches turned up two more clover root weevils, one a kilometre south of the airport and the other a kilometre to the north-west, the likelihood of that became remote.

Dr Phillips said it was inevitable that clover root weevil would eventually be found in the South Island. It would have crossed Cook Strait fairly easily over the past few years by clinging to vehicles and freight travelling from weevil-infested parts of the North Island.

“It’s not surprising we found clover root weevil at the airport since it is one of only a handful of locations where we’ve been testing our traps. It is likely that small, as yet undetected, populations of clover root weevil are also present at other South Island locations.”

Dr Phillips said clover root weevil had serious implications for pastoral farmers, but the discovery had shown that the Better Border Biosecurity programme is making good progress towards its goal of improving pest surveillance technologies.

Better surveillance methods are needed to increase the chances of successfully eradicating any overseas pests that get past New Zealand’s border defenses. However, in the case of clover root weevil, attempts to eradicate it from the South Island would be a waste of

resources since there was no practical way to stop it re-invading from the North Island.

“The aim of the Better Border Biosecurity joint venture is to develop new approaches and tools to ensure unwanted organisms are firstly kept out of New Zealand, or, if they do manage to enter, ensure they are eradicated before establishing permanent populations.” Five research organisations, Biosecurity New Zealand, the Department of Conservation and the Environmental Risk Management Authority (ERMA) are partners in the programme.

Clover root weevil was first discovered in Waikato in 1996, and could cost the pastoral sector up to 300 million dollars a year. White clover is a crucial component of New Zealand farming systems in terms of nitrogen fixation and feed value for stock and is estimated to contribute more than \$3 billion to the economy. When clover quality is compromised, extra nitrogen fertiliser is required, and this can have negative economic and environmental impacts.

Dr Phillips said the tell-tale sign of clover root weevil presence were match-head sized, crescent-shaped, notches eaten out of the edges of clover leaves. The notching arises from feeding by the adult stage of clover root weevil, but larvae do the most damage to white clover by feeding on its roots and root nodules. He said South Island farmers could provide valuable information by informing AgResearch if they observed notching on clover leaves on their farms.

After being given the green light by ERMA last November, AgResearch has so far conducted three specifically targeted releases of the tiny parasitic wasp, *Microctonus aethiopoidea*, which attacks only the clover root weevil and renders it sterile before killing it. The releases were in Morrinsville in early January, Hawkes Bay in late January and in Bulls and Fielding earlier this week.

Dr Phillips worked in a programme with his AgResearch colleagues Dr Stephen Goldson, Dr Pip Gerard, Mark McNeill and John Proffitt, in Europe and the USA that eventually led to Mr McNeill discovering the wasp in Galway, Ireland. He said their aim to conduct similar biocontrol measures in the South Island rested upon the outcomes of future funding applications.

The parasitic wasp, which is totally harmless to humans, kills clover root weevil by injecting it with an egg which makes female weevils sterile. This breaks the weevil life cycle. The wasp larvae go through four stages with the last larval stage killing the weevil as it breaks out of the weevil's body. The larva then turns into a pupa which in turn becomes an adult wasp.

ENDS



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*Te Ahuwhenua, Te Kai me te Whai Ora. **Tuatahi***

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For further information or to arrange an interview with Dr Craig Phillips, please contact AgResearch media advisor, Anthony Clearwater on 029 489 9139.