DAN WATKINS SCHOLARSHIP IN WEED SCIENCE

Dan Watkins was one of the founders of the Ivon Watkins Ltd herbicide company, based in New Plymouth, which later became Ivon Watkins Dow and is now Dow AgroSciences. He was a leading figure in the early weed science research arena within New Zealand. Dan Watkins was a founder of the New Zealand Weeds conference, forerunner of the New Zealand Plant Protection Society. He was also a member of the New Zealand National Research Council and was involved with other scientific bodies. This scholarship has been set up and financed by Dr George Mason, one of the founders of Taranaki Nuchem (now Zelam Limited), in memory of Dan Watkins and to recognise his contribution to weed science within New Zealand.

Craig Sixtus, a part-time PhD student and a Research Assistant at Lincoln University, has been awarded the Dan Watkins Scholarship in Weed Science for 2009/10. Craig’s study is “The gorse pod moth (Cydia succedana): is it a successful gorse (Ulex europaeus) biocontrol agent?” and he is investigating three different aspects of the relationship between the weed and the biocontrol agent. Gorse is the number one weed in New Zealand and the need to find sustainable methods of control is an ongoing task. The gorse pod moth was introduced in the 1990s and little is known about whether this biocontrol agent is effective at controlling gorse.

Craig has 14 field sites throughout New Zealand that differ in altitude, climate and soil type. At each site Craig is determining the phenology and seed production of gorse. Samples of pods are being taken when there are ripe seed pods and the number of intact, damaged and destroyed seeds noted. In addition, Craig is trapping at each site to determine gorse pod moth population. The results are indicating that the gorse pod moth favours warmer climate areas, although there has only been 8 months of sampling so far. The phenology of the gorse pod moth is in synchronisation with the phenology of gorse during its spring reproduction, but at sites where gorse has two reproductive cycles, this may not be the case.

Another aspect of Craig’s research involves testing the host-specificity of the gorse pod moth in the field. To do this, Craig has native and exotic legume shrub plants that will be placed amongst areas with gorse pod moth populations to see if the gorse pod moth will enter pods other than gorse. This work will assist in determining whether the gorse pod moth is, or can be, an effective gorse biocontrol agent, whether it can be used for control of other legume weeds, or is potentially a threat to native or commercially important legumes. Craig is also aiming to determine whether there is only one species of gorse pod moth (C. succedana) in New Zealand or if C. ulicetana is also present. Analyses of larval DNA will be used to answer this question.