



Weka Mecca Summary by Heather Neill

Project Aim: To investigate the use of a modified detection device to deliver poison as a means of controlling and monitoring possums without posing a risk to indigenous ground birds, specifically weka.

Background: Possums not only threaten many native species of flora and fauna throughout New Zealand but they are also a reservoir of Bovine Tuberculosis which infects many cattle herds every year. Current methods of detection and control which appear to be effective elsewhere do not always perform optimally on the West Coast where rodent interference is high and there are limitations to available methods due to risks to native ground birds. I thought putting poison inside a possum detection device in such a way that it did not present a risk to other species could eliminate a whole stage of the pest control process and save a lot of money on labour intensive trapping methods.

Part One: Method: The detection device I used in my research was the “spoked” chew card which is a rectangular piece of Coreflute plastic (standard chew card) in which a peanut butter lure is placed down the flutes along one side. Chew cards are traditionally baited on alternate sides, folded in half then nailed to a tree, but a spoked chew card has a bicycle spoke pushed through the middle flute and the device is attached to a tree at a standard height of 35cm. The spoke has various bends to maximise effectiveness. The original design concept of this device was by Landcare Research NZ but was developed and adapted by Mark Neill (of the Animal Health Board) and myself.

The Animal Health Board utilised these “Spoked” Chew cards in a survey to detect possums for follow up control in Karamea (West Coast in May 2011). For the first stage of my investigation, I analysed a large number (977) of the cards to determine which species other than possums interfered with the devices and to what extent. This was determined by interpreting the tooth/beak indentations left on the cards using scales of interaction for rodents and weka.

Results: My results showed that possums, rats, mice, weka, waxeyes and cattle had chewed/pecked on the cards. Unexpectedly, Waxeyes had pecked the peanut butter from down the flutes up to a depth of 8mm. The most significant result I found was that in all cases where cattle interfered with cards, the cards were pulled off the spoke and left on the ground. This made them easily accessible to weka which would come and peck on them and although less than 2% of analysed cards detected weka, 55.6% of those cards were dislodged by cattle. This shows that if cards were to be poisoned, farmers nearby would have to be extra vigilant as to where they graze their animals while the cards are out.

Part Two: Method: This part of my investigation involved conducting my own field trials with Roger Beattie’s farmed weka in Canterbury. I trialled the spoked chew card, the traditionally attached chew card and a card on the ground to simulate those dislodged by cattle. Two cards of each configuration were placed in a pens with a pair of weka over a period of three days; one configuration per day. Of the two cards in each pen, one was baited with peanut butter to provide a control and to help determine whether weka are more attracted to the peanut butter or the white colour of a chew card. A Buckeye™ camera was installed in one of the pens to capture video footage of the weka interacting with the cards. The number of pecks were counted on each card as a way of measuring damage sustained to each card. Each peck was rated using a scale I devised for degree of weka pecking, which is based on the penetration of the plastic.

Results: My results showed that the ground cards significantly sustained the most damage and the spoked chew cards sustained the least with less than 1% of the total pecks. I also confirmed this by completing a chi squared statistical analysis.

Development: Using the results of my study, I designed a configuration for a chew card that incorporates poison with low risk of poisoning non-target species. The design included approx. 5mm of peanut butter along one edge then cyanide sealed between two layers of wax to prevent waxeyes getting it and to make the card weatherproof to protect the poison until needed.

Conclusion: My scientific investigation proves that poisoned spoked chew cards could be put at 35cm above the ground without posing a risk to weka as long as the cards are set up appropriately. This discovery has the potential to improve possum control and monitoring and protect a New Zealand treasured flora and fauna for the generations to come.