# Grub's passion for plastic causes water loss

September 27 2007

Research by the NSW Department of Primary Industries (DPI) has found that a small white grub is responsible for water leaking from sub-surface drip irrigation pipes used by some lucerne growers.

The Australian Entomological Society 38th annual scientific conference being held this week in Victoria was told there had been many suspects in the hunt for an explanation for small holes in the leaking pipes.

NSW DPI entomologist, Dr Adrian Nicholas, said ants, African black beetle, crickets, mice and physical wearing of the plastic piping have all been blamed, however laboratory experiments have confirmed the culprit is the larvae of the Whitefringed weevil.

Dr Nicholas says experiments using glass observation chambers show that the Whitefringed weevil larvae, which are 13mm long and 4mm wide, bite or chew through the pipe using two dark brown pincers.

Sub-surface drip irrigation has been an important advance for growers because it improves productivity, ensures efficient use of water and reduces labour costs.

However when lucence is grown, the thin walled irrigation pipe or tape is frequently damaged, with tiny 1-2mm holes appearing which are surrounded by distinctive perimeter markings.

Dr Nicholas said: “For growers, the grubs’ passion for plastic is a real problem. There can end up being hundreds of holes”.

Because the affected pipes are buried underground, growers have to take an educated guess about the location of the holes. They need to seek out the areas where the lucerne plants are especially lush and dig down to make repairs.

The problem is that they have to track down all the holes in the irrigation pipe
to restore water pressure, and ensure the even distribution of water throughout the irrigation system.

To solve the chewed-pipe riddle, Dr Nicholas monitored the activity of the larvae in slim glass chambers containing soil, carrot and irrigation pipe set up in laboratories at the Tamworth Agricultural Institute.

“It was not until we identified the right environmental conditions that the larvae started moving freely around the chamber.

“As soon as they did, they moved to the plastic pipe and started biting it and causing damage that was consistent with that seen on grower properties.”

The Whitefringed weevil is a well known pest of lucerne. The larvae attack the roots of lucerne plants causing significant yield loss and sometimes death of the plant.

Source: New South Wales Department of Primary Industries