

## Beneficial Insects and Biodiversity – by Ingrid Rencken

### The benefits of biodiversity - a few key messages from the Ecosystem Services Review (14 February 2008)

Beneficial insects are present in pastures, dry land lucerne, native shelter belts (tree species included eucalyptus, acacia, casuarina and melaleuca), large river reds along river banks and the travelling stock route adjacent to cotton fields. The beneficial insects are active during the winter months and some used the non-crop vegetation as egg laying sites. Using rare-earth labelling it was demonstrated that beneficial insects moved from the native shelter belt into the cotton fields. This highlights the importance of the non-crop vegetation not only as a source of beneficial insects, but also a breeding site of some beneficial insects.

### Key Researcher's in the field of biodiversity.

David Perovic is a PhD student at Charles Sturt University, in Orange. He is investigating the role of non-crop areas in the conservation of natural enemies in cotton landscapes. With particular focus on landscape complexity, arthropod movement throughout the landscape and modelling landscape connectivity.

Ingrid Rencken recently completed her PhD from the University of New England. The focus of her thesis was the importance of non-crop vegetation to beneficial insects. She is currently employed with the DPI&F in Queensland where she works as a development extension officer.

## Ever wondered how much water you are losing from your storage?

In broadacre irrigation, the losses from storages are often the greatest loss in the whole irrigation system. Improvements in water use efficiency can be made at the water storage, but first you need to know how much you are losing to seepage and evaporation.

The Irrimate™ Seepage and Evaporation Meter is available to measure these two components of storage loss. The meter consists of a highly accurate water depth sensor (accurate to within 1 millimetre) and automated weather station to monitor wind speed and rainfall. Water level is logged every 15 minutes and relating night time evaporation to weather data, total losses can be split up to determine evaporation and seepage losses.

Gwydir Valley Irrigation Association recently purchased a Seepage and Evaporation Meter which is available to their members to measure storage losses. If you are interested in using this meter please contact GVIA on 67521399.

## Helicoverpa spp. Diapause Tool

### What is diapause?

This is the time of the year when a proportion of mature larvae going to ground to pupate enter a hibernation phase termed diapause or overwintering. This dormancy strategy allows the pest to survive the winter months in temperate regions when host plants are scarce and temperatures are generally too low to allow successful development. The triggers to enter diapause are decreasing daylength and temperature as experienced during late summer and autumn.

The proportion of pupae entering diapause increases from low levels in March, to high levels, almost 100%, by late April. The rate of diapause induction varies from season to season, and region to region. Knowing when diapause is induced is useful for identifying 'high risk' fields i.e. those fields most likely to have diapausing pupae.

A web tool is available on the Cotton CRC website to help calculate the likely rate of diapause induction for your area, based on local climate data. The tool is also able to compare the results for the current season with the long term average and hotter than average and cooler than average seasons. Follow this link: <http://tools.cotton.crc.org.au/cl2/diapause/index.aspx>

(This information is from an article by Dave Murray posted on the QLD DPI&F Beatsheet Blogsite.)

### Date Claimer – Wednesday 14<sup>th</sup> May 2008.

*Increasing our Knowledge of Groundwater Systems: Workshops for cotton growing regions.*

The NSW DPI and Cotton CRC are hosting a series of free one day workshops throughout cotton growing regions designed to increase the knowledge among water users of how groundwater systems work and the management of these systems.

Full details of the workshop will be given closer to the date. Numbers are limited, and for further information please contact Lauryn Hanna on 6750 6308.