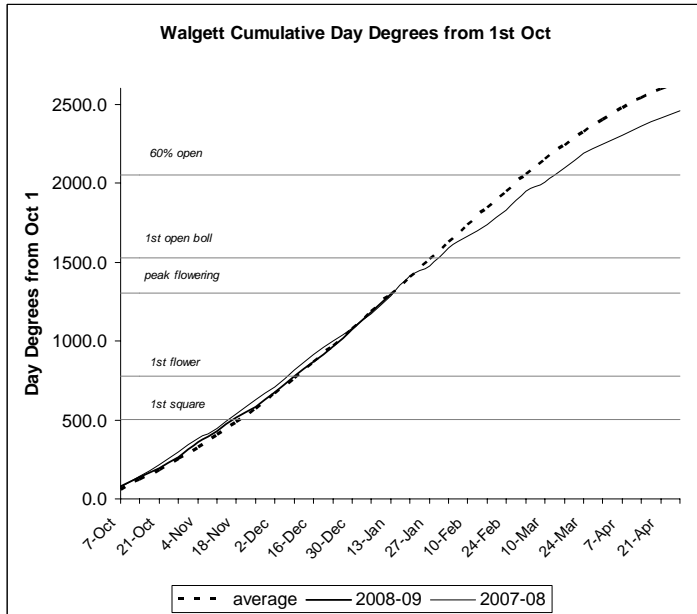


Day Degrees Accumulation to 13th January 2009

Walgett Airport	Season 08/09	Cold Days	Hot Days
15/09/08 – 30/09/08	130.2	9	
01/10/08 – 13/01/09	1297.7	10	27

Crop Stages vs Day Degree Accumulation				
1 st Square	1 st Flower	Peak Flower	Open Boll	60% Open
505	777	1302	1527	2050



Beneficials in Native Vegetation by Ingrid Rencken

Recent Cotton CRC research has confirmed non-crop vegetation plays an important role in supporting beneficial insects.

Insect predators (eg. red & blue beetles, ladybirds, damsel bugs & lacewings) have been collected by Ingrid Rencken (PhD student UNE) in native windbreaks (Eucalyptus spp, river red gum, acacia, melaleucas & casuarinas), dryland lucerne, grassy paddocks & stock routes surrounding cotton fields. In general, woody habitats support a higher biodiversity than crops. This non-crop vegetation supports arthropod predators during the winter months by providing breeding sites & alternate sources of food.

Felix Bianchi (CSIRO) has shown that native vegetation (comprising a mix of poplar box, acacia & salt bushes) is a source of white-fly parasitoids. Using sentinel cotton plants infested with whitefly larvae he & his team were able to demonstrate that fields closer to native vegetation had higher rates of parasitism than those fields further away from the native vegetation.

Interestingly, native vegetation did not appear to be a source of cotton insect pests. Ants appeared to be important predators of *Helicoverpa* eggs & were numerous in cotton fields & within the native vegetation.

In an elegant marking experiment using a rare-earth trace element label rubidium, David Perovic (PhD student Charles Stuart University) demonstrated the movement of

arthropod predators from shelter belts into cotton fields. Rubidium marking has the advantage that it is both a contact marker as well as being absorbed by the plant so any insect feeding on the plant is also marked. A 0.4 ha area of native vegetation was sprayed with rubidium. Marked predators (*Oxyopes* spp, red & blue beetles & ladybirds) were collected 1, 3 & 5 days later in the adjacent cotton field.

He went on to investigate the movement of predators at a landscape level using cost-distance modelling. This method identifies the most efficient path from one location in the landscape (e.g. non-crop vegetation) to another (e.g. cotton crop). Using this model it was shown that the natural enemy density within the crop was positively related to the area of non-crop land surrounding cotton fields, suggesting that the greater the area of non-crop area the higher the expected density of natural enemies within the field. The arrangement of the non-crop vegetation within the landscape may also be important as the model suggested that red & blue beetles preferred to move through wooded areas first, then grasses & then crops. This would mean that red & blue beetles can much more effectively move & colonize cotton crops in landscapes containing forest patches & wind breaks than in landscapes composed of only crops.

Native vegetation plays a significant role in the natural suppression of pest populations, as it supports arthropod predator populations that colonize cotton crops. There is a likely trade off between benefits of insect pest management derived from non-crop vegetation & the costs in establishing, maintaining & managing the surrounding non-crop vegetation.

Agrifood Skills Australia 2009 Environmental Scan Survey.

Agrifood Skills Australia, represents rural industries (as well as other areas) at a national level on issues such as ensuring current rural training needs and workforce development needs are being addressed. This involves informing the Department of Education, Employment and Workplace Relations (DEEWR), Skills Australia and other key stakeholders of what skills and education is required by what sector to ensure reverse the labour and skills shortages that exist. Information contained within the national training packages used by TAFE, Agricultural Colleges and various private providers must reflect what the rural sector's skills requirements are for a workforce. To gather the grass roots information, this organisation has decided to conduct a national survey to develop a document it refers to as the Environmental Scan 2009. The following link also contains a discussion paper for more background information or you can simple contact Mark Hickman (National Training Coordinator) on 07 4688 1206 or mark.hickman@dpi.qld.gov.au. I would encourage every producers to have a say by clicking on the following link and following the promotes to the Environmental Scan Survey 2009. <http://www.agrifoodskills.net.au/>