

Angus Wilson: Pioneer cotton researcher

The cotton community was saddened to hear of the recent death of one of the original researchers in the modern Australian cotton industry. Angus Wilson was one of the founders of pest management research in Australia.

In the early 1970s Angus was involved in pioneering research in the Ord River cotton system. He was the first to document insecticide resistance in pests in the Ord, where cotton production subsequently collapsed due to this problem.

In the mid 1970s Angus transferred from Canberra to the newly founded CSIRO Cotton Research Unit, based at the NSW Department of Agriculture Narrabri Agricultural Research Station. Angus set about developing research on a range of critical issues, including:

- Understanding the triggers for the induction and termination of the overwinter diapause of *Helicoverpa armigera* pupae in the soil. From this he developed a model to predict the time of moth emergence in spring. This information was later important in determining when cultivation should be undertaken to control pesticide resistant pupae, thereby reducing the carry forward of resistance from one cotton season to the next.
- Development of damage thresholds for *Helicoverpa armigera* and *punctigera*. This provided a rational basis for cotton growers and consultants to decide if a pest infestation required control to prevent economic loss.



Angus Wilson.

The threshold of two larvae per metre, developed by Angus in the late 1970s, is still used today. At the time, it represented a significant increase over the then threshold of 0.67 larvae per metre and gave the opportunity to considerably reduce insecticide use.

- Evaluation of selective control options for *Helicoverpa spp.* Angus was the first to experiment with the use of environmentally safe biological insecticides such as Dipel (based on the bacteria *Bacillus thuringiensis*) in combination with a low rate of insecticide to control pests. The Dipel plus chlordimeform (ovicide) mixture provided good *Helicoverpa* control, suppression of spider mites and

had little effect on beneficial insects — so it had a good fit in the developing integrated pest management system. This strategy of combining a biological and synthetic insecticide became popular in the cotton industry until the removal of chlordimeform in the mid 1980s, and is still a current fruitful area of research.


- Strip cropping of cotton with sorghum to act as a trap crop for *Helicoverpa spp.* This increases the numbers of beneficial insects in cotton and acts as a 'windbreak' for young cotton. Angus was again ahead of his time — the use of sorghum strips is being re-investigated today.
- The use of pheromone traps to estimate the species composition of *Helicoverpa* and potential abundance in an area.
- Degradation and drift of insecticides — this work investigated how the efficacy of insecticide deposits on crops reduced as they aged. This work was important in understanding the persistence of insecticides and their capacity to control influxes of pests that occurred after insecticide application.

Angus also investigated how far insecticides drifted from cotton crops and was fundamental in development of buffer zones for insecticides where the risks from drift were high.

ONE OF THE PIONEERS

Angus will be remembered as one of the pioneers of pest management for cotton production in Australia and as an innovator, willing to try out new ideas. He developed a very productive work relationship with his Technical Officer, Les Bauer, and with many other CSIRO and NSW DPI scientists.

He was a cheerful scientist with a dry sense of humour. After his retirement from CSIRO, Angus remained involved with the cotton industry, teaching the principals of crop scouting and pest management at the Narrabri TAFE college and undertaking work as a consultant for various agro-chemical companies.

Angus was well respected by his peers and everyone who had the pleasure of working with Angus were saddened to hear of his sudden and premature passing. 



Angus investigated degradation and drift of insecticides among other things.