

## **BACKGROUND**

Interest amongst cotton growers in utilising the contribution of beneficials in pest management is gaining momentum due to a recent squeeze on profit margins (increasing pesticide costs and decreasing cotton prices), environmental pressures (ie endosulfan) and the emphasis placed on IPM by key research, extension and industry groups. Research to quantify the effectiveness of beneficials and to facilitate prediction of their impact on insect pests is required for the development of effective IPM systems and for continued fostering of grower interest. Research on beneficial soil fauna in Australian cotton agroecosystems is very much in its infancy. Feeding preferences and the contribution of soil-surface inhabiting predators (referred to hereafter as soil predators) to cotton pest management are virtually unknown. Similarly, little is known of absolute population densities for these groups. This project quantified the densities of soil fauna, including soil predators, in commercial irrigated cotton fields under sprayed and unsprayed conditions. Direct field and laboratory studies were used to establish the feeding links between common soil predator species and key pests (e.g. *Helicoverpa* spp.) during the cotton-growing season. Preliminary calibrations of qualitative enzyme-linked immunoassay (ELISA), used to detect prey protein in the gut of predators, were explored for the common brown earwig, 3 ladybird species and the red and blue beetle.