

Media Release

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The worm has turned – cutting the US\$5 billion damage bill for an agricultural pest

With help from University of Melbourne scientists, research groups in India are starting to turn the tide in the war against the cotton bollworm – an agricultural pest that causes US\$5 billion damage across the world each year. This moth is the world's number one agricultural pest, attacking over 100 different crop plants, including cotton.

In the late 1990s, nearly 40% of the cost of cotton farming across Asia was involved in the control of pests, in particular the cotton bollworm. The large amount of chemicals required were due mainly to the resistance the bollworm shows to many of the insecticides traditionally used to control it.

Collaborative studies on the genetic and biochemical basis of this resistance led to the development of a simple but science-based integrated pest management scheme designed to reduce its impact.

Early small-scale tests of this scheme showed an overwhelming increase in the efficacy of insecticide application. More recently a larger national programme across India, also trialed in China and Pakistan showed a 50% drop in insecticide use, coupled with a 10-15% increase in yield - greatly enhancing cotton profitability for small farmers.

Melbourne University's Associate Prof Derek Russell says, "The application of relatively simple insecticide rotations backed by a great deal of sophisticated laboratory and field science has already doubled income from cotton for many thousands of poor farming families across Asia and given the Indian government a more than 40:1 return for every dollar they invested in the national programme".

The group responsible for the programme, received the Indian Council for Agricultural Research Award for Team Science in 2006.

The success of the programme has been widely publicised throughout India in numerous newspapers and broadcasts, but also directly to the farmers, in meetings, training camps and short plays put on in villages.

There are currently nearly 90,000 cotton growers across more than 1,000 villages in all 11 cotton states involved in the programme in India. As these numbers increase the benefits of the programme can only grow.

Dr Russell points out that, "If this scale of benefits can be obtained simply from conventional analyses of the biochemical mechanisms and inheritance patterns of resistance in the cotton bollworm, a further quantum leap could be made if we had the sequenced genome of this insect which is such a drag on the livelihoods of so many millions world wide".

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