

Insects be Warned: Resistance is Futile

Across Asia approximately 30 million small-scale cotton producers endeavour to support their families on less than two hectares of land, with this cotton crop often being their only source of income. Farmers face devastating attacks of pests, such as the voracious cotton bollworm caterpillar, which not only ruin their cotton but also attack their food crops. India produces 2.5 million tonnes of cotton each year, sustaining the livelihoods of over 17 million people, but because of the increasing cost of pest control, frequently accounting for more than 40% of the cost of growing the crop, cotton has become less and less profitable.



The voracious cotton bollworm caterpillar

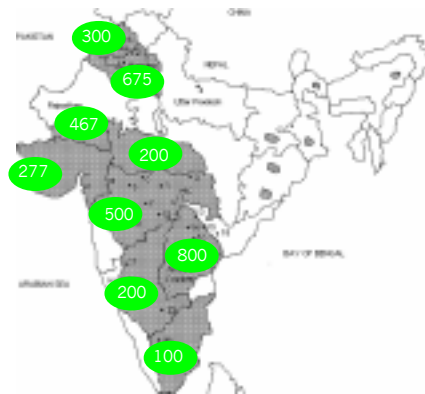
The threat of cotton bollworm devastation has increased dramatically in recent years. Through over-use of pesticides and poor spraying techniques, the pest has developed resistance to most of the available insecticides. Seeing their crops devastated by bollworms, and desperate to salvage something from their losses, farmers continue to borrow money to buy more chemicals (both toxic and expensive) and to spray ever more frequently. The net results are decreasing effectiveness against the pest and farmers are spiralling into increasing debt.

Building on previous successful DFID-funded projects, the latest cotton pest resistance project (R7813), is promoting appropriate use of insecticides for control of cotton bollworm in India, Pakistan and China. It demonstrated to farmers that, with careful timing of insecticide application, fewer applications can better manage cotton pests, and can prevent the development of pest resistance, whilst natural enemies which

assist in pest management are maintained. The farmer benefits by purchasing less pesticide and by reduced hazards from pesticide application. Farmers are enthusiastically developing their knowledge of pests and their management, why pest resistance occurs and how to prevent it.

This project operates in collaboration with a Common Fund for Commodities (CFC) project. These projects have seen recommendations for greatly improved insecticide use developed and promoted across Asia. They are strengthened by support from the Government of India. The government's Insecticide Resistance Management Programme has promoted messages from these projects to 3500 growers in 26 districts in 9 states. As a result, average insecticide use declined by 56%, yield increased 13% and net income by 74%. Health and social benefits amongst participating farmers are also being realized. The target for 2003 is to increase the number of growers per village (and double the number of villages) to reach 50,000 growers.

A further development has been the application of knowledge from this research, in Uganda, in a project (R8197) linked with USAID Investment in



Number of programme farms in the nine main cotton states

Developing Export Agriculture (IDEA) and Support for Private Enterprise and Development (SPEED). This approach is a pro-active initiative to prevent cotton pest resistance becoming an important issue in Uganda.

R7813: Sustainable control of the cotton bollworm, *Helicoverpa armigera*, in small-scale cotton production systems

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R8197: Development and promotion of appropriate IPM strategies for smallholder cotton in Uganda

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