



# An ICRISAT Success Story



## Reviving Chickpea through Integrated Pest Management in Nepal

### The problem

Chickpea (*Cicer arietinum* L.) is one of the most important grain legumes in Nepal. It is a major source of protein and forms an integral part of the Nepalese diet. Constraints to chickpea, however, include the disease botrytis grey mold (BGM) and the pod borer insect (*Helicoverpa armigera*). The result was a sharp decline in chickpea production due to increasing losses, even up to 100%.

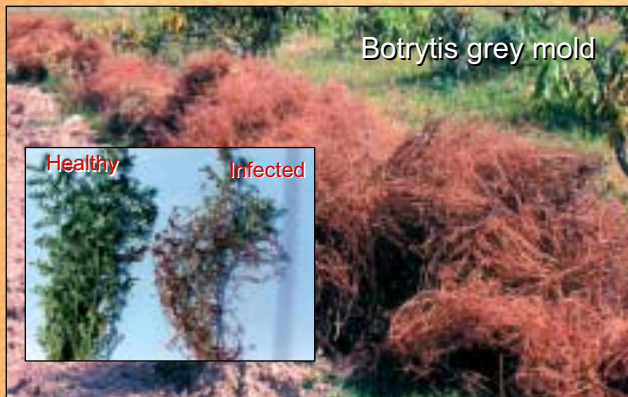
### The approach

Chickpea has great potential in Nepal, particularly in large areas of rice-fallows, which make up 390,000 ha. The introduction of Integrated Pest Management (IPM) has revived high demand for the crop.

IPM is a new concept in Nepal: nearly 75% of the country's farmers have no knowledge of the system, while the rest have a basic understanding of pest control. Therefore, there is an opportunity to arrest and reverse the declining trend of chickpea production by expanding the potential benefits of IPM package to farmers and, indeed, with farmers.

### The process

Promotion of IPM necessarily involves the participatory approach. Therefore, farmers'



BGM: Causing severe damage to chickpea crops.

participatory on-farm research and promotion was conducted in collaboration between the Nepal Agricultural Research Council (NARC), Non Government Organizations (NGOs), Farmers' Self Help Groups (FSHGs), International Agricultural Research Centers (IARCs), advanced research institutes and ICRISAT. To begin with, the concept and components of IPM of chickpea were discussed with farmers in several villages. Several IPM orientation camps and schools were conducted during the crop season.



Borers devour developing pods and can devastate entire crops.

The introduced IPM technology consisted of an improved BGM tolerant chickpea variety Avarodhi, seed treatment with fungicide, wider row spacing and need-and weather-based application of fungicide for the management of BGM and insecticide for the management of pod borer.

### Impact

All farmers who implemented the system were highly appreciative of the IPM package.

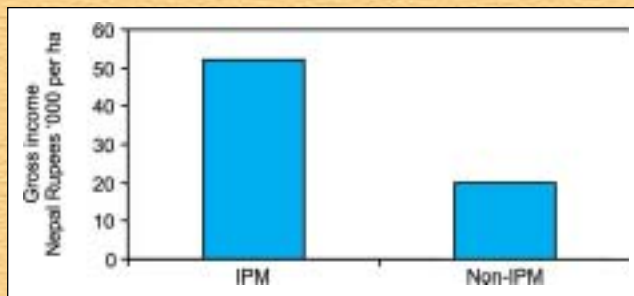


Back to school: Orienting farmers toward IPM.

Through IPM, BGM and pod borer incidence was significantly reduced and a two to six fold increase in grain yield (up to 4 t per ha) was obtained. There was also a two to five fold increase in net income following the implementation of IPM.



Nearly 20,000 farmers have converted to IPM.



A comparison of incomes from IPM and non-IPM farming.

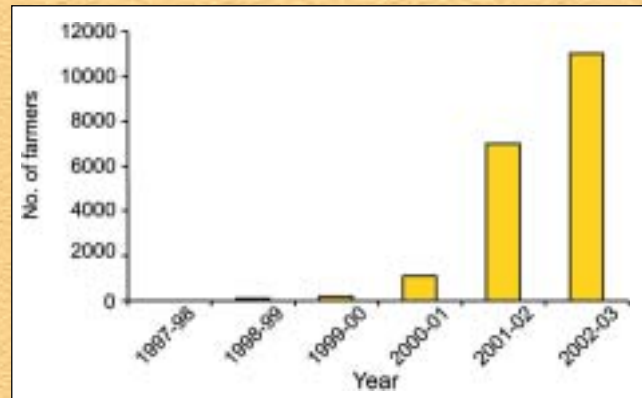
In the 1998/99 season, IPM with chickpea was tried by 110 farmers. The following season saw a five-fold increase in IPM adoption. The good news spread, and by the end of 2000/01 and 2001/02, 1,100 and 7,000 farmers respectively sowed chickpea while implementing IPM techniques. At the end of 2002/03, the IPM technology had been adopted by 11,000 farmers. The IPM technologies used



Ms Krishna Kumari Shreshta, award winner for the highest chickpea production among participating farmers who adopted IPM.



Such abundance of chickpea is now a common sight.



Growth of chickpea production in Nepal.

so successfully in Nepal also hold great potential for India and Bangladesh, which face similar problems in chickpea production.

### Donors

- Asian Development Bank, Manila, the Philippines
- Department for International Development, UK
- Australian Council for International Agricultural Research (ACIAR), Canberra, Australia

### Partners

- Nepal Agricultural Research Council
- Participating farmers and Self Help Groups
- Natural Resources Institute, Chatham Maritime, UK

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