

*National Workshop*  
*on*  
**PROMOTION OF BIO-PESTICIDES  
AND BIO-FERTILIZERS IN  
AGRICULTURE**

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## PROMOTING BIOPESTICIDES FOR CROP PROTECTION THROUGH PARTNERSHIPS – AN ON-GOING DRIVE<sup>1</sup>

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Inappropriate and excessive use of synthetic (chemical) pesticides is threatening the development of sustainable agriculture and environmental protection. This calls for an urgent need to look for different strategies to protect crops. Biopesticides (botanical and microbial) are an important alternative, with convincing track record on biosafety and efficacy, when used strategically. In addition, many of these can reach farmers at an affordable cost. Some biopesticides can be prepared by farmer themselves, thereby reducing the cost of production which is a major issue confronting farmers and policy makers alike.

Nucleo polyhedrosis virus (NPV) for managing Gram pod borer, *Helicoverpa armigera* (Hübner) was widely used at farmers' fields between 1997 and 2000 (as part of IFAD funded project) in 20 villages across three states of India, and led to good yield and substantial reduction in dependence on chemical pesticides. The drive continues in the phase II of the project (2001 to 2006). During 2005/06, NPV production units will be established in one hundred villages in partnership with local NGOs and concerned NARS in India and Nepal.

*Helicoverpa* alone has over 300 natural enemies (predators and parasites), which can be conserved if chemical pesticides are not used. Alternatives, in addition to their pest suppression abilities, are known to promote these natural enemies. Botanicals, microorganisms and products of farmers' traditional knowledge (TK) were developed into a best-bet protocol of crop protection. This protocol is being evaluated on-farm, since rainy season 2003, for protecting cotton in two villages of Andhra Pradesh (Kothapally and Yellakonda in Medak district) and one village in Gujarat (Chaswad in Bharuch district); and on vegetables in one village (Kothapally) of Andhra Pradesh. Results have been promising. For example, most of the partner farmers in village Kothapally not only spent less money, but also harvested 9% (mean of 10 farmers in 2004/05 season) to 30% (mean of 17 farmers in 2003/04 season) more cotton yield from the biopesticides applied plots than the control plots (yield 0.68 t ha<sup>-1</sup> in 2004/05 season and 1.87 t ha<sup>-1</sup> in 2003/04 season) receiving chemical pesticides.

At least two states (Sikkim and Uttaranchal) in India have declared themselves as "organic" to encourage their farmers use alternatives to chemicals for crop production and protection. Estimates from Maharashtra suggest over six lakh ha is already under organic farming. NGOs in at least three more states (Karnataka, Madhya Pradesh and Punjab) of India state that a large number of farmers are using TK products as alternatives for managing insect-pests. It thus suggests a large potential market for biopesticides. Some private individuals and companies are working as service providers to farmers for growing crops at low-cost without chemicals and have recently been recognized by the National Centre for Organic Farming, Ministry of Agriculture, Government of India. ICRISAT, in collaboration with NARS partners, is engaged in the research on alternatives to chemical pesticides. This was further strengthened with the launching of a public-private sector partnership initiative on 1 January 2005. Eleven private sector biopesticide manufacturers are members of this initiative called 'Biopesticides Research Consortium (BRC)'. Collaborative research conducted in the recent past suggests that if grown strategically crop yields can largely be similar and in some cases higher, with the use of alternatives, than chemicals. Detailed results from several studies will be discussed.

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