National Institute of Plant Health Management
Department of Agriculture & Cooperation
Ministry of Agriculture, Government of India

Plant Health News Letter

Volume: 2 July-September, 2012 Issue : 3

From the Director General's Desk

The efforts to enhance crop productivity through intensive input based agricultural practices have been eroding agroecosystems through disruption of the ecosystem services, which is also affecting plant health and biosecurity. Of the various inputs the reliance on chemical pesticides is adversely affects the delicate and dynamic balance in agroecosystems, and in the long run will adversely affect productivity and sustainability of agriculture due to pest resurgence, pest resistance, pest replacement besides impacting human health due to biomagnification of most of the non-biodegradable chemical pesticide. The heavy dependence on man-made inputs has relegated the role of biocontrol agents in pest management. The current agriculture practices are not holistic and which do not rely on system approach and as result push the farmers into a pesticide trap (pesticide treadmill effect).

Biological control has a long history of use in pest management and has gained renewed interest because of problems encountered with the use of chemical pesticides. Compared to chemical control, the biological control and its necessary integration in a systems approach of crop protection and crop production make adoption and dissemination is more and more challenging since the "active substance" is a living organism or microorganism, and their ecological role and significance is not adequately understood even by the agricultural extension Officers. However, biological control is an option which is not only practical but also ecologically sustainable for suppressing pest populations because:

1. Conservation as well as production and application of biocontrol agents are easy and safe.
2. It is cost effective and environmentally sound method of pest control, especially compared to the broad-spectrum chemical pesticides.
3. It helps in reduction/ elimination of the use of conventional chemical pesticides.
4. Once established, biocontrol agents are self-sustaining, and
5. It is target specific and
6. It does not cause pest resistance/resurgence.
7. Integrity of the food web and the agro-ecosystems remain undisturbed.

A number of technologies have been developed for mass production of the biocontrol agents (including parasite, predators, parasitoids, etc.) and biopesticides (including bacteria, fungi, viruses, botanicals etc.) and there is a need for quick dissemination of such technologies. Entomophages (parasitoids and predators) can best be utilized by developing the production facilities right in the villages as a cottage industry and progressive farmers can take up their production as a source of additional income and to meet their own requirements. Microbial biopesticides have a comparatively longer shelf life and can be produced commercially. Despite various efforts made during last several decades for commercialization of various biocontrol agents and biopesticides in

Dr. K. Satyagopal, IAS, Director General - NIPHM

crop production, still their use is limited. The major limiting factor for wide spread use of biocontrol agents is the lack of appreciation about their role among various stakeholders.

Successful biocontrol of pests is possible only with an active role of extension functionaries, at least during their initial phase of adoption and implementation by the farmers. Large scale use of biological control will require stepping up the technical training of Agricultural extension Officers and farmers. There is also a need to step ongoing efforts of quality control of biocontrol , which is crucial to ensure reliable effectiveness and maintain confidence of farmers for biocontrol.

Visualizing the importance of biocontrol agents in pest management in particular, & plant health management as a whole and to ensure the availability of quality biopesticides NIPHM initiated capacity building programmes on “Production protocol for bioagents and quality assessment and quality management of microbial biopesticides”. Further NIPHM is promoting the agroecosystem analysis based plant health management (AESA based PHM) in combination with ecological engineering (EE) approaches, in which the major emphasis is on conservation of natural biocontrol agents. This is the time for change over from reliance on solely chemical pesticides to other eco-friendly options such as insect parasitoids, predators, pathogens, fungal antagonists, etc. I hope the agricultural functionaries will take advantage of the capacity building programmes offered by NIPHM.

(K. Satyagopal)
Director General