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Invited Speakers and abstracts of their Talk

I. Agricultural & Forest Entomology

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Title of the talk

"IPM in Field Crops: Current status and prospects"

Abstract

Our national priorities today comprise production of safe quality food, conservation of environment, doubling of farmers' income and promotion of exports. Insect pests, diseases, nematodes and weeds constitute major biotic stresses in crop production inflicting 15 to 25 % or more yield loss; the monetary value of which in India has been estimated to be exceeding Rs 1.9-2.25 lakh crores. There is thus ample scope to enhance our food production to an extent of 60 mt of food grains and 65.3 mt of horticultural produce by curtailing avoidable pest induced yield losses. Pesticides have, of course, played a commendable role in achieving attainable yield in crops and in protecting us against disease vectors. However, sole reliance on pesticides has created several pest control and environmental problems. The IPM has been our 'Cardinal Policy' for crop protection since 1985 and a lot of efforts have been made and are being made to promote its use among farmers so as to minimize pesticide use with the least possible disruption to agro-ecosystems and encouragement to natural pest control mechanisms. Despite continuous efforts, IPM adoption among farming community has not been very satisfactory due to several reasons; a few of these being lack of awareness among various stakeholders, unavailability of non-chemical inputs and lack of holistic IPM modules. IPM has potential to provide effective solution to obnoxious pest problems. IPM is a highly decision intensive activity and requires tools and techniques for its execution. Assessment and extrapolation of yield losses are mandatory at both the strategic and tactical decision levels. Empirical approach has generally been used for establishing damage functions between pest damage and crop yield. However, these models do not explain the physiological mechanism of yield loss due to pests and thus behave in a location specific manner. On the other hand, the assessment of crop losses due to pests with mechanistic

approach through simulation models has proved to be a better approach as it is based on the concept of pest damage mechanisms that specify plant physiological processes affected by the pest injury. Crop-pest simulation models can be used to establish location -specific decision support tools, thereby helping to overcome deficiency of the empirical approach.