A Brain storming session on “Insecticide Resistance Management in Horticultural Crops – Way Forward!” was organized jointly by the Association for Advancement of Pest Management in Horticultural Ecosystems (AAPMHE) and the Indian Institute of Horticultural Research (IIHR) on August 30, 2014 at IIHR, Hessaraghatta, Bangalore. About 70 delegates from different ICAR institutes, State Agricultural Universities, representatives from private sector and students participated in the deliberations.

The Meeting started with Dr. A. K. Chakravarthy, Head, Division of Entomology and Nematology, welcoming all delegates. Dr. K. R. Kranthi, Director, Central Institute of Cotton Research (CICR), Nagpur and Dr. B. V. Patil, Ex-Vice-Chancellor, UAS, Raichur were the guests of honour. Dr. T. Manjunatha Rao, Director, IIHR, Bangalore, presided over the inaugural session. A compilation of abstracts and invited papers from researchers in the form of CD was released on the occasion.

Dr. K. R. Kranthi delivered the key note address on the overview of insecticide resistance in arthropods with special reference to cotton bollworms and Bt cotton. He mentioned the importance of various groups of insecticides and their usage, role of public and private sectors- multinationals, NGOs, technology providers etc., in releasing new molecules for IPM and banning insecticides affecting environment and ecology. He expressed concern that in spite of several research efforts on IRM, the ground reality remains grim with commercial interests of pesticide firms and dealers determining the use or ban of insecticides. Dr. B. V. Patil emphasized the role of young researchers in educating farmers to solve the resistance problem. He mentioned that insecticides have become a major component of pest management particularly on horticultural crops. Lack of knowledge on new molecules, mode of action, misuse/overuse of insecticides are the causes for emergence of resistance in pests.

The following are some of major recommendations emerged out of technical deliberations.

The use of non-chemical strategies such as pest exclusion (e.g., screening), host-free periods, crop rotation, sterile insect technique, biological control and weed control should find place in IPM to reduce the need to use chemicals and consequently slow down the development of pesticide resistance.

There is a need to further study the role of synergists like plant oils (Neem and Pongamia), petroleum based horticultural mineral oils, agricultural soaps and micronutrients for effective management of insecticide resistance.

Studies on ready to use mixtures/cock-tail formulations has to be urgently initiated as the composition of such cocktails is often unknown and it often increases the chances of selection for resistant individuals.

The waiting period for pesticides has to be furnished along with pesticide information and made available to farming community along with
the label claim for residue-free produce and for effective IRM.

There is a lack of information on compatibility of new insecticide molecules among themselves with fungicides, fertilizers, weedicides etc. Compatibility studies involving insecticides are urgently required.

Improper disposal of left over pesticides into wetlands, water bodies should be strictly mentioned and the concerned should be booked under the law.

There is a strong need to create awareness among different stakeholders regarding label claim. For crops where there is no label claim, clear guidelines may be provided for recommendations.

Despite recommendations from research institutions and RSKs, KVKs, ZARs, RRs, universities and central government institutes, pesticide dealers/traders remain main consultant for farmers on the information of pesticide usage. This is defeating the purpose of managing resistance, IPM strategies. Hence there is a need to strengthen extension network and educate farmers on the ill effects of over dosages, unwanted cocktails etc.

Information on setting up and maintaining an IPM monitoring program has to be made available for the farming community through farm advisors to determine the best application timing for pesticides to minimizing pesticide use.

A. K. Chakravarthy  
D. Lokeshwari  
K. R. Latha  
V. Sridhar  
Indian Institute of Horticultural Research, Bangalore - 560 089