8 APPLICATION OF IPM FOR MAJOR AGRICULTURAL AND HORTICULTURAL CROPS

MESSAGE OF HOPE

FAO-EU Project on IPM for Cotton shows the way …

Farmer Field Schools (FFS), 55 such schools at present run by 29 facilitators including 4 from NGO’s under season long training, have demonstrated under an FAO-EU sponsored project in Akola, Washim and Yavatmal district that ordinary farmers could be trained extremely effectively in IPM, not only to handle their own fields but also to act as scout and guide for other farmers in nearby areas. It is projected that a cadre of 200 facilitators/ agro-entrepreneurs with season long training could run 800 FFS in one year for next three years creating a cadre of 60,000 farmers trained in IPM who could act through 1000 bio-agent laboratories under the supervision of facilitators and could take care of IPM needs of entire 20 lakh farmers growing cotton over 30 lakh hectares in the state. At a nominal project cost of Rs.10.00 crore each year for three years in succession could save at least Rs.1000/ Ha of chemical spraying cost over 30 lakh Ha saving Rs.300 crores on the cost of cultivation whereby giving higher returns to the farmers and greater non-farm employment to at least 10,000 rural youth if IPM is taken up on cotton in the state in a mission mode.

8.1 Future emphasis in the state should be on eco-friendly integrated pest and disease management for sustainable agriculture growth. This can be achieved through the use of various bio-control agents. In addition, plant-derived pesticides (botanicals), secondary metabolites from micro-organisms (anti-biotics) and insect pheromones applied for mating disruption, monitoring or lure-and-kill strategies should be promoted in IPM programmes.

8.2 Constant monitoring and surveillance of insect, pests and diseases should be a compulsory activity. Moreover, bio-control laboratories in different regions of the state should be established to meet all the requirements of IPM. Bio-pesticides under different projects should be made available and the programme should be extended to more areas in future.

8.3 At present, the IPM is demonstrated under the field condition over 10-15 ha scattered at different locations. In order to make the results visible, concept of IPM village with identified crop over an area of 200 ha in each village under cotton, chickpea, pigeonpea and rice is recommended. The ultimate objective should be to spread IPM technology to major crops in all the districts of Maharashtra.

8.4 With an emphasis on the use of bio-pesticides, it is necessary to have laboratory facilities at different levels wherein samples of bio-pesticides could be
analyzed for its quality parameters. Therefore, the laboratories with the State Agricultural Universities will need upgradation.

8.5 At present only one pesticide residue analysis laboratory is available at Pune. A new laboratory is likely to come up at Nagpur. In order to promote the export of our agricultural produce, pesticide residue laboratories are required to be established at Sangli, Nasik and Solapur since grapes and pomegranate are two important crops exported from these districts. It is proposed to have one pesticide residue laboratory for each revenue division in the State. Keeping in view, future potential in agricultural exports, such labs need to be established at Ratnagiri and Aurangabad as well.

8.6 With the liberalization of the economy, import and export of agricultural produce are going to increase in the state. It is, therefore necessary to establish plant quarantine laboratories at Pune and Nasik for issuing phytosanitary and post sanitary certificates.

8.7 Integrated pest management package of practices are not perfected for any particular area. Formulation of location specific package of practices and their fine tuning is necessary. IPM module of fruit trees, viz. grape, guava, pomegranate, banana, citrus, cashewnut and mango are required to be framed for the state. The strategy should be developed for very restricted use of pesticides in these areas.

8.8 With the increasing use of the green houses in the state, IPM packages for protected cultivation of horticultural crops, which are not available, need to be developed.

8.9 Although Bt transgenic plants are being used, no testing facility is in operation in the State of Maharashtra under Government sector. Hence, it is necessary to establish at least one well equipped laboratory at State level for research on molecular genetics and development of transgenic as well as testing of any such genetic material available in the market.

8.10 With the liberalization of economy and State of Maharashtra being very important in horticulture plantation, import of planting material in a bulk from numerous destinations cannot be overruled. In order to control situation and advise the Government on such issue, pest risk analysis will be necessary. Such studies will have to be undertaken by all the Agricultural Universities in the State.

8.11 Conservation of biodiversity is an important area for which taxonomic identification of flora and fauna, including all species of importance to agriculture such as birds and insects i.e. any insect pests and their natural enemies including microorganisms will be necessary. Maharashtra being a mega biodiversity state, research and education on bio-systematics will need strengthening in at least one of the four Agricultural Universities in the State. Organisations specialising in such
studies such as BNHS, BSI, ZSI and the research wing of the state forest department will need to be strengthened.

8.12 Although chemical pesticides are to be discouraged, still their use cannot be eliminated totally. Therefore new molecules of plant origin and safer synthetic chemicals will have to be discovered constantly. This is more important since most of the pesticide industries are located in Mumbai. In collaboration with the State Agricultural Universities, it should be possible to meet this requirement for which necessary infrastructure should be created in at least one agricultural university.

8.13 Farmers need to be educated for removal of pesticide residues from agricultural produce, water bodies and spray equipments and for proper usage as well as storage of such chemicals including their careful handling by the farm workers.

8.14 Training of all the stake holders – farmers, scouts, facilitators, bio-agent producers – is the essence of IPM and therefore state should draw up a comprehensive plan for large scale capacity building in the field of IPM for effective scouting, monitoring of crop pests and natural enemies as well as for evaluating intensity of attack, production and application of bio-agents along with safe and judicious use of pesticides if necessary. Farmers Field Schools (FFS) promoted through trained facilitators has been a successful model of IPM as observed under FAO-EU project and the same could be replicated on large scale for a period of three years for which adequate funding should be made available by the state.