

# AN INTEGRATED PEST MANAGEMENT (IMP) APPROACH AS AN ALTERNATIVE TO SAFE PESTICIDE USE IN NEPAL

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In the last four decades, Nepal has introduced several categories of insecticides including organo-chlorine, organo-phosphates, carbonates, and synthetic pyrethroids. Most of the insecticides used were broad spectrum causing tremendous damage to human health and environment including soil microbes and water biota. These toxic chemicals, with higher persistence in nature, were chosen for longer period of pest control by the innocent users in the past. Some of these biological toxicants are still in use. The target species were insect pests of agricultural crops in agroecosystems, but, in the food chain, other beneficial natural enemies are also victimised. Besides agriculture, the Ministry of Health has also used insecticides against vectors of Malaria and Kala azar. Insecticides contaminated the major portions of the environment, killing the insects on the surface soil and under the soil and contaminated the water table, forming different metabolites. Consequently, biological magnification was traced from dead animals including fishes from the lakes of Pokhara Valley. Resurgence has already been noticed as overuse of insecticides has caused minor pests to change their status to major pests after a short colonisation. Almost all insecticides used in the past for three consecutive years have shown resistance to insecticides and produced biotypes. A study in western Nepal indicates that even synthetic pyrethroids that were introduced during late 1980s have shown 12 to 56-fold resistance to *Heliothis armigera*. Misuse of insecticides has been reported to have killed fishes in the ponds, canals, rivers, and rivulets. Due to lack of awareness among the users about the safe use of pesticides, an increasing trend of pesticide poisoning is observed in Nepal and there is also an increase in suicides through pesticide ingestion. Integrated pest management (IPM) approach is an alternative to safe pesticides use in Nepal.