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Abstract

Use of Biopesticide by Farmers for Integrated Pest Management of Crops in india

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Abstract:

Agriculture has been facing the destructive activities of numerous pests like fungi, weeds, and insects from time immemorial, leading to radical decrease in yields. Insect pests are the big enemies of farmers as they destroy crops, stored grains; act as a vector of diseases of livestock etc. Indiscriminate use and overdependence on chemical pesticides in pest control also resulted in insecticide resistance in pests, pest resurgence which results in minor pests attaining major status, elimination of natural enemies, higher levels of residual toxicity in soil, environmental pollution by contaminating air, soil, and water which have harmful effect upon human and wild life. Therefore, it has now become necessary to search for the alternative means of pest control, which can minimize the use of synthetic pesticides. The increasing concern on environmental safety and global demand for pesticide residue-free food has evoked interest in pest control through use of botanicals, biopesticides, and biocontrol agents (natural enemies) which offers a good alternative to manage the insect, pests, and Botanicals are extracted from various plant parts (leaves, stems, seeds, roots, bulbs, rhizomes, unripe fruits, and flower heads etc.) of different plant species. Plant extracts are also called as Green Pesticides, Botanical Pesticides, Plant Pesticides, Botanicals, Ecological pesticides and the method which utilizes botanicals in insect pest management is called as Indigenous Ethno Botanical Crop Protection. Botanical pesticides possess an array of properties including toxicity to the pest, repellent, anti-feedant, insect growth regulatory activities against pests of agricultural importance. These have broad spectrum activity, are less expensive and easily available because of their natural occurrence, have high specificity to target pests, and no or little adverse effect on beneficial insects, resistance development to them is slow or less common, poses least or no health hazards and environmental pollution, have less residual activity and are effective against insecticide resistance species of insects, and have no adverse effect on plant growth parameters. More than 2500 plant species belonging to 235 families have been found to possess the characteristics required for an ideal botanical insecticide. About 350 insecticidal compounds, more than 800 insect feeding deterrents, and a good number

of insect growth inhibitors and growth regulators have been isolated from various plant species.

Biography:

Arun Kumar is research scholar by Agriculture Entomology at Chandra Shekhar Azad University of Agriculuture and Technology, Kanpur, Uttar Pradesh, India. He had done B.Sc Agriculture from CCS University, Meerut, and Master of Science completed in 2019 from Sardar Vallabhbhai Patel University of Agriculture and Technology, Meerut, India . During in Master degree my reseach topic "Studies on population fluctuation of mango hopper amaritodus atkinsoni (leth) and their management in western plane zone of u.p."

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