GOVERNMENT OF INDIA
SCIENCE AND TECHNOLOGY
LOK SABHA

UNSTARRED QUESTION NO:376
ANSWERED ON:23.07.2003
DEVELOPMENT OF HERBAL PESTICIDE
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Will the Minister of SCIENCE AND TECHNOLOGY be pleased to state:

(a) whether the Department of Bio-Technology is engaged in developing herbal pesticides indigenously;

(b) if so, the details thereof; and

(c) the details of similar research on environment friendly products?

Answer

MINISTER OF STATE FOR SCIENCE AND TECHNOLOGY (SHRI BACHI SINGH RAWAT)

(a), (b) & (c) : The Department of Biotechnology, Govt. of India has launched a multi-institutional and inter disciplinary programme on biological control of crop pests, diseases and weeds under Integrated Pest Management. This programme has a component on the development of biodegradable and eco-friendly botanical pesticides. Several projects have been implemented through which the insecticidal and antifeedant activity of various plants have been established viz. Annona squamosa, Derris tephrosia, Acorus calamus, Melia azaderach, Walsuria trifoliata, Dysoxylum ficiforme, D. malabaricum, Azadirachta indica, Vitex negundo etc. In addition, Neem and Pungum oil alone and in combination have proved as effective sprays controlling rice sucking insect pests and at the same time were safer to natural enemies. Three new organic solvent free 60 EC formulation as Neem oil and Pungum oil 1:1 were made for the first time and evaluated.

The nematicidial efficacy of various neem products against the major groups of phytonematodes associated with the four main pulse crops namely, mungbean, cowpea, pigeonpea and chickpea were confirmed through bioassay trials in green house and field conditions.

Investigations are also underway on some antifungal compounds from Azadirachta indica, Cedrela toona, Alianthus excelsa and Samadera indica. Antifungal neem seed limonoids were identified by bioassay. Sixteen phytopathogens were tested in vitro and species susceptible to neem triterpenoids were identified. Effectiveness of the enriched extracts was demonstrated against selected diseases such as anthracnose of pepper and ring spot disease of cabbage in field trials.

In an All-India coordinated research project on development of environment friendly and plant-based pesticides, initiated by National Bioresource Development Board of this Department, seven test insects have been identified viz. Helicoverapa armigera, Spodoptera litura, Plutella xyllostella, Bemisia tabacii, Aphis craccivora, Anopheles and Tetrancychus, sp. for detail study. Till date 172 plant/plant part samples have been collected, extracted and screened against the above-mentioned test insects. The plants are being screened for pesticidal, larvicidal, antifeedant and repellent activities, wherever applicable.

Many other projects have been successfully implemented for development of suitable eco-friendly formulations, such as biofertilizer, microbial consortia and phytoremidation packages.