

**GOVERNMENT OF INDIA
AGRICULTURE
LOK SABHA**

STARRED QUESTION NO:91
ANSWERED ON:05.03.2007
PESTICIDE RESISTANT PATHOGENS
Ahir Shri Hansraj Gangaram

Will the Minister of AGRICULTURE be pleased to state:

- (a) whether the pathogens causing diseases in crop have developed resistance against the pesticides due to its excessive use;
- (b) if so, the details thereof;
- (c) whether the Government is running any research programmes to develop more effective pesticides;
- (d) if so, the details thereof;
- (e) whether the Government proposes to conduct research to develop a new technology for protecting crops against pathogenic diseases without the use of pesticides in view of its adverse effect; and
- (f) if so, the details thereof?

Answer

THE MINISTER OF AGRICULTURE (SHRI SHARAD PAWAR)

(a) to (f): A Statement is laid on the Table of the House.

STATEMENT IN RESPECT OF PARTS (a) TO (f) OF LOK SABHA STARRED QUESTION NO.91 TO BE ANSWERED ON 05/03/2007 REGARDING 'PESTICIDE RESISTANT PATHOGENS'

(a) There is no confirmed report from India about the development of resistance to pathogens in any crop against the recommended pesticides that are applied under Good Agricultural Practices.

(b) The question does not arise.

(c) & (d): Keeping in view the anticipated adverse effects of chemical pesticides, there are research programmes to develop suitable biocontrol agents as well as bio-pesticides as an alternative option to chemical pesticides to reduce the disease incidence.

Research institutes including Project Directorate for Biological Control, National Centre for Integrated Pest Management and National Bureau of Agriculturally Important Microorganisms are involved in the identification and development of promising strains of biocontrol agents against specific plant pathogens.

(e) & (f): Research programmes to reduce the dependence on synthetic chemical pesticides for disease management have led to the development of number of resistant/ tolerant genotypes against target diseases. Disease resistant crop varieties are recommended for cultivation along with non-chemical options such as biological control, bio-pesticides as well as by cultural methods of disease management under integrated disease management programme.

Fungal antagonists (such as *Trichoderma viride*, *Trichoderma harzianum*, and *Trichoderma virens*), bacterial antagonists such as *Pseudomonas fluorescens* have been identified against various pathogens in crop plants, techniques mass-produce them for being used in agricultural farms are popularized extensively for commercial production.