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Knowledge Level of Brinjal Growers Regarding Application of Bio-pesticides in Bulandshahr District of Western Uttar Pradesh

Maurya, A. S.[1*], R. N. Yadav[1], Sarju Narain[2], Prerana Kaushal[3] and V. K. Singh[1]

*Department of Agricultural Extension & Communication, SVPUA & T, Modipuram, Meerut, (U. P.) India

[2]Assistant Professor, Department of Agricultural Extension, B.N.P.G. College, Rath, Hamirpur, (U.P) India

[3]Department of Home Science Extension, BHU, Varanasi, (U. P.)-251001

*Corresponding Author E-mail: 483agabhilash@gmail.com

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ABSTRACT

The present investigation was carried out during the year 2016-17 in Bulandshahr district of Western Uttar Pradesh to assess the knowledge level of brinjal growers regarding application of bio-pesticides in brinjal production. Bulandshahr district comprise of 16 blocks in which two blocks namely Lakhoti and Jahangirabad were purposively selected. Four villages namely Dhakka, Dhakroli from lakhoti block and Shekhpur, Pasoli selected from Jahangirabad block. From the selected each village's 20 respondents were selected randomly, thus a total of 80 brinjal growers constituted the sample size for the study and data were collected by means of personal interview with the help of pre structured schedule.

The study depicted that most of the brinjal growers of selected areas were not having proper knowledge about importance of Bio-pesticides in brinjal production. They were medium level of knowledge to summer deep ploughing while they were have low level of knowledge about importance and practices related to soil treatment, seed treatment, seedling treatment and foliage application of Bio-pesticides in brinjal cultivation for measurement of fruit & shoot borer, jassid & aphids and whitefly. So, it is an argent need of skill oriented training to brinjal growers regarding importance and its application for higher and safer brinjal production.

Key words: *Bio-pesticides, Knowledge, Brinjal, Brinjal growers.*

INTRODUCTION

Brinjal, also known as eggplant or Aubergine belonging to the family "Solanaceae. It is a vegetable commonly grown by the Indian farmer's community. The family contains more than 2000 species and 75 genera. In the genus "Solanum" there are three main species *viz;* esculentum (large round), serpentium (long slender) and depressum (dwarf brinjal). The botanical name of cultivated brinjal is *Solanum melongena* L. and originated in India. Currently, it is extensively grown in Bangladesh, India, Pakistan, Nepal, U.A.E, Sri Lanka, Egypt and other warmer countries of the world.

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Among all summer grown vegetables with semi-perennial nature, brinjal is almost available throughout the year and consumed in various forms by all classes of people. World's statistics reveal that brinjal is second to potato and sweet potato in terms of production. Worldwide, production of brinjal is mainly in China, India, Egypt, Turkey and Indonesia with more than 85%. Its area under cultivation is more than two million hectares with 35 million tonnes production[1].

Brinjal (*Solanum melongena* L.) is the fourth most important vegetable and contributes production (9 %) after potato (28 %), onion (10 %) and tomato (11 %) in India. Three crops of brinjal are taken in India; first during the kharif season (June- September), second during the rabi season (November-February) and third in the month of March. In India, brinjal is primarily grown by small and marginal farmers for whom it is an important source of income[2].

Application of chemical pesticides dates back in India since 1948, while the production started in 1952 with the establishment of manufacturing plant of DDT and BHC near Calcutta. The pesticide consumption in India during the period 1954-2000 shows that it has raised from 434 metric tonne to 46,195.16 metric tonne. Cotton (36%) is the highest pesticide consuming crop followed by rice (20%). Andhra Pradesh is the highest pesticides consuming state (23%) followed by Punjab and Maharashtra. At present, nearly 150 pesticides are registered with legal application in India. Currently, India is the largest producer of pesticides in Asia and ranks 12th in world for application of pesticides. Despite their enormous benefits the unregulated and indiscriminate application of pesticides has raised serious concerns about environment and human health, contamination of surface water, reducing beneficial micro-organism and quality of nutritive food materials, harmful effects on birds and other wildlife etc. 25 million agricultural workers in the developing countries are suffering from poisoning every year. Besides these, alarming numbers long term exposure at even low concentration causes serious health problems such as immune-suppression, hormone disruption, diminished intelligence, reproductive abnormalities, cancer and other chronic diseases. The obvious reason lies in the research data that says only 0.1% of pesticide application targets the pest rest 99.90% remain and seep in environment. So minimize the hazards of chemical pesticides with their regulated and controlled application as well as focuses on the importance of bio-pesticides and Integrated Pest Management for sustainable development in Indian Agriculture[5].

MATERIALS AND METHODS

This study was conducted in Bulandshahr district of Western Uttar Pradesh during the year 2016-17. Bulandshahr district comprise of 16 blocks in which two blocks namely Lakhoti and Jahangirabad were purposively selected. Two villages selected from each blocks. From the selected each village's 20 respondents were selected randomly, thus a total of 80 brinjal growers constituted the sample size for the study. The data were collected through personal interview with the help of semi structured schedule. The data were analysed and find out the percentage and rank order.

RESULT AND DISCUSSION

English and English (1958) defined knowledge as a body of understood information possessed by an individual.

It means the level of knowledge of Brinjal growers was to recommended practices and about each practice a definite question was set, the measure of question given by the respondents was measured by three point scale i.e. high, medium and low level of knowledge.

Adequate knowledge of recommended new and improved bio-pesticides & their application against major and minor insect-pest's control measurement in brinjal production. There are various factors that need to be taken care of when promoting the adoption of improve pests control measurement practices among brinjal growers. The essential data was therefore collected to

systematically analyse the present knowledge level of brinjal growers regarding brinjal production practices and adoption of improved recommended pests management practices. Reddy and Reddy found that variables such as farm power, farm size, contact with extension agency, pests and disease management, achievement motivation, scientific orientation and risk preference were positively and significantly associated with knowledge level of the contact farmers.

Table 1: Distribution of respondents regarding knowledge level of bio-pesticides in brinjal production: N=80

S. No.	Statements	Fully Known		Partially known		Not Known	
		F	P	F	P	F	P
1	Do you know about the use of bio-pesticides in brinjal production?	02	02.50	26	32.50	52	65.00
2	Do you know about the use of bio-agent in brinjal production?	00	00.00	02	02.50	78	97.50
3	Do you know about the use of natural enemies in brinjal production?	00	00.00	01	01.25	79	98.75
4	Do you know about the soil/seed/seedling treatment through bio-pesticides in brinjal production?	05	06.25	34	42.50	41	51.25
5	Do you know about the insects-pests resistant variety of brinjal?	00	00.00	03	03.75	77	96.25
6	Do you know about the advantage of bio-pesticides in brinjal production?	01	01.25	11	13.75	68	85.00

F=Frequency P=Percentage

Table 2: Distribution of the respondents according to their knowledge level regarding fruit & shoot borer and their measurement through bio-pesticides: N= 80

S. No.	Protection measures	Knowledge level					
		Low		Medium		High	
		F	P	F	P	F	P
1.	Summer deep ploughing	21	26.25	41	51.25	18	22.50
2.	Soil treatment	57	71.25	23	28.75	00	00.00
3.	Seed treatment	66	82.50	14	17.50	00	00.00
4.	**In standing crop**						
	Botanical bio-pesticides (Neem based, Garlic extract, Tobacco extract)	58	72.50	20	25.00	02	02.50
	Light traps/Pheromone traps	56	70.00	24	30.00	00	00.00
	Bio-agents	67	83.75	13	16.25	00	00.00

F=Frequency P=Percentage

Table 3: Distribution of the respondents according to their knowledge level of jassid & aphid and their measurement through bio-pesticides: N=80

S. No.	Protection measures	Knowledge level					
		Low		Medium		High	
		F	P	F	P	F	P
1.	Summer deep ploughing	15	18.75	45	56.25	20	25.00
2.	**In standing crop**						
	Botanical bio-pesticides (Neem based, Garlic extract, Tobacco extract)	52	65.00	20	25.00	08	10.00
	Light traps/Pheromone traps	51	63.75	29	36.25	00	00.00
	Bio-agents	80	100.0	00	00.00	00	00.00

F=Frequency P=Percentage

Table 4: Distribution of the respondents according to their knowledge level regarding whitefly and their measurement through bio-pesticides: N=80

S. No.	Protection measures	Knowledge level					
		Low		Medium		High	
		F	P	F	P	F	P
1.	Summer deep ploughing	24	30.00	45	56.25	11	13.75
2.	**In standing crop**						
	Botanical bio-pesticides (Neem based, Garlic extract, Tobacco extract)	57	71.25	21	26.25	02	02.50
	Light traps/Pheromone traps	53	66.25	22	27.50	05	06.25

F=Frequency P=Percentage

Table 5: Distribution of the respondents according to knowledge level of recommended doses of bio-pesticides against various methods: N=80

S. No.	Application practices	Knowledge level					
		Low		Medium		High	
		F	P	F	P	F	P
1.	Soil treatment	55	68.75	25	31.25	00	00.00
2.	Seed treatment	63	78.75	17	21.25	00	00.00
3.	Seedling treatment	68	85.00	12	15.00	00	00.00
4.	Foliar spray	52	65.00	25	31.25	03	03.75

P=Percentage, F=Frequency

Table no. -1 shows that, majority of respondents 65.00 %, 97.50 %, 98.75 %, 51.25%, 96.25 %. and 85.00 %, were observed under not known category of knowledge level about the use of bio-pesticides and advantages of bio-agents, natural enemies, soil/seed/seedling treatment, insect-pest's resistant varieties and bio-pesticides in brinjal production, respectively.

It is evident from **Table no. 2** that maximum nom of respondents 71.25%, 82.50%, 72.50%, 70.00% and 83.75% belonged from low level of knowledge category about the Soil/Seed treatment, foliage spray, Light & Pheromone traps, Bio-agents, respectively and 51.25% respondents found under the medium level of knowledge about summer deep ploughing in measurement of fruit and shoot borer.

The data of the **Table no. 3** shows that most of the respondents (65.00%, 63.75% and 100%) found under the low level of knowledge about Foliage spray, Light/Pheromone traps, Bio-agents, respectively and 56.25 % respondents found under the medium level of knowledge about the summer deep ploughing in the measurements of jassid and aphids in brinjal production through bio-pesticides.

The data are presented in **Table no. 4** the result revealed that maximum nom. of respondents 71.25% and 66.25% belonged from low level of knowledge about Foliage spray and Light/Pheromone traps, respectively. It was also observed that 56.25 % respondents belonged from medium level of knowledge about summer deep ploughing in measurements of whitefly in brinjal production.

It is clear from the **Table no. 5** that majority of the respondents 68.75%, 78.75%, 85.00% and 65.00% were found under the low level category of knowledge about the recommended doses of bio-pesticides in various methods like soil treatment, seed treatment, seedling treatment and foliage spray, respectively in brinjal production for the measurements of various insects and pests through bio-pesticides.

SUMMARY AND CONCLUSION

It is concluded that majority of the respondents belonged to low level category of knowledge about importance of bio-pesticides and its application practices in brinjal production for the measurements of fruit & shoot borer, jassid & aphids and white fly.

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