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Knowledge of recommended plant protection practices among brinjal growers

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Abstract

This study was carried out among a sample of 120 brinjal growers randomly selected from Thalaivasal and Gangavalli blocks of Salem district in Tamil Nadu. This study aimed to access the knowledge level of brinjal growers on plant protection practices. Well-structured interview schedule was used for data collection and collected data were analyzed by using appropriate statistical tools. The findings of the study revealed that majority of the brinjal growers had medium to high level of knowledge on plant protection practices in brinjal cultivation. Cent per cent of the respondents had knowledge on selection of variety / hybrid. More than 90.00 per cent had knowledge on summer ploughing, quantity of fertilizer recommended, cutting and burning of affected plants and recommended fungicides.

Keywords: Plant protection practices and knowledge

Introduction

In India, the area of vegetable cultivation is increased from 55.93 Lakh ha in 1992 to 93.96 Lakh ha in 2014 (National Horticulture Board, 2014-2015) ^[1]. In Tamil Nadu, Out of about 8.90 lakh ha of horticultural crops; vegetable crops are grown in 2.34 lakh ha. (TANHODA, 2015) ^[5]. In modern agriculture, plant protection is considered to be the key to prospective and assured returns to investment. Pesticides have contributed for management of pest and by increasing the yield of the crop, but there is growing concern about indiscriminate use of pesticide in agriculture.

Tamil Nadu ranks first in demand of pesticides in India (Pesticide and documentation unit, 2010) ^[2]. The Agricultural scientist and extension functionaries are creating awareness on adoption of integrated pest and disease management practices and environmentally friendly technologies to the farmers from time to time (Santhasheela, 1999) ^[4]. However, the adoption of scientific way of plant protection practices is found to be low among the farmers due to varied reasons. Hence, the present study was designed to find out the knowledge level of brinjal growers on recommended plant protection practices in brinjal cultivation.

Methodology

This study was conducted in Salem district of Tamil Nadu which was purposively selected as it is one among the major brinjal cultivated district in Tamil Nadu, besides the area is closer to the native place of the researcher. Thalaivasal and Gangavalli blocks of Salem district are selected based on more area under brinjal cultivation. Nine independent variables and one dependent variable namely knowledge about plant protection practices on brinjal cultivation were selected based on discussion with extension scientist and extension officials

The data was collected by using a well-structure and pre-tested interview schedule along with photographs/ visuals/ live specimens of the symptom of pest and disease infestation in brinjal crop. The data collected were coded, tabulated and analyzed using mean, percentage, correlation and multiple regression for interpretation of data. Based on the total score, the brinjal growers were classified into low, medium and high knowledge categories using mean and standard deviation.

Findings and Discussion**Overall Knowledge**

The distribution of brinjal growers according to their knowledge level on the recommended plant protection practices in brinjal cultivation is presented in the Table 1.

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Table 1: Distribution of brinjal growers according to their overall knowledge level

S. No.	Category	Number	Percent
1.	Low	15	12.50
2.	Medium	82	68.34
3.	High	23	19.16
	Total	120	100.00

Source: Primary survey

The study reveals that majority of the brinjal growers (68.34%) had medium level knowledge followed by high (19.16 %) and low (12.50 %) levels knowledge on plant protection practices in brinjal, due to the fact that majority of them had medium level scientific orientation and extension agency contact and the extension services provided by line department officials, scientists and input dealers. The findings are in conformity with the results of Sangeetha (2009) [3].

Practice wise knowledge level of brinjal growers on plant protection practices

The knowledge on practice-wise plant protection in brinjal by the respondents were results were analyzed and discussed in the table 2 below

Table 2: Practice wise knowledge level of plant protection practices followed by brinjal growers (n = 120)

S. No	Category	*Number	Per cent
1	Identification of pest and diseases	68	56.60
2	Summer ploughing	111	92.50
3	Selection of variety / hybrid	120	100.00
4	Seed treatment	48	40.00
5	Season	78	65.00
6	Blanket recommendation of fertilizers	109	91.00
7	Chemicals and its dosage	40	33.00
8	Crop rotation	49	40.80
9	Use of traps	78	65.00
10	Recommended weedicide and its dosage	73	60.80
11	Beneficial insects	42	35.00
12	Pesticide compatibility	78	65.00
13	Recommended fungicide	115	96.00
14	Botanicals recommended and its dosages	30	25.00
15	Safe handling of pesticides	39	32.50
16	Safe waiting period for harvest	31	25.80
17	Cutting and burning of affected plants	110	92.00

(*Multi responses)

It could be observed from the table 2 that cent per cent of the brinjal growers had knowledge on selection of appropriate varieties for their area. More than 90.00 per cent of the brinjal growers had knowledge on summer ploughing, blanket recommendation of fertilizers, knowledge on recommended fungicide and cutting and burning of severely affected plants. However, it was observed that majority of the respondents have medium or low level of knowledge on pesticide compatibility, identification of pest and diseases, crop rotation, seed treatment, beneficial insects, chemicals and its dosage, safe handling of pesticides, safe waiting period for harvest and botanicals recommended and its dosages. Most of the farmers preferred more than prescribed pesticides, as brinjal growers believed that raising the dose could immediately destroy the insect. Many farmers imitate their fellow farmers when applying pesticides without using precautionary steps. Quite a few brinjal growers use face masks, helmets, gloves, hand wash, etc. The identification capacity of pest by the brinjal growers based on

education/experience will determine the adoption of plant protection practices.

Therefore, the knowledge on identification of major pests is studied and the details are presented in the table 3.

Table 3: Knowledge of brinjal growers on identification of pest and diseases (n=120)

S. No.	Category	*Number	Per cent
1	Shoot and fruit borer	94	78.33
2	Stem borer	53	44.16
3	Ash weevil	77	64.16
4	White fly	91	75.83
5	Hopper	78	65.00
6	Aphid	44	36.66
7	Cercospora leaf spot	49	40.83
8	Little leaf of brinjal	73	60.83
9	Damping off	85	70.83
10	Mosaic	45	37.50
11	Bacterial wilt	92	76.66
12	Alternaria leaf spot	38	31.66

(*Multi responses)

Majority of the brinjal growers (78.33 %) were able to identify shoot and fruit borer. Similarly, the diseases like damping off, bacterial wilt and little leaf of brinjal are easily identified by majority of the growers. The reason might be that the farmers are well aware of the pest that causes severe loss to the crop besides, those pests are frequently occurring pests.

Most of the brinjal growers had knowledge about using of traps, right time of application of pesticides, sowing time. The possible reason might be due to their experience in brinjal cultivation and the advisory they received from fellow farmers and extension personnel. More than half of the brinjal growers (56.60 %) had knowledge on the identification of pest and diseases, their symptoms and management practices and 51.00 per cent of the brinjal growers had knowledge on interval of spraying of pesticide on brinjal crop. More than one fourth of the brinjal growers had knowledge on seed treatment, mixing ratio of pesticide with water, crop rotation and knowledge about beneficial insects. Insects defined by the brinjal growers as beneficial natural insects as ants, lady bird beetles, spiders and bees. The findings are in accordance with the results of Yogendra (2015) [6].

Conclusion

The study has clearly found that the knowledge level on critical plant protection practices is low and medium among farmers. This may lead to indiscriminate use of plant protection chemicals, wastage of chemicals, labour, environmental degradation of land, pest resurgence, that may result in economic, environmental loss. The results of the study have warranted the need for strengthening of the extension strategies to create awareness and knowledge among farmers plant protection practices. Suitable training strategies need to be formulated to educate the farmers on handling of plant protection equipment and spraying methods, chemical control for weeds and soil solarization. Very few respondents had consulted agricultural officials for the plant protection recommendations and hence, public extension has to be strengthened to meet the farmers demand for solutions in plant protection.

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