Research Article

Journal of Extension Education & Applied Sciences
Year 2025, Volume-2, Issue-1 (January – March)

www.acspublisher.com

Assess the constraints faced by vegetable growers in implementing Integrated Pest Management (IPM) practices.

[1]Smita Singh, [2]R.K. Doharey, [3]N.R. Meena and [4]Yogesh Kumar

[1&4]Ph.D. Scholar, [2]Professor & Incharge Head, [3]Asstt. Professor, Department of Agricultural Extension Education, College of Agriculture, A.N.D.U.A.T. Kumarganj, Ayodhya, U.P.,

ARTICLE INFO

Received: 30 January 2025
Accepted: 02 February 2025

Keywords: Integrated Pest Management, vegetable cultivation, constraints, challenges etc.

doi:10.48165/iaef.2025.2.1.3

ABSTRACT

This study was conducted in Mau district, Uttar Pradesh, to assess the challenges faced by vegetable growers in implementing Integrated Pest Management (IPM) practices. The district, comprising 9 community blocks, was chosen purposively for its familiarity to the investigator and proximity to the researcher's home. Two blocks, Ratanpura and Kopaganj, were selected for their easy accessibility. A total of 12 villages were randomly selected from these blocks for the study. Perceived constraints related to vegetable cultivation were identified, and the severity of each constraint was measured on a five-point continuum. The responses of the sampled vegetable growers were collected using a structured interview schedule. Data analysis revealed that the most common problem, according to 69.86% of respondents, was "non-availability of labour at the time of harvesting." This was followed by "Lack of knowledge about using the recommended dose of fertilizer," ranked second by 65.80% of respondents. Other significant challenges included "Lack of knowledge about the mechanical, biological, and cultural methods of IPM" (63.24% at rank third), "Lack of timely availability of technical information" (60.76% at rank fourth), "Lack of training in IPM for vegetable crops" (59.34% at rank fifth), and several others. These findings underscore the diverse range of challenges faced by vegetable growers in Mau district. Addressing these issues will require a comprehensive approach, including improving labour availability during harvesting, enhancing knowledge dissemination on fertilizer usage and IPM methods, ensuring timely access to technical information, providing training in IPM, simplifying insect and pest control methods, reducing the cost of high-yield varieties and insecticides, and offering subsidies for IPM control measures. Implementing solutions to these challenges can significantly contribute to the sustainable development of vegetable cultivation in the region.

INTRODUCTION

Vegetable farming is particularly appealing to farmers due to its higher profitability compared to field crops. The adaptability of vegetables to various abiotic stresses like water, soil, and weather conditions makes them suitable for cultivation in stress-prone areas such as dry lands, deserts, high altitudes, areas with high rainfall, and saline wastelands. Vegetable crops contribute significantly to crop diversification, employment generation, and nutritional

Corresponding author: smitasingh006007@gmail.com

security, improving the economic conditions of farmers. They also play a vital role in maintaining human health, providing essential vitamins like A and C, proteins, and fibres. Vegetables are also rich in nutrients such as Calcium, Magnesium, Phosphorus, Sulphur, and Iron. In addition to nutritional benefits, vegetable production contributes to the economic development of a country and serves as a significant source of income and employment. Vegetables have accounted for the highest share (59 to 61%) in horticultural crop production over the past five years. The focus is shifting towards achieving not only high yields but also better-quality produce, as producers can command higher prices for quality produce. Factors such as variety, planting season, nutrition, and irrigation play a crucial role in achieving high yields and quality production.

Vegetables are grown in almost all states of India, in diverse agro-climatic and soil conditions, both in plains and hilly regions. Major vegetables grown in India include onions, potatoes, tomatoes, cabbage, radish, turnip, and cucumber. India is the world's largest producer of cauliflower, the second-largest producer of onions, and among the top 10 producers of cabbage, green peas, potatoes, and tomatoes. In recent years, India has also started producing gherkins, baby corns, asparagus, silver skin onions, and broccoli, catering to both domestic and export markets. India's diverse climate ensures the availability of a wide variety of vegetables. It ranks second in vegetable production in the world, after China. According to the National Horticulture Database published by the National Horticulture Board during 2020-2021, India produced 200.45 million metric tonnes of vegetables, cultivated in 10.86 million hectares (www.apeda.gov.in/vegetable).

During the fiscal year 2022, Uttar Pradesh had the largest share of vegetable production in India, accounting for 14.8 percent, followed by West Bengal at 14 percent (www.statista.com). Now-a-days in Uttar Pradesh vegetable growers are facing trouble. Mau district was a hotspot for vegetable cultivation; however, all but many of the growers there are closed the vegetable cultivation. According to growers, business is at an all-time low and the vegetables is selling at less than half of market rate. Vegetable farmers complained of huge losses due to absence of food storage and lack of procurement facilities by the government. The price variation of vegetables was low, but pricing system of vegetables was not yet developed. The poor processing facilities restricts the expansion of acreage of vegetables. The lack of infrastructure facilities discourages the resource-poor farmers from expansion of area under this crop (Das *et al.,* 2016). Even, inadequate transport facilities, non-availability of market in the locality, low marketable surplus, absence of market information, lack of organization among producers, problems of storage etc. are the major constraints in vegetables production (Sharma *et al.,* 2016). Vegetables cultivation is not delivering the desired output as it is still highly unorganized, inefficient, and unprofitable despite having various policies and schemes by various government agencies (Pathak *et al.,* 2015). Thus, vegetables cultivation is constrained by several factors. On this backdrop, present study was conducted in the state of Uttar Pradesh to unravel the constraints with vegetables cultivation and associated difficulties experienced by the grower with each constraint.

RESEARCH METHODOLOGY

The study was conducted during 2022-23 in Mau district, Uttar Pradesh, which is one of the seventy-five districts in the state. Mau district was specifically chosen for the study to gain insight into the ground reality of Integrated Pest Management (IPM) practices by vegetable growers, focusing on the issues faced in the village. Another reason for selecting this district was the investigator's familiarity with the area, its people, officials, non-officials, and local dialect, which facilitated more efficient work. Mau district comprises 9 community blocks, out of which 2 blocks, Ratanpura and Kopaganj, were purposively selected for the study due to their proximity to the researcher's home and ease of accessibility. Ratanpura and Kopaganj blocks have 178 and 146 villages, respectively. Six villages were randomly selected from each block for a total of 12 villages. Perceived constraints were defined as factors perceived by individuals to inhibit or prohibit their participation and enjoyment. Various constraints related to vegetable cultivation were identified. The severity of each constraint, based on the difficulties experienced by vegetable growers, was measured on a five-point continuum: 'very high' - 5, 'high' - 4, 'moderate' - 3, 'low' - 2, and 'very low' - 1. The responses of the sampled vegetable growers were collected using a structured interview schedule. Data were analyzed to present the mean perception score and standard deviation values for each constraint. The difficulty level of each constraint, as well as each category of constraints mentioned above, was derived using index values.

RESULTS AND DISCUSSION

The distribution of respondents is based on differential information possessed by them and I was calculated by working out Arithmetic Mean, Standard Deviation, Percentage.

1. Constraints in Integrated Pest Management practices in vegetable crop perceived by the respondents:

Table 1.1 Constraints in Integrated Pest Management practices in vegetable crop perceived by the respondents:

S. No.	Constraints	MPS	Rank
1.	Non-availability of labour at the time of harvesting.	69.86%	I
2.	High cost of high yield varieties of vegetable	52.22%	VII
3.	Lack of knowledge about using of recommended dose of fertilizer.	65.80%	II
4.	Lack of knowledge about the mechanical, biological, cultural method of IPM.	63.24%	III
5.	High cost of insecticides.	49.86%	IX
6.	Lack of timely availability of technical information.	60.76%	IV
7.	Lack of training of IPM in vegetable crops.	59.34%	V
8.	Complicated method of insect and pest control.	55.12%	VI
9.	Non- availability of plant protection equipment's locally.	51.08%	VIII
10.	Lack of subsidy from Government on IPM control measures.	45.26%	X

A perusal of the Table 1.1 indicate that the maximum number of the respondents 69.86% with adopt a rank of first were agreed with the statement that "Non-availability of labour at the time of harvesting." is the common problem, followed by "Lack of knowledge about using of recommended dose of fertilizer." 65.80% at ranks second, "Lack of knowledge about the mechanical, biological, cultural method of IPM." 63.24% at rank third, "Lack of timely availability of technical information." 60.76% at rank fourth, "Lack of training of IPM in vegetable crops." 59.34% at rank fifth, "Complicated method of insect and pest control." 55.12% at rank sixth, "High cost of high yield varieties of vegetable." 52.22% at rank seventh, "Non- availability of plant protection equipment's locally." 51.08% at rank eight, "High cost of insecticides." 49.86% at rank ninth, "Lack of subsidy from Government on IPM control measures." 45.26% at rank tenth, respectively.

CONCLUSION

Based on the findings of the study in Mau district, Uttar Pradesh, it is evident that several challenges are faced by vegetable growers in implementing Integrated Pest Management (IPM) practices. Most respondents, accounting for 69.86%, ranked "non-availability of labour at the time of harvesting" as the most common problem. This was followed by "Lack of knowledge about using the recommended dose of fertilizer," which was ranked second by 65.80% of respondents. The third most prevalent issue, according to 63.24% of respondents, was "Lack of knowledge about the mechanical, biological, and cultural methods of IPM." Other significant challenges identified include "Lack of timely availability of technical information" (60.76% at rank fourth), "Lack of training in IPM for vegetable crops" (59.34% at rank fifth), "Complicated methods of insect and pest control" (55.12% at rank sixth), "High cost of high-yield varieties of vegetables" (52.22% at rank seventh), "Non-availability of plant protection equipment locally" (51.08% at rank eighth), "High cost of insecticides" (49.86% at rank ninth), and "Lack of subsidy from the government on IPM control measures" (45.26% at rank tenth).

These findings highlight the multifaceted nature of challenges faced by vegetable growers in Mau district. Addressing these issues will require a comprehensive approach that includes improving labour availability during harvesting, enhancing knowledge dissemination on fertilizer usage and IPM methods, ensuring timely access to technical information, providing training in IPM, simplifying insect and pest control methods, reducing the cost of high-yield varieties and insecticides, and offering subsidies for IPM control measures. Implementing solutions to these challenges can significantly contribute to the sustainable development of vegetable cultivation in the region.

References:

Bhardwaj T. and Sharma, J.P. 2014. Integrated pest management: present status and constraints in implementation: a case study in villages of northern India. *Biopesticides International,* 10 (1):107- 111.

Das, L., Nain, M. S., Singh, R., & Burman, R. R. (2014). Constraints in marketing of fruits as perceived by the fruit growers and NERAMAC in Assam. *Journal of Community Mobilization and Sustainable Development,* 9(2), 114-117.

Jallow, M.F.A., Awadh, D.G., Albaho, M.S., Devi, V.Y., Thomas, B.M. (2017). Pesticides risk behaviors and factors influencing pesticides use among farmers in Kuwait. *Science of the Total Environment,* 574, 490-498.

Nidhi & Kalsariya, B. N. 2017. Constraints Faced by the Farmers in Adoption of IPM in Cauliflower Cultivation. *International*

Journal of Botany and Research, (IJBR), ISSN (P): 2277-4815; ISSN (E): 2319-4456.

Pathak, V. K., Chakraborty, H., & Pandey, K. M. (2015). A study on feasibility of cold storage and food processing units for pineapple in Assam. *Journal of Basic and Applied Engineering Research, 2*(17), 1549-1554.

Patel, M.P., Sharma, T.D., Patel, A. C, (2011). Constraint and suitable extension strategies for effective adoption of IPM technology in Cotton. *Agricultural science Digest.* 31 (3):183-187.

Sharma, A., Kichu, Y., & Chaturvedi, B. K. (2016). Economics and constraints of pineapple cultivation in Dimapur district of Nagaland. *The Journal of Rural and Agricultural Research*, *16*(1), 70-75.

Tulsi Bharwaj and Sharma, J. P. (2014) Validation of IPM technologies: problems and practices. *Annuals of Plant Protection Sciences*, 22 (2): 342-344.