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ADOPTION LEVEL OF IMPROVED PRODUCTION MANAGEMENT PRACTICES BY FARMERS OF MAROI NAKUPI (GARLIC CHIVES) CULTIVATION

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ABSTRACT

The study was conducted in Imphal East District of Manipur during the 2023-24 period. A total of 120 respondents were selected randomly from Moirang Kampu village of Heingang Community Development Block based on the high number of farmers engaged in "Maroi Nakupi" (garlic chives) cultivation. The study reveals that 48.33% respondents belong to the middle age group, majority 55.83% respondents were from OBC caste, maximum 32.5% respondents were educated up to high school, majority 54.16% respondents were engaged in farming showing a strong dependence on agriculture for livelihood, 48.33% of respondents have medium income level suggesting moderate earning levels, majority 56.66% respondents had joint family, majority 75.83% respondents were having hut/mud housing type, 62.51% respondents had marginal land holdings, maximum 46.67% respondents were having below 10 years of farming experience and 45.83% respondents had medium level of mass media exposure. Additionally, the study found that 50.00% of the respondents exhibited a medium level of adoption reflecting a generally positive trend in adoption of improved production practices with scope for further extension efforts to enhance uptake among lower adopting group. And it was revealed that independent variables i.e. age, caste, education, annual income, land holding, occupation, family type mass media exposure and farming experience exhibited a positive and significantly correlated with adoption of improved production management practices in Maroi Nakupi (garlic chives) cultivation while housing type availed negatively significant correlation. Overall, these findings highlight the socio-economic characteristics of the respondents and their correlation with adoption level.

Keywords*: - adoption, improved production, Maroi Nakupi (Garlic chives)*

INTRODUCTION

Garlic chives other common names include Chinese chives and Chinese leek, locally known as "Maroi Nakupi" in Manipur, is a perennial herb grown in practically all home gardens in the Manipur valley (Premila and Chetry 2013). The ethnic communities inhabiting the Manipur State use about 400 species of wide varieties of wild plants, ranging from algae to angiosperms as food (Anonymous 1994). Its scientific name is *Allium tuberosum* and they are a member of the Liliaceae family. Most homes in Manipur use the young leaves and inflorescences which have a similar flavor to garlic on a daily basis to season food (Rao *et al.,* 2013). In areas like Moirang Kampu village of Imphal East District, Manipur where Maroi Nakupi (Garlic chives) cultivation has been one of the most prominent perennial herbs (crop) practices this study examines the degree to which farmers have adopted improved production management practices. To date, no systematic studies have been conducted in the past few years to assess the level of adoption of improved production management practices among farmers cultivating Maroi Nakupi (Garlic chives) crop. The present study is to evaluate the extent of modern agricultural techniques acceptance and pinpoint the variables affecting local farmers adoption of these practices, what challenges they face, and what support systems they require to improve productivity and sustainability. It will also help to provide scientific information about the crop. Also, it is assumed that the main objective of the farmers is to maximize profits through their production.

Hence, it was felt that the improved production management practices of Maroi Nakupi growers need to be studied. The study will also bring out a clear picture of the existing situation with respective to adoption orientation and production management practices of "Maroi Nakupi" (Garlic chives) cultivation. Therefore, the results of the study will be the utmost importance to planners, policy makers and extension workers to take stock of the situation and to design and popularize such a balanced policy that was to be

in line with the existing needs of the "Maroi Nakupi" (Garlic chives) cultivation.

OBJECTIVE

(1) To assess the socio-economic profile of the respondents

(2) To ascertain the adoption level of improved production management practices by the respondents in maroi nakupi (garlic chives) cultivation

(3) To find out the association between selected independent variables with adoption

METHODOLOGY

The study employed descriptive research design, which aimed to provide a comprehensive description of the phenomena under investigation. Multi stages sampling technique was used for the study. First selection of district, second selection of block, third selection of area or village and fourth selection of respondents was followed. The study was carried out in Imphal East district of Heingang Community Development block in Moirang Kampu village of Manipur based on its high number of farmers engaged in "Maroi Nakupi" (garlic chives) cultivation. A total of 120 respondents were selected randomly. Survey was conducted with the help of pre structured interview schedule of structured questionnaire was used for the collection of data. The collected data were classified, tabulated and analysed in the light of the objectives. Appropriate statistical tools such as frequency, percentage and correlation were used to determine the inferences with the help of Microsoft Excel.

RESULTS AND DISCUSSION

Table 1 : Socio-economic profile of the respondents (n=120)

Sr. No.	Independent Variable	Category	Frequency	Percentage
1	**Age**	Old (>55 years)	46	38.33
		Middle (36-55 years)	58	48.33
		Young (>35 years)	16	13.34
2	**Caste**	General	51	42.51
		OBC	67	55.83
		SC/ST	02	01.66
4	**Occupation**	Farming + Job	10	08.33
		Farming + Business	18	15.00
		Farming + Labour	27	22.51
		Farming	65	54.16
5	**Annual Income**	High (Above ₹ 3 lakh)	45	37.51
		Medium (₹ 2 to 3 lakh)	58	48.33
		Low (₹ 1 to 2 lakh)	17	14.16
6	**Family type**	Nuclear	52	43.34
		Joint	68	56.66
7	**Housing type**	Hut/Mud	91	75.83
		Semi - Cemented	21	17.51
		Cemented	08	06.66
8	**Land holding**	Above 1 acre	05	04.17
		0.6 to 1 acre	45	37.50
		Up to 0.5 acre	70	58.33
9	**Farming experience**	Above 20 years	15	12.50
		11-20 years	49	40.83
		Below 10 years	56	46.67
10	**Mass media exposure**	High	49	40.83
		Medium	55	45.83
		Low	16	13.34

Table 1 shows that majority 48.33 per cent of the respondents belong to middle age group. It was observed that (55.83%) of the respondents were OBC category. It can be observed that 32.50 per cent of the respondents were educated up to high school. Furthermore 54.16% of the respondents are solely engaged in farming as their main occupation. It was observed that 48.33 per cent of the respondents belong to medium level of annual income also it was observed that

56.66% of the respondents were joint family. It was found that 75.83% of the respondents reside in hut/mud housing type. Additionally, 58.33% of the respondents have marginal land holdings of up to 0.5 acre. It was observed that majority 46.67 per cent of the respondents have below 10 years farming experience. It was found that 45.83 per cent of the respondents fall within the medium level of mass media exposure category. Similar findings were also reported by Dhayal, B.L. and Mehta, B. M. (2022).

Table 2 : Adoption of improved production management practices by the respondents in Maroi Nakupi (Garlic chives) cultivation (n=120)

Sr. No	Statement	Fully Adopted F (%)	Partially Adopted F (%)	Not Adopted F (%)
1	Recommended field preparation method or technique.	100 (83.33)	17 (14.17)	03 (2.50)
2	Recommended ploughing for Maroi Nakupi (Garlic chives) cultivation.	99 (82.50)	19 (15.83)	02 (1.67)
3	Dose of FYM or manure as per recommendation.	90 (75.00)	25 (20.83)	05 (4.17)
4	Recommended dose of urea.	97 (80.83)	15 (12.50)	08 (6.67)
5	Recommended amount of seed rate of Maroi Nakupi (Garlic chives).	72 (60.00)	45 (37.50)	03 (2.50)
6	Adopted sowing method or technique.	93 (77.50)	24 (20.00)	03 (2.50)
7	Sowing time/period as per the recommendation.	91 (75.83)	14 (11.67)	15 (12.50)
8	Proper plant spacing as recommended.	99 (82.50)	15 (12.50)	06 (5.00)
9	Irrigation as per the recommendation of scientists or experts.	88 (73.33)	29 (24.17)	03 (2.50)
10	Improved irrigation system in the farm.	15 (12.5)	18 (15.00)	87 (72.50)
11	Weed management practices of Maroi Nakupi (Garlic chives) cultivation. a. Hand weeding/Hand hoeing b. Mulching c. Inter cropping	99 (82.50)	17 (14.16)	04 (3.34)
12	Weedicides for weed control in your farm.	65 (52.50)	52 (43.33)	05 (4.17)
13	Recommended plant protection measures.	33 (27.50)	45 (37.50)	42 (35.00)
14	Used pesticides or insecticides in the farm.	59 (49.17)	27 (22.50)	34 (28.33)
15	Proper irrigation for high yield.	94 (78.83)	23 (19.17)	03 (2.50)
16	Proper treatment of plants for high yield.	18 (15.00)	21 (17.50)	81 (67.50)
17	Harvesting of crops at the appropriate maturity stage.	107 (89.17)	10 (8.33)	03 (2.50)
18	Harvesting with: a. Sickle b. Machine c. Any other tools	104 (86.67)	16 (13.33)	0 (0)

Table 2 : Overall distribution of respondents based on the adoption level (n=120)

Sr. No.	Adoption	Frequency	Percentage
1	**Low** (29-35)	26	21.67
2	**Medium** (36-42)	60	50.00
3	**High** (43-49)	34	28.33

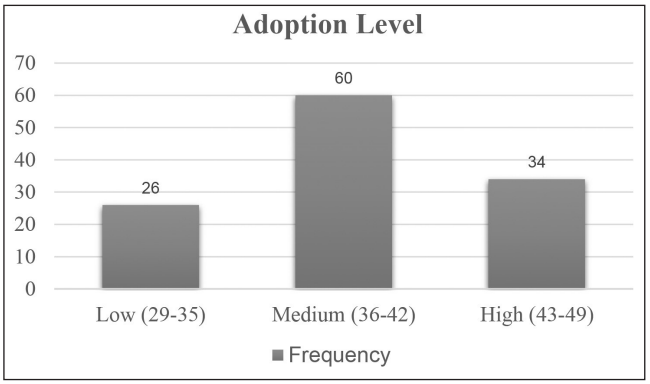

Fig. 1 : Overall distribution of respondents based on the adoption level

According to table 2 the findings presented is evident that 50.00% of the respondents have medium level of adoption regarding improved production management practices in Maroi Nakupi (garlic chives) cultivation, with a significant proportion of 28.33% respondents have high level of adoption followed by 21.67% of respondents having low level of adoption. Similar findings were also reported by Sangam *et al.,* (2018), S. Abhishek *et al.,* (2023), Jalu *et al.,* (2023) and Desai *et al.,* (2023), Meena et al. (2024); Meena et al. (2024); Pokar et al. (2023); Jangir et al. (2023).

Table 3 : Association between selected independent variables with adoption (n=120)

Sr. No.	Variables	Correlation Coefficient ('r' Value)
X_1	**Age**	0.5460**
X_2	**Caste**	0.5038**
X_3	**Education**	0.6482**
X_4	**Occupation**	0.3738*
X_5	**Annual Income**	0.5745**
X_6	**Family Type**	0.5000*
X_7	**Housing Type**	-0.5683**
X_8	**Land Holding**	0.3517**
X_9	**Mass Media Exposure**	0.5304*
X_{10}	**Farming Experience**	0.5566*
* = Significant at 0.05 level of probability		
** = Significant at 0.01 level of probability		
NS = Non Significant		

Based on the analysis presented in Table 3, it was observed that independent variables i.e. age, caste, education, annual income and land holding exhibited a positive and significant correlation with adoption of improved production management practices in Maroi Nakupi (garlic chives) cultivation at a probability level of 0.01%. Additionally, the independent variables occupation, family type, mass media exposure and farming experience were also positively and significantly correlated with adoption of improved production management practices in Maroi Nakupi (garlic chives) cultivation but at a slightly lower probability level of 0.05%. And the independent variable housing type of the respondents was availed negatively significantly correlated with adoption of improved production management practices in Maroi Nakupi (garlic chives) cultivation.

CONCLUSION

The study clearly revealed that majority of the respondents belong to the middle age group, majority of the respondents were from OBC caste, maximum numbers of respondents were educated up to high school, majority of respondents were engaged in farming, maximum numbers of respondents have medium income level, majority of the respondents had joint family, maximum numbers of respondents were having hut/mud housing type, majority of the respondents had marginal land holdings, maximum of the respondents were having below 10 years of farming experience and majority of the respondents had medium level of mass media exposure. And the study also found that majority of the respondents exhibited a medium level of adoption followed by high level and low level. The independent variables age, caste, education, occupation, annual income, family type, land holding, mass media exposure and farming experience was found to have a positive and significant association whereas the independent variable housing type of the respondents was negatively and significantly correlated with adoption of improved production management practices in Maroi Nakupi (garlic chives) cultivation. Overall, these findings provide valuable insights for further research and the development of targeted interventions to improve production management practices in Maroi Nakupi (garlic chives) cultivation in the area.

RECOMMENDATION

The finding of the study indicated that the results related with the adoption level shows that farmers had medium level extent of adoption. The adoption rate has a lot of room to grow. Government and concerned departments should take initiatives to aware the farmers about the significance and opportunities of improved production management practices. Trainings & demonstrations should be conducted regarding technology & techniques to enhance the productivity and better livelihoods. The adoption process can be accelerated by peer influence, which can be achieved by grouping farmers. Research and development wing should concentrate to develop technologies that can be most appropriate for the socio-economic features of the farmers.

CONFLICT OF INTEREST

All authors declare that there is no conflict of interest among the researchers.

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