



Analysis on Extent of Adoption of Recommended *rabi* Vegetable Cultivation Practices

KEYWORDS

Adoption behavior; Extent ; Vegetable growers

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ABSTRACT A study was conducted on 150 vegetable growers in 5 villages namely pukhao, Waiton, Dolaithabi, Lamboikhull, Tangkham, under Sawombung block of Imphal East district of Manipur randomly selected to identify the extent of adoption of *rabi* vegetable cultivation practices. Structured scheduled consisting 14 items from different aspects of cultivation practices of cabbage and cauliflower were presented to the respondent. The study reveals that majority (46.7%) of the respondents had medium extent of adoption followed by high level of adoption (33.3%) and low (20%) level of extension.

1. INTRODUCTION

Vegetables comprises of a large number of plants, mostly, annual of which different part like leaf, stem, flowers bud, flower, fruits, root, etc. are eaten. They are one of the cheapest sources of natural nutritive foods. Their consumption in sufficient quality provides taste, palatability and increase appetite for maintenance of good health and is beneficial in protecting against some degenerative diseases. They also play key role in neutralizing the acids produced during digestion of proteinous and fatty foods. It has been estimated that 100g of tropical leafy vegetables can provide 60-140mg of ascorbic-acid (vitamin-C), 100µg of folic acid, 4-7mg iron and 200-400 mg of calcium.

In Manipur, the total area under vegetable production is 7254 ha with a production of 55936 metric-tonnes. Though, few farmers grow *rabi* vegetable in some part of state, the production doesn't meet the requirement. The production of *rabi* crops in Manipur is insufficient mainly due to lack of giving suitable irrigation methods /practices of crops and vegetables are imported from other states. The present study was conducted with the following objectives :To study the adoption behavior and extent of adoption of *rabi* vegetable crops by the farmers of Imphal East district, Manipur".

2. Materials and Method

The present study was conducted in Sawombung block of Imphal-East District of Manipur. There are three blocks in Imphal-east district namely Sawombung, Keirao-bitra and Jiribam. For the study, Sawombung block was selected purposively as majority of the population were cultivating vegetables and depends on agriculture for their livelihood. A sample size of 150 respondents were selected separately from five villages namely; Pukhao(36); Waiton(30); Dolaithabi(38); Lamboikhul(20); Tangkham(26); based on proportional random sampling method. The data were collected with the help of well-structured and pre-tested interview schedule. The extent of adoption of important cultivation practices i.e. used of HYV seeds, seed treatment, seed rate, time of nursery raising, fertilizer used in nursery, age of seedling at transplanting, transplanting space and time, used of N,P,K, weeding, plant protection, irrigation were considered for the study.

3. RESULTS AND DISCUSSION

3.1. Adoption behavior of *rabi* vegetable cultivation practices:

The adoption behavior was measured with the help of structured schedule which was developed in consultation with experts. The schedule consisted 14 items from different aspects of cultivation practices of cabbage and cauliflower presented in Table -1. To compute the adoption score of each practice and in case the adoption score of any practice exceed the corresponding weight, the weighted score of that practice was considered as maximum adoption score. The adoption behavior was calculated by using the following formula developed by Chattopadhyay (1963)

$$\text{Adoption index} = \frac{\text{obtained adoption Score}}{\text{Highest obtainable score}} \times 100$$

The data presented in Table-2 reveals that majority (46.7%) of the respondents had medium extent of adoption followed by high level of adoption (33.3%) and low (20%) level of extension. The medium level of adoption may be due to lack of complete knowledge and information about the recommended package of practices. The results is in agreement with the findings of Singh et. al (2006)

3.2. Extent of adoption of vegetable cultivation Practices-

The data was with regards to the adoption of 14 packages of practices by cabbage and cauliflower growers. Some of the individual were adopting package of practices in full, or not adopted at all while among some practices, partial adoption was also recorded. The results are presented in Table-3

3.2.1. Used of HYV seeds :Cent per cent of the respondents showed full adoption of high yielding varieties seed. The reason for this is the easy availability of HYV seeds in the market and high yield of crops.

3.2.2. Seed treatment: Cent per cent of the farmers used treated seeds as they have knowledge about their benefits

3.2.3. Seed rate :Majority of the respondents used recommended (80%) seed rate followed by partial adoption (20%). The possible reason might be they have proper knowledge about the advantage of sowing seed at the

proper rate and sowing too close may cause the seedlings to lanky.

3.2.4. Time of nursery raising: Majority of the farmers (73.3%) adopted recommended time of nursery raising fully followed by partial adoption (26.66%).The possible reason might be that they understood that timely raised crops would produce higher yields and be less susceptible to insect pests and diseases.

3.2.5. Fertilizer used in nursery: Majority of the farmers (60%) adopted the recommended dose of fertilizers partially in the nursery raising followed by (40%) of nil adoption. The possible reason might be non-availability of FYM and fertilizer, lack of adequate knowledge about the advantage of fertilizer and unable to effort buying of manure and fertilizer.

3.2.6. Age of seedling at transplanting: Majority of the farmers (66.6%) had adopted the recommended age of seedlings for transplanting followed by 33.3% of partial adoption as they understood timely transplanting of seedling would produce higher yield and improve the head formation and more marketable value.

3.2.7. Transplanting spacing: Majority of the respondents (53.33%) showed partial adoption followed by 33.3% of nil adoption and partial adoption (20%) of the respondents.

3.2.8. Transplanting time: Majority of the respondents (53.33%) showed full adoption of recommended transplanting time, followed by (46.66%) of partial adoption.0% of the respondents are in the nil adoption group.

3.2.9. N-used: Majority of the farmers (60%) showed partial adoption of recommended N- fertilizer used followed by (40%) full adoption.0% of the farmers are in nil adoption group. It may be concluded that the majority of the farmers had used nitrogenous fertilizer on their crops fully or partially. This might be due to the fact that they could visualize the pronounced effect of fertilizer.

3.2.10. P-used:Majority of the farmers (53.33%) are in nil adoption group followed by full adoption (26.66%) and partial adoption (20%) of recommended dose of fertilizer. This might be due to fact that they were not aware about the roles and importance of these recommended practices. Another reason might be its high cost and invisible direct effects.

3.2.11. K-used:Majority of the respondents (53.33%) are in nil adoption categories. The possible reason might be lack of knowledge about practices.

3.2.12. Weeding:Majority of the farmer's (66.6%) adopted the recommended weeding practices partially. This is because most of them understood the injurious effect of weeds on crops.

3.2.13. Plant protection:Regarding plant protection majority of the farmers (53.33%) do not adopt the recommended protection measures due to insufficient knowledge to identify the disease.

3.2.14. Irrigation:Majority of the farmers (53.33%) do not adopt the recommended package of practices as they depends mainly on rainfall for their agricultural practices and they don't have any proper facilities for irrigation.

4) CONCLUSION

The study reveals that the majority of the respondents belonged to medium level of adoption of vegetable cultivation technologies followed by high and only 20 percent is low. Majority of the farmers adopted the recommended package of practices fully and partial except in some practices like use of phosphorus and potassium fertilizer, plant protection measures due to high cost and invisible direct effects and also were not aware about the roles and importance of the recommended practices. It is suggested that the various Government organization and institution should come forward with awareness programme exclusively for vegetable growers. And efforts should be made to diffused information on prospects of adoption behavior among vegetable growers as revealed by the findings.

Table-1. Adoption score of the cultivation practices

Sl.No.	Practice	Weights	Adoption score
1	Use of improved HYV of vegetables	5	HYV- 5; Local- 4
2	Seed treatment	2	Treated- 2; Untreated- 1
3	Seed rate (Kg/ha)	4	Recommended- 4; Non-recommended- 2
4	Time of nursery raising	4	Timely raised- 4; Late- 2
5	Fertilizer used in nursery	3	Recommended- 3; Non-recommended- 2
6	Age of seedling	4	Recommended- 4; Non-recommended- 2
7	Transplanting spacing	4	Recommended- 4; Non-recommended- 2
8	Transplanting time	4	Early or right- 4; Late- 3
9	N-used	4	Recommended - 4; Non-recommended- 2
10	P-used	4	Recommended-4; Non-recommended-2
11	K-used	4	Recommended-4; Non-recommended-2
12	Weeding	4	3-times- 4; 2-times- 3; Once-2; Not done- 0
13	Plant protection	4	Twice-4; Once-2; Not done-0
14	Irrigation	4	Recommended- 4 ; More or less- 2

Table-2: Respondents based on their overall adoption score

Sl no	Category	Respondents	
		Frequency	Percentage
1	Low (less than mean-S.D)	30	20.0
2	Medium (in between mean±S.D.)	70	46.7
3	High (above mean +S.D)	50	33.3
	Total	150	100

$X^- = 44$

S.D.=9

Table-3.Item analysis of extent of adoption of cabbage and cauliflower cultivation practices

Sl.no	Packages/practices	Extent of adoption					
		Full adoption		Partial adoption		No adoption	
		F	%	F	%	F	%
1	Used of HYV-seeds	150	100	0	0	0	0
2	Seed treatment	150	100	0	0	0	0
3	Seed rate	120	80	30	20	0	0
4	Time of nursery raising	110	73.3	40	26.7	0	0
5	Fertilizer used in nursery	60	40	90	60	0	0
6	Age of seedling at transplanting	100	66.7	50	33.3	0	0
7	Transplanting spacing	70	46.7	80	53.3	0	0
8	Transplanting time	80	53.3	70	46.7	0	0
9	N-used	60	40	90	60	0	0
10	P-used	40	26.7	30	20	80	53.3
11	K-used	40	26.7	30	20	80	53.3
12	Weeding	50	33.3	100	66.7	50	20
13	Plant protection	45	30	25	16.7	80	53.3
14	Irrigation	60	40	90	60	0	0

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