

TITLE: Knowledge level of farmers on recommended cultivation practices of Off-season vegetable crops under low cost polyhouse technology in Assam

Musliha Nasrin¹, S.Borua², R. Borua³ and B.Deka⁴

¹M.sc(Agri) Scholar, ²Assistant Professor(SG),EEI(NER) region, ³Assistant Professor,

⁴Professor, Assam Agricultural University, Jorhat

Corresponding author email id: *muslihanasrin@gmail.com*

ABSTRACT

Low cost polyhouse technology enables farmers to cultivate vegetables during Off-season and fetch higher price to the farmers. Off-season cultivation of vegetable refers to the production of the vegetable before or after their normal cultivation seasons of production. As the Off-season vegetable cultivation under polyhouse technology needs skilled knowledge than the normal seasons production. Therefore, this study is conducted to find the knowledge level of the farmers on the recommended cultivation practices of selected Off-season vegetable crops under low cost polyhouse technology in Assam. The study was carried out in 4 districts of Assam which was selected purposively where maximum beneficiaries of RKVY (Rashtriya Krishi Vikas Yojana) existed. A total 80 respondents consisted the samples of the study. Statistical tools employed to analyze the data included frequency distribution, percentage, mean, standard deviation and knowledge test. The findings of the study revealed that majority (62.50%) had medium level of knowledge level which was measured by utilizing a Knowledge test prepared for the study. Implications of the study include exposing farmers to new developments in agricultural technologies, and motivate them to adopt the new technologies by organizing group discussions, meetings, study tours and field visits etc.

Key words: *Knowledge, farmers, polyhouse, Assam*

1. Introduction

Protected cultivation is a promising technology and hence becoming popular all over the world. There are 115 countries in the world which have undertaken greenhouse vegetable production commercially (Sabir and Singh, 2013). China increased its area under protected cultivation to 2.5 m ha under plastic covered greenhouses, 9.6 million hectare under plastic mulch, and 0.9 million hectare under low tunnels and floating covers (Anonymous, 2005)

India is the second largest producer of vegetables in the world next to China. The total vegetable production of India is 169.064 million tonnes from a total area of 10.106 million ha (NHB database, 2015-16). Presently, area under protected cultivation of horticultural crops is only around 40,000ha and out of which large portion mostly in northern parts of India is not successfully being utilized for protected cultivation. However, promotion of protected cultivation will certainly help in creation of huge self-employments for unemployed educated youths and will also raise the national economy by sale of high quality produce in domestic and international markets.

Off-season cultivation of vegetable refers to the production of the vegetable before or after their normal cultivation seasons of production. This can be accomplished by using low cost polyhouse technology which can be constructed with least cost and with easily available resources.

Off-season vegetable offers the higher prices to the farmers, consumers may have the fresh vegetable even in the Off-season, farmers can get the employment round the year, it has also lot of prospects for the exports in the foreign country so that there is ample scope of hard earned currencies, etc. Therefore, there is need for farmers to increase their knowledge level on recommended practices so that they can adopt the vegetable cultivation in the commercial scale.

In 1981, the Govt. of India established a National Committee to promote the application of plastics in agriculture. This committee NCPAH (National Committee in Plasticulture Application in Horticulture has established 22 Precision Farming Development Centers throughout the country. Out of which two centers have been established in the North Eastern Region including one at Guwahati and another at Imphal. (Anonymous, 2016)

Government provides subsidy to farmers to grow crops under cover. Recently central government initiated National Vegetable Initiative for Urban Clusters in 2011-12, the scheme which help farmers to get year round production of vegetables in greenhouse.

As the Off-season vegetable cultivation under polyhouse technology needs skilled knowledge than the normal season production. So, the present study was conducted to know the knowledge level of the farmers on recommended cultivation practices of selected Off-season vegetable crops under low cost polyhouse technology in Assam.

2. Literary review:

Off season cultivation of vegetable is more remunerative which enforce farmers to go for commercial cultivation. Srivastava (2000) reported that in different European countries, the yield of the greenhouse tomatoes was obtained in the range between 63 to 145t/ha. He also reported that at IARI, New Delhi, an average of 100t/ha yield had been obtained and in high rainfall areas of Jorhat tomato yields were 60-70 per cent high under poly rainshelter than under open field condition. Also an experiment conducted in Assam Agricultural University, Jorhat reported that Off-season tomato cultivation could be profitably done in Jorhat, Assam condition during rainy summer under plastic cover (Shadeque and Saikia ,1992). Chandra (1985) in his study reported that plastic rain shelter cum greenhouse is very common in every western countries to achieve maximum net return for commercial vegetable production. Giesenburg and Stewart (1986) reported that the UV stabilized polyethylene film and PVC protect the crop from adverse environmental condition. Besides promotion of earliness, the use of plastic covers raises soil and air temperature and also protects crops from rain, snow and wind. In addition to these, they have other advantages like improved seed bed condition, better seed germination, higher yield and quality. Antil (1988). Liao (1989) reported that vegetables planted under plastic houses were of better appearance due to less damage by wind and rain. The use of plastic film for covering the greenhouse structure has opened up new avenues for research. Bualek *et al.* (1990) reported that plastic greenhouse could be successfully used to create a desirable microclimate for early and off-season production of vegetables. Takakura (1990) described the usefulness of plastic greenhouse for providing vegetables like green pepper, tomato, cucumber etc, by providing control environmental condition and protection from diseases, insects and rains.

Knowledge is the information about an idea or fact posses or known by an individual. However, various authors and scholars conceptualize it in various ways as stated below:

Bloom *et al.* (1956) stated that those behavior and test situation which emphasize reminding either by recognition either by recognition or by recall of ideas, materials or phenomenon. Reddy and Reddy (1982) while studying the impact of national demonstration project in Rongaredi district of Andhra Pradesh measured the level of knowledge of practicipant farmers by comparing with that of the non participant farmers who were not exposed to National Demonstration project.

3. Methodology:

The study was carried out in the state of Assam. A purposive cum random sampling design was followed for selection of the districts and respondents. 4 districts of Assam were selected purposively where maximum beneficiaries of RKVY (Rashtriya Krishi Vikas Yojana) existed. The districts were Jorhat, Dibrugarh, Sonitpur and Kamrup. 20 respondents were purposively selected from each of the four (4) districts. Thus, the total sample size constituted 80 respondents. Statistical tools employed to analyze the data included frequency distribution, percentage, mean, standard deviation and knowledge test.

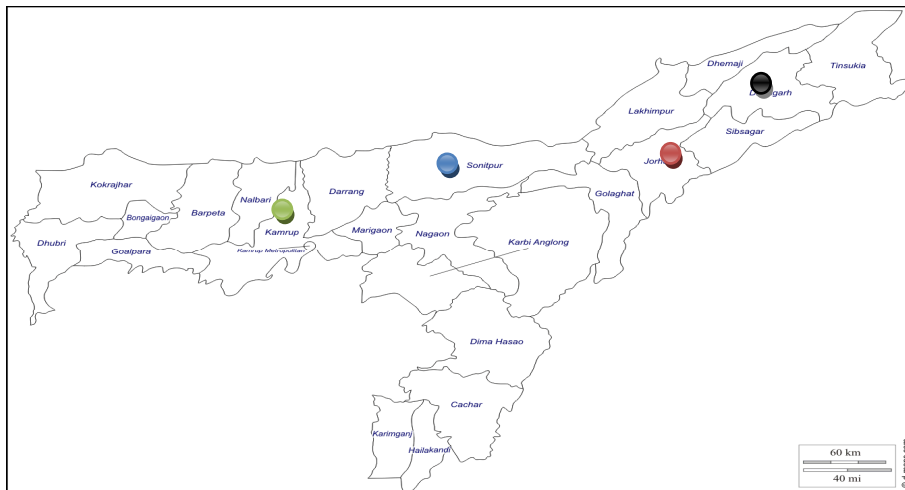


Fig. A map showing the research areas

The criteria was to select farmers who received low cost polyhouses under RKVY (Rashtriya Krishi Vikas Yojana) scheme by using purposive cum random sampling procedure as well as the training on improved cultivation practices to be followed in protected cultivation of Off-season vegetable crops. Deka (2014) revealed that 60,000 and 53,000sq.m area under polyhouse and plastic net house, respectively, for off season production was covered under the RKVY scheme in Assam.

Concept of knowledge

It refers to as a quantum of scientific information known to the respondent about the low cost polyhouse and recommended package and practices of selected off season vegetables.

Bloom *et al.* (1956) defines knowledge as “those behavior and test situation which emphasize and remembering either by recognition or recall of idea, materials or phenomenon”. In the present study, knowledge was conceptualized as remembering, materials, phenomena, methods or procedure as a result of exposure.

Construction of knowledge test:-

Knowledge level of the respondent in the present study was measured with the help of knowledge test constructed and standardized by Barman (1998) for the purpose. While administrating the final knowledge test, respondent score “1” was assigned for a correct answer and score “0” was assigned for an incorrect answer. Thus, the total score on the test had a theoretical range of 0 to 27. On the basis of the score obtained by the respondents they were categorized into 3 following categories:

Category	Range
Low	Below($\bar{X} - S.D.$)
Medium	Between ($\bar{X} - S.D.$) and ($\bar{X} + S.D.$)
High	Above ($\bar{X} + S.D.$)

4. Results and discussion

It is observed from the Table 1, that majority of the respondents 62.50 per cent possess medium level of knowledge, followed by 21.25 per cent respondents having high level and 16.25 per cent having low level of knowledge. Similar findings were reported by Surender, 1980.

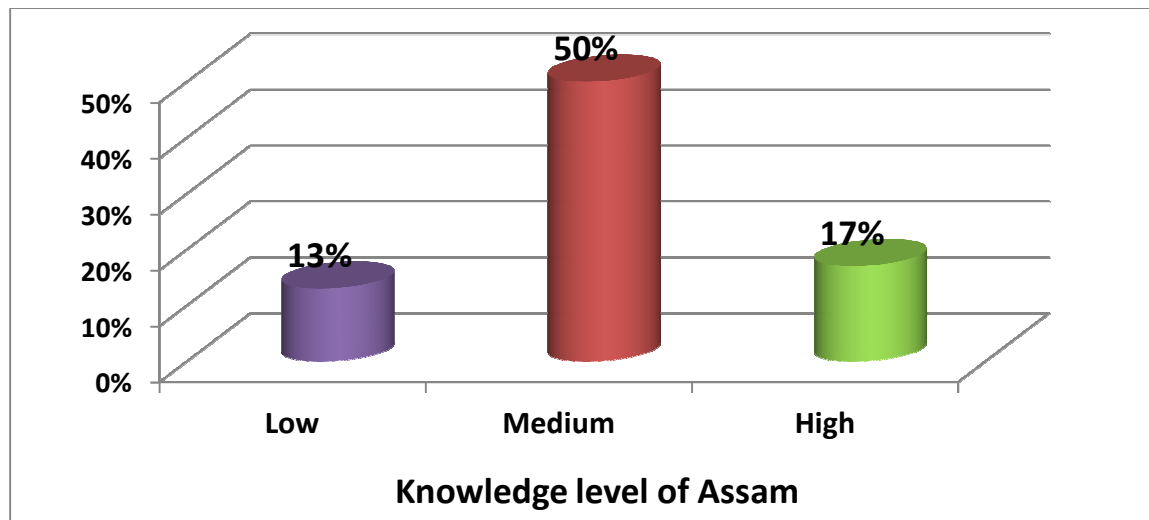
Considering the knowledge level of respondents covered under the four districts of Assam, the knowledge level that was measured is found to be relatively at a satisfactory level in order to apply in their own farms for Off-season cultivation of vegetables under low cost polyhouse technology.

The reason for such a finding could be because of the fact that the entire package of practices as well as the construction of the low cost polyhouse is not a very complicated technology for farmers to understand and apply in their own field condition to gain higher profits

in a unit area of land. However, scope of higher efforts on extension support and training remains to enhance and upscale their level of knowledge so that more farmers will also imitate and replicate the technology and greater number of farmers shall adopt the technology. Similar findings found by Bramachari (2003), Reddy and Reddy (1982), Meena *et al.* (2009)

Table 1. Frequency and Percentage distribution of all the respondents according to the knowledge level in Assam

N=80					
Category	Score range	Frequency	Percentage	Mean	S.D
Low	Below 6.7	13	16.25%	11.63	4.93
Medium	6.7-16.57	50	62.5%		
High	Above 16.57	17	21.25%		
Total		80	100		



5. Conclusion

The study revealed that knowledge level of all the respondents that majority (62.50%) possess medium level of knowledge, followed by (21.25%) having high level and (16.25%) having low level of knowledge.

As farmers had medium level of knowledge, still there is a need to expose the farmers to new developments in agricultural technologies, and motivate them to adopt the new technologies

by organizing group discussions, meetings, study tours and field visits so that they increase their knowledge and adopt the vegetable cultivation in the commercial scale for profit maximization.

Government and non-government agencies may also take appropriate steps to create awareness about improved technology, participation in implementation of government schemes, time and financial management.

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