Indian Journal of Extension Education
Vol. 54, No. 2, 2018 (256-260)

Knowledge Level of North Andaman Farmers towards Scientific Vegetable Cultivation Practices

B.L. Kasinath[1], Shardul Vikram Lal[1], Shailesh Kumar[1], Pooja Kapoor[1], D. Basantia[1], B.L. Meena[1], Tanmai Paul[1], S.K. Zamir Ahmed[2], S. Dam Roy[2] and A. Kundu[2]

ABSTRACT

The present study was conducted in Diglipur Tehsil of North & Middle Andaman district with 120 respondents from 8 villages using random sampling techniques during 2016-17. The results showed that 20 per cent of farming community belonged to youth and had medium level of annual income (47%). These socio-economic factors were mainly attributed to their poor adoption behaviour of cultivation practices. The vegetable cultivation significantly contributed (50%) to the farmers' income. Further, it was found that majority of farmers still depend on private dealers to redress the pest problems. The correlation analysis with farmer's socio-economic factors and adoption of improved cultivation practices revealed that knowledge of respondents increased with the increase in their education and income. Educating the farmers through mass media, training and demonstration will help the farmers in learning/adopting new technologies, which intern help them to increase their productivity level and their farming income on sustainable basis. Thus, it can be observed from this study that age, education and farming income influence much on motivation for learning and adoption level of farmers.

Keywords: Andaman, cultivation, knowledge level, scientific vegetable

INTRODUCTION

In India, vegetables are grown in an area of 10,106 million ha with an annual production of 169.06 mt and average productivity of 17.7 mt/ha. The total geographical area of Andaman and Nicobar Islands is 8249 sq km of which 85 per cent area is covered under forest. The major crops grown in these Islands are Paddy, Coconut, Arecanut, spices, fruits and vegetables. North and middle Andaman is a prominent district out of the three districts of Andaman and Nicobar Islands wherein good farming is practiced in an area of 7538 ha. In this district, out of the three tehsils, Diglipur tehsil is having major plain land and after the paddy crop, majority farmers practice vegetable cultivation in rice fallow lands as their main source of income. The major constraints for the vegetable cultivation are lack of irrigation facility during summer months, non/timely availability of quality seeds and other inputs and farmers poor knowledge of farmers about nutrition and pest management practices.

Further due to low population in the island (49 persons/Sq.km), marketing of their produce during glut period is a major constraint. Sixty per cent of the population are living in the Port Blair, capital of Andaman & Nicobar Islands and 300 kms away from Diglipur. Due to non-availability of cold storage/ transportation facilities, farmers are not able to send

[1]ICAR-Krishi Vigyan Kendra, Nimbudera, CIARI, North and Middle Andaman-744201, [2]ICAR-Central Island Agriculture Research Institute, Port Blair, A&N Islands-744104

their produce to distant markets like Port Blair and are deprived of getting proper price for their produce. The knowledge, experience and attitude of farmers transformed the growth of agriculture in mainland states. A study in Uttaranchal showed that 73.60 % knowledge gap existed with respect to adoption of improved Agricultural practices (Chandra and Pandey, 2006). Keeping in view of this, a study was undertaken to assess the knowledge level of farmers related to scientific crop production practices, INM and IMP technologies as well as the constraints in the production and marketing of vegetables.

Methodology

The study was conducted in the year 2016-17 in Diglipur Tehsil of North and Middle Andaman district. In this tehsil, eight villages representing major vegetable growing belt was selected in consultation of local line departments. A total of 120 farmers were selected randomly for the study with 15 farmers from each village. For the study, data were collected through a personal interview technique and analyzed using frequency and percentage.

To assess the knowledge level of vegetable growers information about market demand, seasonal requirement, knowledge about improved varieties/ hybrids seeds and their cost, precision farming techniques like nursery preparation, mulching, drip irrigation, data were gathered using three point continuum scale. Further, the information about farmers' knowledge on INM and IPM practices along with socio-economic parameters was also collected. The knowledge was evaluated in the continuum of no knowledge, less knowledge and good knowledge as followed by researchers during similar studies.

RESULTS AND DISCUSSION

The knowledge adoption is a social process (Rogers, 1993). The adoption behavior would be influenced by many factors like their social networks, personal circumstances, education and economic situations. This study showed that majority of respondents was in the age group of 31-55 years (55%) followed by youth (20%) in the age group of < 30 years. About one-third (32%) of farmers had primary level of education while 45 per cent were illiterate and 12 per cent were graduates. Vegetable cultivation contributes around 50% of annual income of the farmers. Paddy (sole crop during Kharif) is purely used for own consumption and thus contribution towards family income is low. Vegetable cultivation contributes significantly (47%) to farmers in their annual income (Table 1).

Table 1: Socio economic profile of vegetable growers

Profile Characters	Classification	Respondents (N=120)	
		Frequency	Percentage
Age	Young (Upto 30 years)	24	20.00
	Middle (31-55 years)	66	55.00
	Old (more than 55 years)	30	25.00
Education level	Illiterate	54	45.00
	Primary	39	32.50
	Secondary	15	12.50
	Graduate and above	12	10.00
Annual income	Low income (Upto Rs 50,000)	23	19.16
	Medium income (Rs 50,001-Rs 1,00,000)	56	46.67
	High income (more than Rs 1,00,001)	41	34.17
Income from Vegetable Cultivation	Low income (Upto Rs 25,000)	19	15.83
	Medium income (Rs 25,001-Rs 50,000)	59	49.17

Better crop yields can be obtained through the adoption of latest scientific technologies and good crop production practices. As shown in table 2 the knowledge level of respondents in 26 parameters was analyzed. Majority of farmers possess medium knowledge about seasonal requirement (51%) and suitable soil requirement of crop (48%) and many farmers possess good knowledge on these aspects as this was practiced by them over a long period (Sharma, 2002). For a successful crop, variety and seed quality plays a vital role. The study showed that 62 per cent are not having sufficient knowledge about availability of pest and disease resistance varieties/ hybrids as these will minimize the crop loss as well as reduce the cost of production in addition to increased yields. These practices had contributed significantly to low yield and income. The majority of farmers possess fair knowledge about seed quality (51.66%), seed rate (60%), seed cost (56.66 %), nursery management (50.83%), spacing (59.16%) and land preparation (53.33%) aspects. These techniques have been standardized long back and the farmers have well adopted these practices., It was found that 88 percent of respondents do not have any knowledge/awareness about drip irrigation, mulching and fertigation practices, thus it was noticed that the average productivity is far below the mainland growers.

Micronutrient and bio-fertilizer management are practiced only by 30 percent of farmers, which have also contributed to lower productivity. The knowledge level on these practices like identification of pest and diseases showed fair level knowledge (50.8%) and 31.66 per cent did not have any knowledge. Further, the knowledge in use of pesticides/fungicides is also poor (39.16 % no knowledge). As shown in Fig. 1 majority of farmers are still approaching pesticides dealers for their control of pests and only few will approach Agricultural department/KVK. It is good to note that 47.5 per cent farmers are aware of waiting period on the other hand 36.66 percent farmers were not aware of biological method of control of pests and diseases.

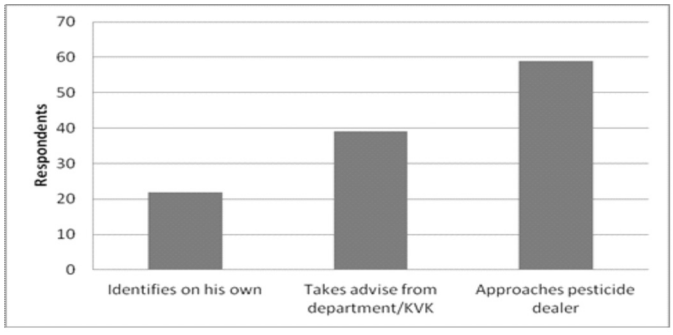

Fig. 1: Knowledge level of respondents in plant protection

The study showed that 56.66 per cent farmers knew about when to harvest their produce (Harvesting Index). It was found that 55 per cent are not grading their produce. Further, it was noticed that 46.66 per cent respondents possess less knowledge about marketing of their produce. On the other hand, 56 per cent of farmers are not aware of hidden market costs. Majority of them are bringing their produce in gunny bags (no use of crates). This leads to damage, results in poor quality of produce which ultimately attribute to lower rates at the local markets (Table 2).

Thus, from the table no. 3 it can be observed that 46 per cent of respondents possessed medium level of knowledge. Only 22.5 per cent possess good knowledge and on the other hand 31.61 per cent of farmers have poor knowledge about latest technologies/skills in vegetable cultivation. This may be mainly due to lower socio-economic status of the farmers. Rogcrs (1993) found that farmers adoption is a social process. Thus there is a need to increase the level of knowledge through awareness training/ demonstrations in order to achieve the desirable yield levels in vegetable cultivation, which contributes significantly towards in farmer's income.

The knowledge level of respondents in different dimensions of vegetable cultivation practices was correlated with their socio-economic parameters like age, education and annual income as given in table 4. The result indicated that level of respondents increased with the increase in their education and annual income. Thus, age, education and farming income influence much on motivation for learning and adoption level of farmers.

Table 2: Knowledge level of respondents about basic agricultural practices

Cultivation Practices	Level of Knowledge					
	No knowledge		Less knowledge		Good knowledge	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
Seasons	12	10.00	62	51.66	46	38.33
Soil type	14	11.66	58	48.33	48	40.00
Varieties	38	31.66	63	52.50	19	15.83
Resistant varieties	74	61.66	32	26.66	14	11.66
Seed quality	47	39.16	62	51.66	11	9.16
Seed rate	34	28.33	72	60.00	14	11.66
Seed Cost	22	18.33	68	56.66	30	25.00
Nursery management	24	20	61	50.83	35	29.16
Spacing	12	10	71	59.16	37	30.83
Land preparation	18	15	64	53.33	38	31.66
Precision farming	106	88.33	14	11.66	0	0
FYM application	9	7.50	60	50.00	51	42.5
Fertiliser application	11	9.16	68	56.66	41	34.16
Bio fertiliser/Micronutrient	37	30.83	47	39.16	36	30.00
Irrigation management	26	21.66	48	40.00	46	38.33
Mechanical weeding	105	87.5	9	7.50	6	5.00
Pest and diseases	38	31.66	61	50.83	21	17.50
Pesticides'	47	39.16	49	40.83	24	20
Waiting period	38	31.66	57	47.50	25	20.83
Biological control	42	35.00	54	45.00	24	20.00
Organic bio-control	44	36.66	56	46.66	20	16.66
Harvesting index	21	17.50	68	56.66	31	25.83
Post-harvest Handling	44	36.66	62	51.66	14	11.66
Grading	66	55.00	46	38.33	8	6.66
Marketing	7	5.83	56	46.66	57	47.50
Marketing Cost	68	56.66	33	27.50	19	15.83
Average	**38.61**	**32.17**	**53.88**	**44.90**	**27.50**	**22.91**

Table 3: Overall classification of knowledge level of respondents towards agricultural practices

Knowledge level of respondents	Classification	
	Frequency	Percentage
No knowledge	38	31.66
Less Knowledge	55	45.83
Good knowledge	27	22.50
Total	**120**	**100.00**

Table 4: Correlation of socio economic status with knowledge level of respondents

Socio economic parameter	Knowledge Correlation coefficient "r"
Age	0.861*
Education	0.358*
Annual income	0.560*
Income from Vegetable	0.531*

*Significant at 1% level of significance using t test

CONCLUSION

The study clearly showed that average productivity of vegetables is comparatively low as compared to mainland farmers due to less awareness and knowledge of scientific vegetable cultivation practices. Further, the annual income of Island farmers is also low, which had also contributed in the adoption of new technologies by the farmers in recent times. In order to increase the productivity, efforts should be made by the extension institutions in motivating and educating the farmers through mass media, training and demonstration which intern help in achieving desirable changes in their income by achieving optimum yields on sustainable basis.

Paper received on : June 07, 2018
Accepted on : June 23, 2018

REFERENCES

Chandra, N. and Pandey, D. (2006). Transfer of technology in hill agriculture. In Gupta, H. S., Srivastav, A. K. and Bhatt, J. C. (Eds) Sustainable production from Agricultural Watersheds in North West Himalaya.Vivekanand Parvitiya Krishi Anusandan Sansthan, Almora, pp 526-534.

Sharma, L. K. (2002). Adoption of recommended practices for chili cultivation and problems faced by the growers of selected districts of Punjab, Ph.D. thesis (Un-Published), Punjab Agricultural University, Ludiana.

Rogers, E.M. (2003). Diffusion of innovations. Free press. New York.