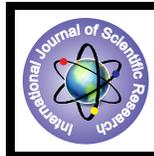


Analysing The Constraints Associated With the Adoption of Scientific Vegetable Cultivation Practices



Agriculture

KEYWORDS : Adoption, Constraints, vegetable cultivation and rank based quotient analysis.

REMA DAS

Research Scholar, M.Sc (Ag) in Agricultural Extension Department of Agricultural Extension Uttarbanga Krishi Viswavidyalaya, Pundibari, COOCHBEHAR, West Bengal

AMITA HANGLEM

Research Scholar, Department of Agricultural Extension, Uttar Banga Krishi Vishwavidyalaya, Pundibari, Coochbehar, West Bengal

TAPAS DAS

Research Scholar, M.Sc (Ag) in Agronomy, Uttarbanga Krishi Viswavidyalaya, Pundibari, COOCHBEHAR, West Bengal

K. Pradhan

Assistant Professor, Department of Agricultural Extension Uttarbanga Krishi Viswavidyalaya, Pundibari, COOCHBEHAR, West Bengal

ABSTRACT

With the changing scenario, high-value vegetable production has become a very profitable one. In different parts of India farmers now prefer to grow vegetables as it gives better and quick return round the year. But farmers are facing various types of constraints in adoption of scientific vegetable production. For this reason, this study aims to analyze the constraints faced by the farmers in adoption of scientific vegetable production. The study was conducted in CoochBehar district of West Bengal. Total 60 respondents were selected through multistage random sampling procedure. Total 14 major constraints such as lack of improved package of practice, lack of high yielding/ hybrids resistant or tolerant diseases, pests, non-adoption of IPM/IDM technology, improper marketing system, lack of storage(multipurpose) and processing facilities, high cost of hybrid seeds, cool chain is absent etc. are identified after having thorough consultation with experts of that area. The semi structure interview schedule was used to collect information from the vegetables growers in a participatory way. The constraints are evaluated and ranked with the help of the rank based quotient analysis. The results showed that the major constraints like faulty or improper marketing system, high humidity and rainfall aggravates more diseases and pest complex, lack of high yielding/ hybrids resistant or tolerant to diseases or pests, High cost of hybrid seeds, Lack of soil testing facility, Little or lack of multipurpose storage and processing facility are mainly faced by the vegetable growers.

Introduction

Coochbehar district is predominantly an agrarian district having 60% of surplus production in vegetable and food crops and the district has a considerable production of both winter and summer vegetables (www.coochbehar.nic.in 2010). The district has an area and production of 35000ha and 66,5000M.T for winter vegetables, 7000ha and 73,500MT for summer vegetables and 8200ha and 98,400MT for kharif vegetables (Horticulture of Coochbehar district). Vegetable like Cabbage, Cauliflower, Brinjal, Pointed gourd, Tomato, Radish, Ridge gourd are now produced in huge quantity mainly at Cooch Behar-I, Cooch Behar-II, Tufanganj sub-division, Haldibari as well as in all the blocks of this district. In spite of immense scope for cultivation of above vegetable crops the district is suffering for increasing the area and their production. This is due to the reasons of very low marketing facility, want of food processing industries and cold storage, without the cold storage facilities the perishable horticultural products are not possible to supply constantly to the food processing industries. These problems lead to lower adoption of scientific vegetable cultivation practices. So the study aims to analyze the constraints associated with the adoption of scientific vegetable cultivation practice. In the present situation there is a need to develop the strategy for developing the vegetable cultivation in the rural areas due to the demand of the growing vegetables in the local and regional markets. For maximizing the profits from the vegetable enterprises the most considerable fact is that the identification of the constraints embedded with it and makes solution as early as possible of those identified constraints. Keeping these in view the present paper has envisaged and identified the constraints embedded with the vegetable enterprises and prioritization of the same for the immediate solution.

Methodology

The study was conducted in Coochbehar district. Coochbehar Block-I & II and villages were purposively selected considering the level of vegetable cultivation, its growth and it as a profitable livelihood option. Then 60 vegetable growers were randomly

selected for the study. Information was collected through a semi structured interview schedule. After consulting with experts 14 major constraints were identified and collected constraints were ordered and ranked through Rank Based Quotient (RBQ) analysis with the help of following formula:

$$RBQ = \frac{\sum f_i(n+1-i)}{N \times n} \times 100$$

Where, f_i is the frequency of the informants for i th rank; N is the total number of informants and n is the total number of constraints.

Results and Discussion

In this study Table 1 represents the socio-economic status of the respondents of the study area. The results showed that highest proportion (53.33%) of the respondents was in middle age group (36-50 years) as compared to 28.33 per cent belonged to old age group and only 18.33 per cent in young age category. The educational status of the respondents varies from illiterate to higher secondary level with a mean 8.20 and the result revealed that maximum of the vegetable growing farmers (61.66%) were confined to a education level up to secondary followed by primary (18.33%). Similarly in case of land holding status, the respondents have been distributed in the category of marginal (1-3 bigha), small (3.5-7 bigha) and medium (7.5-10 bigha) with an average of 6.25 ha. It was observed that the highest percentage of farmers (41.66%) were marginal farmers followed by small farmers (38.33%) and medium farmers (20%). Table 1 also showed that the highest proportion (66.66%) of the respondents belonged to low income group (1000 -5000/-) followed by 18.33 per cent medium income group (5000-10,000/-) and 15% high income group with an average income of Rs.11,676.53/- per month.

This study has been carried out to prioritize the constraints so that we can identify the major problems which need an immediate solution to expand the vegetable cultivation of this district. So, total 14 major constraints such as lack of improved package of practice, lack of high yielding/ hybrids resistant or tolerant

to diseases, pests, non –adoption of IPM/IDM technology, improper marketing system, less area under organic farming due to fragmented land and less awareness among the farmers, lack of storage(multipurpose) and processing facilities, lack of knowledge about post harvest technology, high humidity and rainfall aggravates more diseases and pest complex, export of perishable vegetable is impossible, high cost of hybrid seeds, Refrigerated transport system or cool chain is absent, lack of training of scientific vegetable production technology, lack of soil testing facility, lack of irrigation facility etc. are identified after having thorough consultation with experts of that area. In Table2 the constraints were evaluated and ranked with the help of the rank based quotient analysis with the above formula. The results revealed that among the 14 constraints faulty or improper marketing system has the highest RBQ value 88.21 which means there is an urgent need to strengthen linkage between market functionaries, agro processors and farmers. The second most important constraint is high humidity and rainfall aggravates more diseases and pest complex with a RBQ value 72.86. From the table it is clear that the constraint lack of high yielding/ hybrids resistant or tolerant to diseases or pests (51.4) ranked third followed by High cost of hybrid seeds (50) ranked fourth, Lack of soil testing facility (42.86) ranked fifth etc. Among 14 constraints the least important constraint is Refrigerated transport system or cool chain is absent with a RBQ value 5.36. To overcome mar-

keting barriers an effective market information system should be developed so that farmers could be familiarized with different aspects of marketing system and can harvest the optimum output from their vegetable enterprise.

Conclusion

It is discernable from the study that the major constraints like faulty or improper marketing system, high humidity and rainfall aggravates more diseases and pest complex, lack of high yielding/ hybrids resistant or tolerant to diseases or pests, High cost of hybrid seeds, Lack of soil testing facility, Little or lack of multipurpose storage and processing facility are mainly faced by the vegetable growers. Thus there is a need to organize awareness and training programmes, setting up of storage and processing industries, timely soil testing for acidic soil management, and introduction of post harvest technologies to encourage the farmers for vegetable production so that the farmers become more economically independent. In the realm of free trade liberalization, the most important thing is that the growers should be oriented towards the scientific vegetable production and developed an appropriate marketing strategy to get the optimum benefit from the market. In this direction the present study can go a long way due to the appropriate identification of the constraints embedded with the vegetable enterprise and their prioritization in favor of making the coping strategies.

Table1. Distribution of category of respondents according to socio economic status (N=60)

variables	category	frequency	percentage	mean
Age(in years)	Young	11	18.33	43.59
	Middle aged	32	53.33	
	Old aged	17	28.33	
Education	Illiterate (nil)	8	13.33	8.20
	Primary (class1-5)	11	18.33	
	Secondary (class6-10)	37	61.66	
	Higher secondary (class11-12)	4	6.66	
Land holding (bigha)	Marginal(1-3bigha)	25	41.66	6.25
	Small(3.5-7bigha)	23	38.33	
	Medium(7.5-10bigha)	12	20	
Income (Rs./month)	Low	40	66.66	11676.53
	Medium	11	18.33	
	high	9	15	

Table2. Rank Based Quotient Analysis of the constraints

Constraints	Mean rank	Frequency	RBQ value	Rank
Lack of improved package of practices	9.5	36	21.43	X
lack of high yielding/ hybrids resistant or tolerant to diseases or pests	5.3	48	51.43	III
Non adoption of IPM or IDM technology	9.65	24	14.28	XII
Faulty or improper marketing system	2	57	88.21	I
Less area under organic farming due to fragmented land and less awareness among the farmers	9.4	27	16.07	XI
Little or lack of multipurpose storage and processing facility	6.25	39	37.14	VI
Lack of knowledge about post harvest technology	9.95	42	25	IX
High humidity and rainfall aggravates more diseases and pest complex	2.6	51	72.86	II
Export of perishable vegetable is impossible	12.5	30	7.14	XIII

High cost of hybrid seeds	4.5	42	50	IV
Refrigerated transport system or cool chain is absent	13.35	42	5.36	XIV
Lack of training of scientific vegetable production technology	6	30	32.14	VII
Lack of soil testing facility	6.1	45	42.86	V
Lack of irrigation facility	7.55	27	25.71	VIII

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