To study on knowledge of onion crop production technologyby farmers Sikar District of Rajasthan

Abstract: Agriculture is a major sector of the Indian economy, which provides employment for large proportion of the predominantly rural population. Besides this it also provides food for human consumption and raw materials for industries. There has been tremendous growth (20.32 per cent compound) in exports of processed fruit and vegetables particularly following new economic policies. India is the second largest producer of vegetables in the world next only to China. The average productivity of vegetable crops in India is considerable low (18 metric tons per hectare) as compared to that in other agriculturally developed countries of the world. Agriculture sectors crop production has its own emphasis and importance. The study was conducted in Sikar district of Rajasthan to measure the knowledge and adoption of onion crop production technology . Total 120 respondents were selected randomly. The data was collected by personal interview method by using pre structure interview schedule later appropriate statistical analysis is done to find out the meaningful results. The majority of the respondents 50 percentage belongs to middle aged group. 35.84 percentage belongs to illiterate and 48.33 percent were doing agriculture as main occupation. 46.67 per cent have medium income level . Majority of 49.17 per cent respondents belongs to low level of knowledge and 44.17 per cent belongs to medium adoption level .

Keywords: knowledge, Adoption and onion crop production.

Introduction

Agriculture is a major sector of the Indian economy, which provides employment for large proportion of the predominantly rural population. Besides this it also provides food for human consumption and raw materials for industries. There has been tremendous growth (20.32 percent compound) in exports of processed fruit and vegetables particularly following new economic policies. India is the second largest producer of vegetables in the world next only to China. The average productivity of vegetable crops in India is considerable low (18 metric tons per hectare) as compared to that in other agriculturally developed countries of the world. Agriculture sectors crop production has its own emphasis and importance. Crop production consists of various cereals, pulses, oilseeds, commercial crops and horticulture. Horticulture crops cover large varieties of fruits,

vegetables, flowers plantation and spice crops. Among these, vegetable cultivation is the major attraction to farmers as it is comparatively more remunerative than field crops. The wider adaptability of vegetables to different kinds of abiotic stresses like water, soil, weather etc. offers enormous scope for growing vegetables in stress and waste land areas. They also play an important role in commerce and economy particularlythrough export trade.

India being a predominantly agricultural economy enjoys a second position in the world in total vegetable production next only to China. Presently vegetable cultivation occupies 6.10 million hectares area with an annual production of 85.0 million tonnes. The country being blessed with the unique gift of nature of diverse climates and distinct seasons, it makes it possible to grow an array of vegetables whose number exceeds more than a hundred types.

Vegetables are grown in every part of our country under varied agro-climatic and soil conditions in plains as well as in hilly regions. At present, India produces about 70 different varieties of leafy fruity and starchy tuber varieties of vegetables. More than 40 kinds of vegetables belonging to different groups namely solanaceous, cucurbitaceous leguminous, cruciferous (core crops) root crops and leafy vegetables are grown in India in tropical, subtropical and temperate regions. Important vegetables grown in India are tomato, onion, brinjal, cabbage, cauliflower, okra, peas etc. India contributes about 14 per cent of the world vegetable production and occupies first position in the cauliflower, second in onion and third in cabbage in the world. This shows the importance of onion production in India.

There is no more distinctive feature of agriculture than its dynamism. Farming practices change continually. Farmers build on their own experience and that of their neighbours to refine the way they manage their crops. Changes in natural conditions. resource availability, and market development also present challenges and opportunities to which farmers respond. In addition, farmers learn about new technologies from various organizations, programs, and projects dedicated to research, extension, or rural development. These organizations develop and promote new varieties, inputs, and management practices. It is essential that such organizations be able to follow the results of their efforts and understand how the technologies they promote fit into the complex pattern of agricultural change in which all farmers participate.

Research Methodology

Descriptive research design was adopted for the study as it describes the characteristics or phenomena that are being studied. The present study was conducted in Sikar district of Rajasthan. Out of 9 blocks in Sikar district, Dhod block is selected purposively based on maximum area covered under onion crop production. From the selected block, five villages were selected purposively based on the maximum area covered under onion crop production.

Objectives of the Study:

1. To ascertain the socio-economic profile of the respondents.
2. To analyse the knowledge and adoption level of recommended cultivation practices of onion crop.

Results and Discussion

Table No. 1- Socio-economic profile of the respondents

S.No	Independent variables	Category	Frequency	Percentage
1.	Age	Young (Up to 35 years)	34	28.33
		Middle(36-55 years)	60	50.00
		Old (above 55 years)	26	21.67
2.	Education	Illiterate	43	35.84
		Literate	18	15.00
		Primary Education	16	13.33
		Junior high education	14	11.67
		High Education	12	10.00
		Intermediate	10	8.33
		Graduate & above	07	5.83
3	Occupation	Agriculture	58	48.33
		Agriculture + Labor	42	35.00
		Agriculture + Business	20	16.67
4	Land holding	Up to 2 acres	35	29.17
		2 to 5 acres	71	59.16
		More than 5 acres	14	11.67
5	Family size	Small (3-4)	59	49.17
		Medium (5-7)	48	40.00
		Large (> 7)	13	10.83
6	Annual income	Rupees < 1,00,000	42	35.00
		Rs. 1,00,001- 2,00,000	56	46.67
		Rs. > 2,00,000	22	18.33

7	Mass media exposure	Low (5-8)	46	38.34
		Medium (9 – 11)	64	53.34
		High (12 – 14)	10	8.33
8	Innovativeness	Low (5- 7)	54	45.00
		Medium (8- 9)	42	35.00
		High (10 -11)	24	20.00
9	Risk bearing capacity	Low (8-11)	46	38.33
		Medium (12-14)	62	51.67
		High (15-17)	12	10.00
10	Extension agent contact	Low (5-7)	36	30.00
		Medium (8-9)	59	49.17
		High (10-11)	25	20.83

From the table – 1 , it shows that 50.00 per cent of the respondents belongs to the middle age group. In the survey we find that the 35.84 per cent of the respondents are illiterate. In terms of annual income 46.67 per cent of the respondents has medium level of income in which 59.16 per cent of the respondents has 2-5 acres of land holding . Find out that 48.33 per cent of the respondents has agriculture as their main occupation. Therefore 49.17 per cent of the respondents has small family size. It is evident that 53.34 per cent of the respondents has medium level of mass media exposure and 45.00 per cent of the respondents has low level of innovativeness. It is seen that 51.67 per cent of the respondents has medium level of risk bearing capacity. Finally 49.17 per cent of the respondents has medium level of extension agent contact. Similar finding is also reported by (**Sharma and Badodiya, 2016)**

Table No. 2 Knowledge of the respondents on improved onion cultivation practices

S. No.	Statement	Response					
		Fully correct		Partially correct		Not correct	
		f	*%*	*f*	*%*	*F*	*%*
1.	Field preparation: i. Traditional method- 2-3 times ploughing ii. Use of zero tillage machine iii. Surface seeding method iv. Seed driller	36	30	53	44.17	31	25.83
2.	Improved variety: I. Udaipur-101 II. Pusa round III. Pusa white flat IV. Pusa ratna	43	35.83	40	33.33	37	30.83
3.	Seed and its treatment: Apron XL or Maxim 480 FS	14	11.67	64	53.33	42	35.00
4.	Sowing time: • June – July • August - September	39	32.50	62	51.67	19	15.83
5.	Spacing I. 20 x12 II. 10 x 5	25	20.83	59	49.17	36	30.00
6.	Fertilizers:(per hectare) NPKS/ha : 120:50:50:50 FYM – 25 tonnes/ ha	50	41.67	60	50.00	10	8.33
7.	Irrigation: I. 1 times II. 2 times	32	26.67	65	54.17	23	19.17

	III. 3 times IV. 4times V. 5times						
8.	Weeding and hoeing operations: I. 2 times II. 3 times III. 4 times	21	17.50	74	61.67	25	20.83
9.	Weed control: I. Take two hand weeding on 25 or 45 days after sowing II. Top dressing	28	23.33	66	55.00	26	21.66
10.	Diseases: 1. Damping off 2. Pink root rot 3. Black mould	37	30.83	52	43.33	31	25.83
11.	Harvesting	36	30.00	58	48.33	26	21.67
12.	Yield: 30-40 t/ha 10-12 t/acre	54	45.00	35	29.17	31	25.83
13.	Soil: Well drained soil	38	31.67	50	41.67	32	26.67
14.	Chemical weed control: I. Pre-emergence II. post emergence	29	24.17	71	59.17	20	16.67
15.	Soil PH I. 6.0 II. 7.0	48	40.00	73	60.83	6	5.00

From the above table – 2 it shows that a majority of the respondents reported that regarding field preparation, 44.17 per cent partially correct. Regarding improved variety, 35.83 per cent, reported fully correct. Regarding seed and its treatment, 53.33 per cent partially correct. Regarding sowing time, 51.67 per cent, partially correct. Regarding spacing, 49.17 per cent partially correct respectively.

Meanwhile, regarding fertilizers, 50.00 per cent partially correct. Regarding irrigation, 54.17 per cent partially correct. Regarding weeding and hoeing operations, 61.67 per cent and partially correct. Regarding weed control, 55.00 per cent partiallycorrect. Regarding diseases, 30.83 per cent, 43.33 per cent and 25.83 per cent of respondents reported fully correct, partially correct and not correct response respectively.

Similarly, regarding harvesting, 48.33 per cent partially correct. Regarding yield, 45.00 of respondents reported fullycorrect, respectively. Regarding soil,
41.67 per cent of respondents reported partially correct. Regarding chemical weed control, 59.17 per cent of respondents reported, partially correct and. Regarding soil pH, 34.16 per cent, 60.83 per cent and 5.00 per cent of respondents reported fully correct, partially correct and not correct response respectively.

Table No. 3-Distribution of respondents according to their overall knowledge level

S. No.	Category	Number	Percentage
1.	Low level knowledge (19-27)	34	28.33
2.	Medium level knowledge (28-35)	59	49.17
3.	High level knowledge (36-43)	27	22.50
	Total	120	100.00

It was clearly visible that majority 49.17 per cent of the onion growers had medium level of knowledge on improved maize cultivation practices, 28.33 per cent and 22.50 per cent of the onion growers had low and high level of knowledge on improved onion production practices respectively. Similar finding is also reported by **Kumar (2021)**

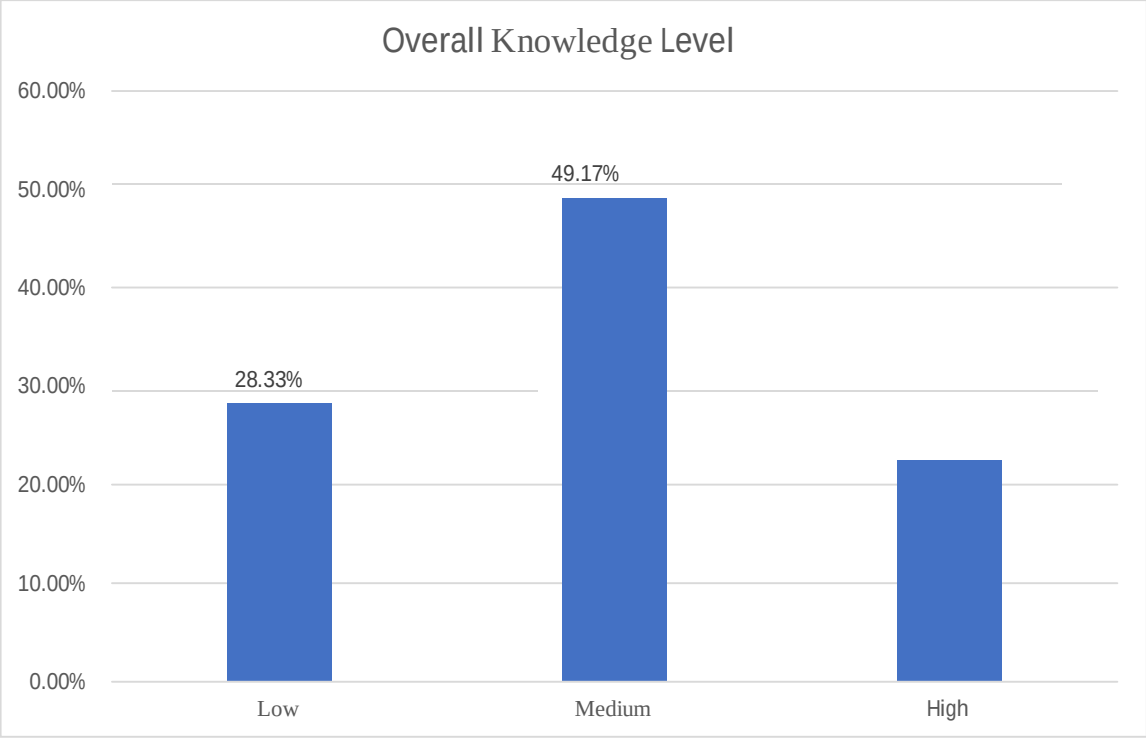

Fig. 1- Distribution of respondents based on their knowledge on onion crop production.

Table No. 4 Association between selected independent variables with household activities.

Sl.No.	Variables	Correlation coefficient ®
1	Age	0.999*
2	Education	0.835*
3	Occupation	0.295*
4	Land holding	0.521*
5	Family size	-0.349*
6	Annual income	0.914*
7	Mass media exposure	0.875*
8	Innovativeness	0.318*
9	Risk bearing capacity	0.868*
10	Extension contact	0.993*

*= Significant

From this aboveTable-4 concluded that the independent variables i.e. age, education, occupation, land holding, annual income, mass media exposure, innovativeness, risk bearing capacity and extension contact were positively and significantly correlated with the knowledge of onion crop production technology at 0.01% of probability. Whereas the independent variable of family size was negatively and significantly correlated with the knowledge of onion crop production technology at 0.05% of probability. Therefore , the null hypothesis was rejected for these variables.

CONCLUSION :

It is concluded that the age of the majority respondents was at middle age group and their education level is also medium. The low level of respondents were showing interest in innovativeness. The overall knowledge of the respondents are found under medium level. The overall adoption of the respondents are found under medium level. The independent variable of the respondents are age, education, occupation, land holding, annual income, mass media exposure, risk bearing capacity, innovativeness and extension contact were positively significant correlated with the knowledge at 0.01% probability. The independent variable of the respondents are age,education, occupation, land holding, family size, annual income, mass media exposure, innovativeness, risk bearing capacity and extension contact are positively and significantly correlated with the adoption at 0.01% of probability. The study inferred that the majority of the onion growers were expressed major constraints such as lack of training programme related with improved practices, lack ofproper information at time, unavailability of seed at time . It is suggested by the respondents that the government should conduct demonstrations about new technology of production practices, support the farmers in the form of loans, subsidies, providing minimum knowledge about agricultural new technologies etc.

Consent

As per international standard or university standard, respondents' written consent has been collected and preserved by the author(s).

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