PLANTING MATERIAL AND SOIL HEALTH RELATED RISK MANAGEMENT PRACTICES ADOPTED BY THE GINGER GROWERS

S.H. Ban [1], J. B. Patel [2] and Raj C. Popat[3]

1 Ph.D. Student, Dept. of Agricultural Extension & Communication, BACA, AAU, Anand 388110
2 Associate Professor, Dept. of Agricultural Extension & Communication, BACA, AAU, Anand 388110
3 Ph.D. Student, Dept. of Agricultural Statistics, BACA, AAU, Anand 388110
Email : banshrikantoo7@gmail.com

ABSTRACT

The study was conducted in the Dahod and Mahisagar districts of the Gujarat state. Two talukas from each district were selected. From Dahod district Fatepura and Sanjeli and from Mahisagar district Lunawada and Santrampur talukas were selected for the study. Afterwards, five villages were randomly selected from each taluka. Thus, the total 20 villages were selected for this study. Lastly, by following proportionate random sampling method 200 ginger growers from twenty selected villages were considered for study. The study reveals that majority of the respondents belonged to middle to old age group having secondary to graduation level education, medium to high level of experience in ginger cultivation, nuclear type of family, very low to low level of social participation, marginal to small size of land holding, farming and animal husbandry as their main occupation and medium to very high level of annual income. Regarding risk management practices related to adoption of planting material, overwhelming majority (90.50 per cent), of the ginger growers used fully matured rhizomes. While, more than three fourth (78.00 per cent) of the ginger growers had partial adoption of cultivation of recommended variety as per location. More than two-fifth (43.50 per cent) of the ginger growers booked planting material in advance from reliable sources and only 6.00 per cent of them booked the extra planting material for gap filling. As far as adoption of risk management practices related to soil health, more than half (57.00 per cent) of ginger growers had complete adoption of application of well-decomposed FYM. However, 85.50 per cent of them had not applied vermi-compost and 53.50 per cent of them were not applied bio-fertilizers.

Keywords : *adoption, ginger growers, management, planting material, risk and soil health*

INTRODUCTION

Ginger crop is very important spices crop. Its productivity is very high. In India, about 70.00 per cent of the total ginger production is confined to Kerala. Other states which grow ginger are Assam, Andhra Pradesh, Himachal Pradesh, West Bengal, Sikkim and Gujarat. The total area under ginger cultivation in India was 1, 60,140 hectares and the total production of the country was 11, 48,160 MT in the year 2018-19 (Anonymous, 2019). The area under ginger cultivation in Gujarat state was 4870 hectares and the total production was 1, 08,250 MT in the year 2018-19 (Anonymous, 2019). The ginger crop productivity of Gujarat state in the year 2018-19 was 22.23 tonnes per hectare and the productivity of India was 6.98 tonnes/ha. But this crop is highly risky and uncertainty of production because of highly susceptible to many risks, *viz.*, disease and pest, other natural practices, storage problems, fluctuations in prices etc. The cultivation of ginger is highly labour intensive. The major hurdle in the production of ginger is inadequacy and non-availability of healthy seed. Most of the farmers retain their own ginger rhizome in adequate quantities for the purpose of seed. The preservation of seed from previously harvested crop is facing a major problem due to the storage disease. Ginger is a heavy feeder crop which requires heavy dosage of fertilizers and manures. Day by day increasing the cost of chemical fertilizers per hectare and its use of is also far below the recommended dosage. The low level of awareness and adoption of essential practices of risk management in ginger cultivation contributes to low production level. Therefore, in order to realize the actual situation at grass root level, systematic study on the practices of risk management adopted by the farmers in the ginger crop is needed.

OBJECTIVE

To know the planting material and soil health related risk management practices adopted by the ginger growers

METHODOLOGY

The investigation was carried out in the Dahod and Mahisagar districts of the Gujarat state. Two talukas from each district with highest area under ginger cultivation were selected for the study. The talukas from Dahod district

were Fatepura and Sanjeli and from Mahisagar district were Lunawada and Santrampur. A list of villages where ginger crop was grown was prepared. Afterwards, five villages were randomly selected from each taluka. Thus, the total 20 villages were selected for this study. Lastly, by following proportionate random sampling method 200 ginger growers from twenty selected villages were considered for study. The interview schedule was prepared as a tool for collection of requisite information from the respondents. The data were collected by personal interview technique from randomly selected farmers of the Dahod and Mahisagar districts of Gujarat. Frequency, percentages were worked out for analysing and interpretation of data.

RESULTS AND DISCUSSION

Table 1: Personal, socio-economic characteristics of the ginger growers (n=200)

Sr. No.	Characteristics	Number	Per cent
	(A) Personal characteristics		
1	**Age**		
	Young (Up to 35 years)	49	24.50
	Middle (Between 36 to 55 years)	101	50.50
	Old (Above 55 years)	50	25.00
2	**Education**		
	Illiterate	10	05.00
	Primary education (up to 7th standard)	28	14.00
	Secondary education (8th to 10th standard)	60	30.00
	Higher secondary education (11th to 12th standard)	50	25.00
	Graduation	46	23.00
	Post-graduation	06	03.00
3	**Experience**		
	Very low (up to 5 years)	28	14.00
	Low (6 to 10 years)	52	26.00
	Medium (11-15 years)	38	19.00
	High (16-20 years)	39	19.50
	Very high (21 years and above)	43	21.50
	(B) Social characteristics		
4	**Type of family**		
	Nuclear	103	51.50
	Joint	97	48.50
5	**Social participation**		
	Very low (up to 2.4)	52	26.00
	Low (2.5 to 4.8)	112	56.00
	Medium (4.9 to 7.2)	21	10.50
	High (7.3 to 9.6)	10	05.00
	Very high (9.7 and above)	05	02.50
	(C) Economic characteristics		
6	**Land holding**		
	Marginal size (Up to 1.00 ha.)	49	24.50
	Small size (1.01 to 2.00 ha.)	63	31.50
	Medium size (2.01 to 3.00 ha.)	28	14.00
	Large size (3.01 to 4.00 ha)	31	15.50
	Very large size (Above 4.00 ha.)	29	14.50
7	**Area under ginger cultivation**		
	Marginal size (Up to 1.00 ha.)	196	98.00
	Small size (1.01 to 2.00 ha.)	04	02.00
	Medium size (2.01 to 3.00 ha.)	00	00.00
	Large size (3.01 to 4.00 ha)	00	00.00
	Very large size (Above 4.00 ha.)	00	00.00

Sr. No.	Characteristics	Number	Per cent
8	**Occupation**		
	Only farming	06	03.00
	Farming and animal husbandry	179	89.50
	Farming and labour	07	03.50
	Farming and business	04	02.00
	Farming and service	04	02.00
9	**Annual income**		
	Very low (up to ₹ 1,00,000)	65	32.50
	Low (₹ 1,00,001 to ₹ 2,00,000)	10	05.00
	Medium (₹ 2,00,001 to ₹ 3,00,000)	22	11.00
	High (₹ 3,00,001 to ₹ 4,00,000)	39	19.50
	Very high (₹ 4,00,001 and above)	64	32.00

Characteristics of ginger growers

A look into Table 1 showed that slightly more than half (50.50 per cent) of the ginger growers were belonged to middle age category followed by 25.00 per cent and 24.50 per cent of them belonged to old and young age categories, respectively. Slightly less than one third (30.00 per cent) of the ginger growers were educated up to secondary level of education. Slightly more than one fourth (26.00 per cent) of the ginger growers had low (6-10 years) experience in ginger cultivation followed by very high experience (21.50 per cent) in ginger cultivation. It is evident from the data in Table 1 that more than half (51.50 per cent) of ginger growers had nuclear type of family and nearly half (48.50 per cent) of them had joint type of family. Regarding social participation more than half (56.00 per cent) of the ginger growers had low level of social participation, while26.00 per cent of them had very low level of social participation. It is noticed that nearly one third (31.50 per cent) of the ginger growers had small size of land holding, followed by marginal size (24.50 per cent) and large size (15.50 per cent), respectively. Overwhelming majority (98.00 per cent) of the ginger growers had marginal size of land under ginger cultivation, whereas, very meager (2.00 per cent) of the ginger growers had small size of land under ginger cultivation. Overwhelming (89.50 per cent) of the ginger growers had engaged in farming and animal husbandry for their earning followed by 3.50 per cent in farming and labour and 3.00 per cent in only farming.

It can be seen from Table 1 that slightly less than one third (32.50 per cent) of the ginger growers had very low annual income (up to ₹ 1, 00,000), while 32.00 per cent, them had very high (above ₹ 4, 00,000) income.

Adoption of planting material related risk management practices as and when needed

Table 2: Distribution of the ginger growers according to their adoption of planting material related risk management practices

(n = 200)

Sr. No.	Risk management practices	Complete adoption	Partial adoption	No adoption
1	**Risk management related to planting material**			
	Used recommended variety as per location	27 (13.50)	156 (78.00)	17 (08.50)
	Purchased planting material from reliable sources	144 (72.00)	52 (26.00)	04 (02.00)
	Used fully matured rhizomes for planting (about 9-10 months old)	181 (90.50)	16 (08.00)	03 (01.50)
	Selected disease free planting material	200 (100.00)	00 (00.00)	00 (00.00)
	Selected the healthy rhizomes having 20-25gm weight with 2-3 eye buds	167 (83.50)	031 (15.50)	002 (01.00)
	Treated rhizomes by 5 g pseudomonas 10 days before sowing and dried in the shade	00 (00.00)	00 (00.00)	200 (100.00)
2	**Risk management related to shortage of planting material**			
	The quality planting material booked as per the requirement well in advance from the reliable source.	087 (43.50)	59 (29.50)	54 (27.00)
	10 % extra planting material booked for gap filling	12 (06.00)	41 (20.50)	147 (73.50)

(Figures in the parentheses indicate percentages)

A look into table 2 it is clear that cent per cent of the ginger growers had selected disease free planting material and overwhelming majority (90.50 per cent) of the ginger growers used fully matured rhizomes, used rhizomes with 2 to 3 eye buds (83.50 per cent) and purchased rhizomes from reliable sources (72.00 per cent). While, more than three fourth (78.00 per cent) of the ginger growers had partial adoption of cultivation of recommended variety as per location. No one had treated rhizomes by 5 g pseudomonas 10 days before sowing and dried in the shade.

It was observed that the risk management practices related to shortage of planting material, 43.50 per cent of the ginger growers booked planting material in advance from reliable sources but only 6.00 per cent of them booked the 10.00 per cent extra planting material for gap filling.

Adoption of soil-health related risk management practices as and when needed

Table 3: Distribution of respondents according to adoption of soil health related risk management practices

(n=200)

Sr. No.	Risk management practices	Complete adoption	Partial adoption	No adoption
1	**Fertilizers application**			
	Applied recommended basal dose of fertilizers at the time of planting	44 (22.00)	75 (37.50)	81 (40.50)
	Applied fertilizers at the different growth stages of plant as per recommendation	47 (23.50)	69 (34.50)	84 (42.00)
	Purchased sufficient quantity of fertilizers in advance	108 (54.00)	00 (00.00)	92 (46.00)
2	**Manures and bio fertilizers application**			
	Followed green manuring	13 (06.50)	49 (24.50)	138 (69.00)
	Applied well decomposed FYM	114 (57.00)	059 (29.50)	027 (13.50)
	Applied vermi-compost	006 (03.00)	23 (11.50)	171 (85.50)
	Applied bio-fertilizers	014 (07.00)	79 (39.50)	107 (53.50)

(Figures in the parentheses indicate percentages)

The results presented in Table 3 shows that risk management practices related to fertilizer application, 37.50 per cent of them had partial adoption of application of recommended basal dose at the time of planting followed by application of fertilizers at the different growth stages of plant as per recommendations (34.50 per cent). While, more than half (54.00 per cent) of the ginger growers had purchased sufficient quantity of fertilizers in advance. As far as adoption of manures and bio-fertilizers application was concerned, 57.00 per cent of ginger growers had complete adoption of application of well-decomposed FYM. However, 85.50 per cent of them had not applied vermi-compost followed by 69.00 per cent of the ginger growers not followed green manuring and 53.50 per cent of them were not applied bio-fertilizers.

CONCLUSION

Thus, it can be concluded that cultivation of ginger crop was preferred by middle to old age farmers. More than three fourth (78.00 per cent) of the ginger growers were educated from secondary to graduation level. Exactly three fifth (60.00 per cent) of the ginger growers had medium to very high level of experience in ginger cultivation. It means quite a large number of the ginger growers had very good experience in ginger cultivation. The result indicates considering high revenue in ginger cultivation. It was famous almost equally amongst the farmers living in joint as well as nuclear family type. It can be inferred that vast majority (82.00 per cent) of the ginger growers had very low to low level of social participation. Thus, it can be concluded that more than half (56.00 per cent) of the ginger growers were with marginal to small size of land holding. The result indicated that a cent per cent of the ginger growers had allocated marginal to small size of land for ginger cultivation. The results lead to conclude that overwhelming majority (89.50 per cent) of the ginger growers had farming and animal husbandry as their main occupation and more than three fifth (62.50 per cent) of the ginger growers had medium to very high level of annual income.

Regarding risk management practices related to

adoption of planting material, Overwhelming majority (90.50 per cent), of the ginger growers used fully matured rhizomes. While, more than three fourth (78.00 per cent) of the ginger growers had partial adoption of cultivation of recommended variety as per location. The risk management practices related to shortage of planting material, 43.50 per cent of the ginger growers booked planting material in advance from reliable sources but only 6.00 per cent of them booked the 10.00 per cent extra planting material for gap filling.

The data regarding risk management practices related to fertilizer application, 37.50 per cent of them had partial adoption of application of recommended basal dose at the time of planting followed by application of fertilizers at the different growth stages of plant as per recommendations (34.50 per cent). As far as adoption of manures and bio-fertilizers application was concerned, 57.00 per cent of ginger growers had complete adoption of application of well-decomposed FYM. However, 85.50 per cent of them had not applied vermi-compost followed by 69.00 per cent of the ginger growers not followed green manuring and 53.50 per cent of them were not applied bio-fertilizers.

The agencies such as the State Agricultural Universities, State Department of Agriculture, State Department of Horticulture, NGOs and private agencies should be alerted in supplying quality rhizomes, timely advices, recommended cultivation practices well in before commencement of the season.

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