

Constraints faced by Tribal farmers in Adoption of Export oriented Okra Production Expertise in Tapi District of South Gujarat

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ABSTRACT

The study was conducted in 20 villages of Tapi district of South Gujarat with the sample size of 300 okra growers. Results indicated that the okra growers in majority knew improved cultivation practices of okra and had adoption to the moderate extent as per their capacity and timely availability of the required information. The study highlights that there are various constraints which affect the process of adoption, however, few of them are most important one which affect the extent of adoption of recommended production technology of okra. The most importance constraints were weed control through 'herbicides is technically complex phenomenon', 'lack of knowledge about improved technologies of seed, weedicides and plant protection measures', 'absence of assured marketing at remunerative price and appropriate insurance policy facility', 'lack of operational skill in the plant protection equipments' and 'Frost, high wind velocity and low temperature affect the growth of crop and productivity', 'unavailability of inputs at the time of peak season' and 'lack of water policy decided by the government'. Moreover, it was evident that with the increase in knowledge and adoption there is decrease in number of constraints face by okra growers. The systematic and scientific information should be conveyed to the okra growers to conquer their constraints and also for sustainable, profit-making off-season okra cultivation in the district.

INTRODUCTION

Off season okra is grown in large cluster as well as in sprinkled manner under specific agro-climatic, soil and input situations in all over Tapi district of South Gujarat to meet varied necessities of vegetables and associated requirements. Off-season okra cultivation is highly remunerative and gainful in said area. The okra cultivation in this region is practiced after harvest of early paddy varieties of kharif. A sizable area is covered under off-season okra cultivation in Tapi. Good market facilities for okra exporting are also created in the district. One main and five sub centers for okra collection and further process of exporting is also created in Tapi. Vyara APMC and all of the five collection centers are also decorated full-fledged for okra collection and further process of exporting as well as selling in local and Indian markets. The offseason okra cultivation in this area is highly suited and giving better remuneration to the cultivars. This crop has changed the economic condition of the tribal farmers in the region.

Despite of great significance of these crops in the region, national and climate logical context, their poor productivity is still a continued concern. Several controllable and uncontrollable reasons can be cited for stagnation in poor productivity of this cash crop. Thus, in view to bridge the gap between realized and required production of this crop; extensive research efforts are required at various levels. Research results of great practical and scholarly significance in genetic improvement, crop husbandry, plant protection and quality components have been generated.

Okra, the major export oriented, cash crop and short duration high profitable and is recognized for its better prospects. It is therefore, the ultimate choice of marginal and sub-marginal farmers for realization of sustained production under the favourable and temperate climate of the region. Okra is grown in about 2000 ha area during Rabi season is confined to Tapi district only. Total turnover of tribal area of okra growers was 40.00 crores. Okra is an important rabi vegetable crop of Tapi district as a whole. This occupies about 40% of the area

in Rabi. However, the productivity in Tapi is not as per expectation of the okra growers. Many constraints are responsible for low adoption of the technologies. Keeping this in view, a study was undertaken to find out the major constraints in adoption of improved package of practices of okra crop in arid area.

METHODOLOGY

Gujarat state comprises eight agro-climatic zones. Out of these eight agro-climatic zones, the Zone-I and II was selected purposely for the study. As these zones are comprised of four districts, out of these, Tapi district was selected randomly. From the selected district 40 per cent areas were selected randomly. Three blocks were selected out of seven blocks of the Tapi. Two villages were randomly selected from each gram panchayat. A list of all the farmers who were growing okra crop since last 5 years was prepared for each selected village. From the list of farmers so prepared 40 per cent respondents were selected randomly. Selected a total sample of 300 respondents for the study purpose. Total village selected were 30 and from each of the villages 10 respondents were selected randomly and hence, total respondents were 300. The frequency. Percentage and ranking were employed to analyze the data.

FINDINGS

Extent of knowledge of okra growers

The data regarding knowledge of okra growers about recommended cultivation practices of okra depicted in Table - 1 revealed that more than two-third of okra growers possessed complete knowledge about recommended practices like Use of improved seed, Seed rate, Sowing time and Irrigation management. Whereas, majority of the okra growers had partial to complete knowledge regarding Field preparation and soil testing, Spacing and method of sowing, Weed Management, Plant protection measures, Picking, storage and PHT and Crop rotation. However, the okra growers possessed no or say zero level of knowledge regarding Application of culture (24.66%), Nutrient management (20.00%), Seed treatment (16.66%), Plant protection measures (15.00%), Crop rotation (13.00%) and Picking, storage and PHT (10.00%). The composite knowledge about recommended cultivation practices of okra was observed to the extent of medium level in case (69.30 per cent) of okra growers. Quite a few (14.24%) of them were found to possess enough knowledge about recommended production technology of okra. The findings were in accordance with findings of Shinde *et al.*, (2000) and Chauhan and Pandya (2012).

Table 1: Knowledge of okra growers about recommended package of practices of okra

SR. No.	Name of practices	Knowledge (n = 300)		
		Complete	Partial	No knowledge
1.	Field preparation and soil testing	172 (57.33)	118 (39.33)	11(3.34)
2.	Use of improved seed	204 (68.00)	90 (30.00)	6 (2.00)
3.	Seed rate	235 (78.34)	45 (15.00)	20 (6.66)
4.	Sowing time	264 (88.00)	21 (7.00)	15 (5.00)
5.	Spacing and method of sowing	100 (33.55)	172 (57.33)	28 (9.33)
6.	Seed treatment	61 (20.34)	189 (63.00)	50 (16.66)
7.	Application of culture	51 (17.00)	175 (58.33)	74 (24.66)
8.	Nutrient management	120 (40.00)	120 (40.00)	60 (20.00)
9.	Irrigation management	204 (68.00)	88(29.33)	8(2.66)
10.	Weed Management	166 (55.33)	108 (36.00)	26 (8.66)
11.	Plant protection measures	165 (55.00)	90 (30.00)	45 (15.00)
12.	Picking, storage and PHT measures	175 (58.33)	95 (31.66)	30(10.00)
13.	Crop rotation	155 (51.66)	103 (34.33)	45(15.00)

(Figures in parenthesis indicate percentage)

(1) Extent of adoption

A critical look at the data presented in Table - 2 clearly reveals that more than 50 per cent of the okra growers adopted completely the recommended practices like, sowing time, use of improved seed, irrigation management, picking, storage and PHT measures, harvesting and storage measures and crop rotation. Moreover, the practices like Seed treatment, weed management, plant protection measures, field preparation and soil testing as well as spacing and method of sowing is adopted partially by okra growers. Application of culture, spacing and method of sowing, nutrient management, picking, storage and PHT measures and plant protection measures were adopted not all by the okra growers. It indicates that those practices should be educated to the okra growers by different trainings, demonstrations and other extension methods to diminish the cost of cultivation and also to augment the yield and profit. From the findings, it is worthy to note that the low cost and no cost practices were adopted to the fullest extent and the practices involving monetary inputs were partially adopted by the okra growers due to lack of timely and adoptable assistance to them. Niraj Patel and Dr. N.M. Chauhan reported the same.

An overall adoption indicated that 38.35 per cent of okra growers completely adopted the recommended cultivation practices followed by 37.77 per cent of the okra growers had partially adopted the recommended cultivation practices and 25.88 per cent of the okra growers did not adopt the recommended package of practices in the region. The results of the present study are in line with the Chaudhary (1999) and Tandel *et al* (2013). reported that in general improved practices of okra was adopted by majority of the farmers to a higher extent. Vishvajeet and Chauhan (2015) also reported the same results.

Table 2: Extent of adoption of recommended package of practices of okra by the okra growers

Sr. No.	Name of practices	Adoption (n = 300)		
		Complete	Partial	No adoption
1.	Field preparation and soil testing	160 (53.33)	120 (40.00)	20 (6.67)
2.	Use of improved seed	190 (63.33)	60 (20.00)	50 (16.67)
3.	Seed rate	140 (46.66)	100 (33.34)	60 (20.00)
4.	Sowing time	201 (67.00)	80 (26.67)	19 (6.33)
5.	Spacing and method of sowing	42 (14.00)	120 (40.00)	138 (46.00)
6.	Seed treatment	30 (10.00)	202 (67.33)	68 (22.67)
7.	Application of culture	20 (6.67)	82 (27.33)	198 (66.00)
8.	Nutrient management	80 (25.63)	94 (31.32)	126 (43.05)
9.	Irrigation management	175 (58.33)	105 (35.00)	20 (6.67)
10.	Weed Management	70 (23.34)	170 (56.66)	60 (20.00)
11.	Plant protection measures	53 (17.64)	132 (44.00)	115 (38.33)
12.	Picking, storage and PHT measures	173 (57.66)	55 (18.33)	72 (24.00)
13.	Crop rotation	165 (55.00)	75 (25.00)	60 (20.00)

(Figures in parenthesis indicate percentage)

(2) Constraints encountered in adoption of recommended okra technology

The constraints encountered by almost all the respondents in the adoption of recommended cultivation practices of okra under dry land conditions they were facing difficulty in adhering to the recommended time of sowing in absence of rainfall, high cost of fertilizers and plant protection chemicals which imposed restrictions on their use (Table 3).

Table 3: Major constraints perceived by the farmers in adoption of recommended okra production technology

Sr. No.	Major Constraints	No. of respondents	Okra	
			Percentage	Rank
1.	Unavailability of inputs at the time of peak season	236	77.85	VI
2.	Lack of knowledge about improved technologies of seed, weedicides and plant protection measures	272	89.24	II
3.	Impurity of seed and chemicals	198	65.82	XVI
4.	Uncertainty in supply of canal water	224	74.05	VIII
5.	Line sowing is costly operation and time consuming	207	68.67	XIV
6.	Improved farm implements are costly	216	71.52	XI
7.	Inputs are costly	223	73.73	IX
8.	Fertilizers create problems in the soil	187	62.34	XVIII
9.	Weed control through herbicides is technically complex phenomenon	283	92.72	I
10.	Lack of water policy decided by the Government	231	76.27	VII
11.	High charges for electricity and irregular supply	182	60.76	XIX
12.	Lack of operational skill in the plant protection equipments	263	86.39	IV
13.	Lack of availability of quality seed	200	66.46	XV
14.	Lack of motivation from training institutions	210	69.62	XIII
15.	Low yield potential of prevailing varieties	136	46.20	XXII
16.	Lack of appropriate agronomic practices	145	49.05	XXI
17.	Frost, high wind velocity and low temperature affect the growth of crop and productivity	262	86.08	V
18.	Lack of cooperative marketing system	221	73.10	X
19.	Absence of assured marketing at remunerative price and insurance policy facility	271	88.92	III
20.	Labour charges are costly	155	52.21	XX
21.	Fear of price fluctuation in okra market price	212	70.25	XII
22.	Poor condition and low education of farmers	193	64.24	XVII

The data in Table 3 reveals that 'Weed control through herbicides is technically complex phenomenon' was the most important constraint perceived by 92.72 per cent respondents. Hence, it was ranked first. The second, third, fourth, fifth and sixth ranks were assigned to the constraints 'Lack of knowledge about improved technologies of seed, weedicides and plant protection measures', 'absence of assured marketing at remunerative price and insurance policy facility', 'Lack of operational skill in the plant protection equipments', 'Frost, high wind velocity and low temperature affect the growth of crop and productivity', 'unavailability of inputs at the time of peak season', with 89.24, 88.92, 86.39, 86.08 and 77.85 per cent respondents, respectively. Whereas constraints like, 'lack of water policy by the Government', 'uncertainty supply of canal water', 'inputs are costly', 'lack of cooperative marketing system', 'costly improved farm implements', 'Fear of price fluctuation in okra market price', 'lack of motivation from training institutions', were awarded seventh, eighth, ninth, tenth, eleventh, twelfth and thirteenth with 76.27, 74.05, 73.73, 73.10, 71.52, 70.25 and 69.62 per cent farmers,

respectively. Other important constraints were also perceived by the okra growers i.e. 'line sowing is costly operation and time consuming', 'lack of availability of quality seed', 'impurity of seed and chemicals', 'poor condition of farmers', 'fertilizers create problems in the soil', 'high charges for electricity and irregular supply', 'labour charges are costly' and 'lack of appropriate agronomical practices' were accorded rank fourteenth, fifteenth, sixteenth, seventeenth, eighteenth, nineteenth, twenty and twenty one with 68.67, 66.46, 65.82, 64.24, 62.34, 60.76, 52.21 and 49.05 per cent respondents respectively. The last rank was accorded to constraint 'low yield potential of prevalent varieties' with 46.20 per cent. Patel and Dr. N.M. Chauhan (2015) also reported the same. Among the major constraints in adoption of recommended production technology of okra cultivation 'Weed control through herbicides is technically complex phenomenon' and 'Lack of knowledge about improved technologies of seed, Weedicides and plant protection measures were the most perceived constraints. This might be due to the fact that most of recommended herbicides for okra cultivation are pre-emergence and pre-planting through this way application of herbicide is complex method, which might have long residual and phytotoxic effect on succeeding crops. Low yield potential of prevalent varieties as the least perceived constraint. This might be because, that most of the farmers were convinced with the performance of varieties available in the market. The findings are in accordance with the findings of Chaturvedi, (2000), Singh and Waris (2002), Shinde *et al.* (2003), Khan and Chauhan (2005), Agrawal (2008) and Bankar (2008).

CONCLUSION

It can be concluded that the okra growers in majority knew improved cultivation practices of okra and adopted to a moderate extent. Moreover, it was evident that with the increase in knowledge and adoption there is a decrease in number of constraints faced by okra growers. This tends to imply that more educational efforts are therefore, required to be undertaken by extension agency by way of organizing training and demonstrations for improvement of knowledge and increased adoption.

It can be further concluded that the constraints which were perceived most by the farmers in adoption of recommended production technology of okra cultivation i.e. weed control through herbicide, is technically complex phenomenon (92.72 per cent) constraint followed by lack of knowledge about improved technologies of seed, weedicides and plant protection measures (89.24 per cent), absence of assured marketing of remunerative price and insurance policy facility (86.39 per cent), lack of operational skill in the plant protection equipments (86.39 per cent) and Frost, high wind velocity and low temperature affect the growth of crop and productivity (86.08 per cent), whereas, the farmer faced another problems in unavailability of inputs at the time of peak season (77.27 per cent), lack of water policy decided by the government (77.85 per cent), uncertainty supply of canal water (74.05 per cent) and inputs are costly (73.33 per cent), lack of cooperative marketing system (73.10 per cent) were main reason responsible for low adoption. The important constraints least perceived by the farmers were labour charges are costly (52.21 per cent), lack of appropriate agronomical practices (49.05 per cent) and low yield potential of prevalent varieties (46.20 per cent). These all should be solved by authority to motivate the farmers towards off-season cultivation and export of good quality okra to fetch higher net profit and change the socio-economic condition of the tribal farmers of the Tapi district.

REFERENCES

- Agarwal, J.K. (2008). "Impact of Major Crop Production Technologies Generated by Rajasthan Agricultural University for the Semi-arid Eastern Plain of Rajasthan". Ph.D. Thesis (Unpublished), Rajasthan Agricultural University, Bikaner, Campus-Jobner.
- Bankar, K.B. (2008). "Constraints and strategies in pulses production". *Agrobios Newsletters*, 7 (7) : 25.
- B.M. Tandel* , N.M. Chauhan** and G.R. Patel***(2013). Impact of kvk in upliftment of tribal dominated areas of Tapi district through export oriented okra cultivation.int. *Green Farming (An International Journal)*, Voi-3(6), 2013, PP: 659-560. ISSN: 0974-0775.
- Chauhan, N.M. and Pandya, C.D. (2012).Impact of training regarding scientific cultivation of Okra. *Green Farming (An International Journal)*, Voi-3(6), 2012, PP: 659-560. ISSN: 0974-0775.
- Chaturvedi, D (2000).Impact of Indira Gandhi Nahar parijojna (IGNP) in adoption of improved terchnology for cotton production in Bikaner District of Rajashthan". Ph. D. Thesis, MPUAT, Udaipur, Raj.

- Choudhary, M. (1999). "A study on knowledge and adoption of improved cultivation practices of mothbean in Bikaner district of Rajasthan". M.Sc. (Ag.) Thesis Rajasthan Agricultural University, Bikaner, Campus-Jobner.
- G.L. Kothari, S.L. Intodia and F.L. Sharma (2006). Extent of Knowledge and Adoption of Maize production Technology by the Farmers of Agro-climatic Zone IV Rajasthan. *Asian J. of Ext. Edu*, **25**:23-27
- J. Tulsiram and Ravi M. Sambrani (2006). A study on Adoption Pattern of Farmers in Different Drought Areas. *Asian J. of Ext. Edu*, **25**:28-31.
- K.D. Kokate and P.B. Kharde, (2006), Extension Strategies for increasing Sugarcane production. *Asian J. of Ext. Edu*, **25**:10-14.
- Khan, P.M. and Chauhan, J. (2005). "Adoption of pattern of farmers towards new farm technology". *Indian Research Journal of Extension Education*, **5** (1): 1-3.
- Shinde, B.B. Bhoite, H.S. and Sawant, G.K. (2003). "Constraints in adoption of recommended technologies of groundnut cultivation". *Journal of Maharashtra Agricultural Universities* **28** (1): 62-66.
- Singh, B. and Waris, A. (2002). "Farmers' knowledge and adoption of improved practices of til production in arid areas of Rajasthan". *Rajasthan Journal of Extension Education*, pp. 82-87.
- S.R. Meena and Anita Jhamtani (2005). Change in Cropping Pattern Subsequent to Farm Mechanization. *Indian J. of Ext. Edu*, **41**:31-36.

