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Constraints Faced by the Beneficiaries of Citrus Estates in Citrus Cultivation

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ABSTRACT

Citrus is a non-traditional crop in Punjab state, hence, it became evident to promote citrus crop and to give knowledge to the farmers about most up-to-date techniques of citrus planting, management, harvesting and marketing of this crop. Therefore, the Punjab Government through the State Department of Horticulture established five Citrus Estates in natural citrus growing area of the Punjab during 2007. The study to identify the constraints faced by the beneficiaries of citrus estates in citrus cultivation in Punjab sampled 200 beneficiaries, through stratified multistage random sampling design. The average operational land holding of all respondent beneficiaries was 10 acres. The technical constraints got first rank followed by storage & marketing constraints with average mean score 2.271 and 2.244. Under different five areas, susceptibility towards disease & insect-pest, unfavourable weather conditions, seasonal glut in market, lack of preservation industry in the area and lack of mechanization in citrus processing were the major constrains .

Keywords: Beneficiaries, Citrus, Citrus estates, Constraints, Preservation industry

INTRODUCTION

Citrus has becomes very popular among the farmers due to reasonable price and higher juice content (Anonymous, 2015a). In Punjab state 2.77 lakh hectares area is under horticultural crops with an annual production of 51.74 lakh tones whereas total area under fruit cultivation is 76.597 thousand hectares, with 15.41 lakh tones production (Anonymous, 2015b). Since, citrus is a non-traditional crop in Punjab state, hence, it became evident to promote this crop and to give knowledge to the farmers about most up-to-date techniques of citrus planting, management, harvesting and marketing. Therefore, Punjab Government through the State Department of Horticulture established five Citrus Estates in natural citrus growing areas of the state during 2007. All the infrastructural services are being provided under single roof in order to achieve high quality and productivity. Five Citrus Estates established are Abohar (Fazilka), Tahliwala Jattan (Fazilka), Badal (Shri Muktsar Sahib), Hoshiarpur and Bhunga (Hoshiarpur). Establishment of Citrus Estate is also part of the Government's new approach to shift the spotlight away from traditional soil and water depleting patterns and to promote non-conventional farm activities for huge scale citrus production in Punjab (Anonymous, 2015b). It has been found that several farmers are utilizing benefits from theses citrus estates. Thus, it becomes imperative to assess the impact on beneficiaries and to identify the constraints faced by the beneficiaries of citrus estates in citrus cultivation.

METHODOLOGY

This research investigation was carried out in five Citrus Estates of Punjab state. To select the area and

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respondent beneficiaries, a stratified multistage random sampling design was used. At first stage three districts i.e. Fazilka, Shri Muktsar Sahib and Hoshiarpur were selected purposively, at second stage, five Citrus Estates were selected from three selected districts (Abohar and Taliwala Jattan from Fazilka district, Badal from Shri Muktsar Sahib district and Hoshiarpur and Bhunga from Hoshiarpur district). At third stage lists of beneficiaries were obtained from five citrus estate societies. From these lists, 40 beneficiaries from each Citrus Estate were selected randomly to make a total of 200 beneficiaries. Data were collected through a personal interview technique by using pretested questionnaire and analysed by using frequency, percentage, mean score and average mean score.

RESULTS AND DISCUSSION

Socio-personal characteristics of beneficiaries

The detail regarding socio-personal characteristics of selected beneficiaries which include age, education, operational land holding (acres) has been tabulated in Table 1 and discussed. Age is an essential social variable as it affects the attitude and values of an individual to a great extent which regulates the status of the individual in the family and society. Data presented in Table 1 indicates that the age of respondent beneficiaries varied from 27-56 years. From the entire five Citrus Estates, maximum respondent beneficiaries *i.e.* 43.00 per cent belonged to 37-46 years' age group. Almost one third of respondent beneficiaries *i.e.* 32.5 per cent belonged to the age group of 47-56 years; whereas 24.5 per cent respondent beneficiaries were recorded within the age group of 27-36 years. The findings further indicate that the average age of all respondent beneficiaries was recorded 42.38 years. Education as an important characteristic predicts knowledge and adoption. The data shows that maximum 24.5 per cent of the respondent beneficiaries were educated up to graduation, followed by 21.0 per cent and 20.5 per cent respondent beneficiaries educated up to matric and middle. From the total respondent beneficiaries 15.5 per cent were educated up to Senior Secondary, whereas 11.5 per cent and 7.5 per cent were educated up to primary and post-graduation. The data further pertaining that the mean educational level of the entire respondent beneficiaries was recorded between matriculations to senior secondary.

Operational land holding is assumed as an important variable that influences adoption behaviour of the farmer. It is common knowledge that availability of farm implement and other needful material increases in line with the operational land holding. It is apparent from data that relatively higher proportion of the total respondent beneficiaries were falling under semi-medium (5 to 10 acres) operational land holding followed by 29.5 per cent

Table 1: Distribution of beneficiaries according to their socio-personal characteristics (n=200)

S.No.	Socio-personal characteristics	Category/ range	Abohar (%)	Talliwala Jattan (%)	Badal (%)	Bhunga (%)	Hoshiarpur (%)	Total (%)
1.	Age (years)	27-36	22.5	25.0	25.0	22.5	27.5	24.5
		37-46	45.0	40.0	47.5	40.0	42.5	43.0
		47-56	32.5	35.0	27.5	37.5	30.0	32.5
		Mean	*42.4*	*41.2*	*43.05*	*42.23*	*43.03*	*42.38*
2.	Education	Mean Education (No. of schooling years)	11.9	10.8	10.88	10.63	11.0	11.04
3.	Operational landholding (acres)	Marginal (< 2.5)	10.0	10.0	15.0	15.0	17.5	13.5
		Small (2.5-5.0)	25.0	30.0	27.5	32.5	32.5	29.5
		Semi-Medium (5-10)	27.5	27.5	35.0	32.5	30.0	30.5
		Medium (10-25)	20.0	17.5	12.5	15.0	12.5	15.5
		Large (> 25)	17.5	15.0	10.0	5.0	7.5	11.0
		Mean	*14.00*	*9.60*	*11.05*	*7.45*	*7.92*	*10.00*

respondent beneficiaries having small operational land holding. From the all respondent beneficiaries 15.5 per cent of the beneficiaries were falling under medium operational land holding, whereas 13.5 per cent and 11.0 per cent were having marginal and large operational land holding.

Constraints faced by the beneficiaries in citrus cultivation

The information regarding the constraints faced by the beneficiaries was studied in five subject areas *i.e.* technical, economics, storage and marketing, capacity building and general constraints. The information so collected has been presented in Table 2.

Ten important technical constraints were identified and ranked which acted as barrier in production of citrus crops. Disease sensitive crop was ranked as first constraints with a mean score of 2.63 followed by difficult to protect crop from adverse weather conditions (2.58). The other technical constraints faced by the citrus growers in descending order of importance were problems of intercropping & intercultural operations, poor quality ground water for irrigation, long vegetative period i.e. unproductive period, irregular water supply from the canal, higher mortality of plant during initial years and lack of technology know- how with the mean scores 2.56, 2.46, 2.41, 2.40, 2.35 and 1.98 respectively. The least important technical constraints perceived by the beneficiaries were lack of knowledge about production & processing machinery and unsuitable soil for citrus orchard with mean score of 1.94 and 1.40 respectively. The type of constraints were observed by Sharma (2002); Mohammad (2000); Poonia (2002); Das *et al.* (2014); Raina *et al.* (2017) in different settings.

Among economic constraints, the seasonal glut in the market ranked first with a mean score 2.54 followed by

Table 2: Distribution of the beneficiaries according to constraints faced by them in citrus production (n=200)

S.No.	Constraints	Most severe	Severe	Least severe	Mean score	Rank
Technical constraints						
a	Lack of technology know- how	74	47	79	1.98	VIII
b	Unsuitable soil for citrus orchard	21	37	142	1.40	X
c	Higher mortality of plant during initial years	107	55	38	2.35	VII
d	Long vegetative period *i.e.* unproductive period	116	49	35	2.41	V
e	Irregular water supply from the canal	119	41	40	2.40	VI
f	Poor quality ground water for irrigation	115	62	23	2.46	IV
g	Lack of knowledge about production & processing machinery	67	54	79	1.94	IX
h	Problems of intercropping & intercultural operations	127	58	15	2.56	III
i	Susceptible towards disease & insect-pest	138	49	13	2.63	I
j	Frost inferior	134	47	19	2.58	II
Economic constraints						
a	Lack of credit facility in the area	98	42	60	2.19	V
b	Lack of subsidies	75	51	74	2.01	VIII
c	Perishable nature of commodity resulted in economic loss	92	51	57	2.18	VI
d	Costly & unskilled labour	86	49	65	2.11	VII
e	High initial cost in establishing orchard	118	63	19	2.50	III
f	High cost of inputs (fencing, plant materials, pesticides, fertilizers etc.)	120	62	18	2.51	II
g	Non-existence of processing units in the area	107	56	37	2.35	IV
h	High cost of transport of fruits	65	54	81	1.92	X
i	Seasonal glut in the market	135	37	28	2.54	I
j	Low prices of the citrus produce	62	71	67	1.98	IX

Table 2 contd....

S.No.	Constraints	Most severe	Severe	Least severe	Mean score	Rank
Storage and marketing constraints						
a	High fluctuation in the market prices	120	41	39	2.41	II
b	Lack of proper market	81	61	58	2.12	VI
c	Un-popular cooperative marketing system	88	65	47	2.21	IV
d	Lack of preservation industry in the area	128	44	28	2.50	I
e	General unawareness about citrus by-products and their nutritional importance	102	57	41	2.31	III b
f	Lack of storage facility in the area	96	70	34	2.31	III a
g	Mal-practices by middlemen	64	64	72	1.96	VII
h	Prices of citrus by-products are low	74	78	48	2.13	V
Capacity Building						
a	Lack of relevant literature	62	48	90	1.86	V
b	Lack of need based training	54	68	78	1.88	IV
c	Lack of technical advice facility in need	37	55	108	1.65	VII
d	Lack of motivating agencies in the area	18	29	153	1.33	VIII
e	Inadequate knowledge about citrus production	48	61	91	1.79	VI
f	Inadequate knowledge about processing and marketing	67	74	59	2.04	II
g	Lack of mechanization in citrus production	62	82	56	2.03	III
h	Lack of mechanization in citrus processing	89	69	42	2.24	I
General constraints						
a	Small land holding	118	53	29	2.45	II
b	Undulated Land	52	36	112	1.70	VIII
c	Unfavorable weather conditions (frost, drought, erratic rainfall)	139	42	19	2.60	I
d	Chance of theft	38	56	106	1.66	IX
e	Threat from wild and stray animals	70	53	77	1.97	V
f	Non-cooperation of private & govt. agencies in the area	46	57	97	1.74	VII
g	Lack of reliable source of plant material	95	34	71	2.12	III
h	Low consumption tendency of citrus in local area	83	46	71	2.08	IV
i	No timely sale of produce	64	58	78	1.93	VI

high cost of inputs (fencing, plant materials, pesticides, fertilizers etc.) with a mean score of 2.51. The other economic constraints in descending order of importance were high initial cost in establishing orchard, non-existence of processing units in the area, lack of credit facility in the area, perishable nature of commodity resulted in economic loss, costly & unskilled labour and lack of subsidies with mean score of 2.50, 2.35, 2.19, 2.18, 2.11 and 2.01 respectively. The least important economic constraints perceived by the beneficiaries were low price of the citrus produce and high cost of transport of fruits with mean score of 1.98 and 1.92 respectively.

The findings are supported by the findings of Pandey (1993); Mohammad (2000); Kumar *et al.* (2010). Among storage and marketing constraints lack of preservation industry in the area ranked first with a mean score of 2.50 followed by high fluctuation in the market prices with a mean score of 2.41, lack of storage facility in the area and general unawareness about citrus by-products and their nutritional importance at rank third with a mean score of 2.31. The least important storage and marketing constraint perceived by the beneficiaries was mal-practices by middlemen with mean score of 1.96. These findings are in line with the findings of Mohammad and

Punjabi (1997); Poonia (2002). Constraints under the category of capacity building included lack of mechanization in citrus processing as first rank with a mean score of 2.24 followed by inadequate knowledge about processing and marketing at second rank with a mean score of 2.04. The rank order revealed that lack of motivating agencies in the area was considered least important in this category with a mean score of 1.33. Among general constraints, unfavourable weather conditions (frost, drought, erratic rainfall) was ranked as first constraints followed by small land holding. The other general constraints perceived by the citrus growers in descending order of importance were lack of reliable source of plant material, low consumption tendency of citrus in local area, threat from wild and stray animals, no timely sale of produce and general carelessness of private & govt. agencies in the area.

The data further indicated that the technical constraints ranked first with highest average mean score of 2.271 followed by storage and marketing constraints with an average mean score of 2.244 at second rank. The constraints related to economics were at rank three with an average mean score of 2.229 while general constraints were at rank four with an average mean score 1.977. The capacity building constraints got last rank with an average mean score of 1.891.

CONCLUSION

Emphasis on development of infrastructure for storage, marketing, value addition and processing of citrus crop is the need of the hour. Development of suitable storage structures like zero energy cooling chamber, cold store, pack houses, and processing units for citrus at local level can enhance shelf life of fruits as well as the profit of citrus growers. More training are required to educate beneficiaries more about the technical aspects such as nursery raising and propagation, application of balanced fertilizers and micronutrients, irrigation scheduling, use of plant growth regulators, plant protection measures, chemical control of weeds and methods for long time storage of citrus fruits.

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