

Socio- economic characteristics influencing productivity of *Mrugbahar* sweet orange in Maharashtra

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ABSTRACT

Attempt has been made to examine the socio-economic characteristics of *murugbahar* sweet orange grower and their effect on productivity of the crop. Investigation was carried out during the year 2007-08. Cross sectional data were collected from fifty sweet orange growers. The results revealed that age of owner was 40.56 years with family size of 8.42 persons and investment on commonly used assets was Rs.23683.70. They showed lower coefficient of variation as compared to other characteristics. Use of bullock pair, milch animal and education level showed higher marginal productivity in sweet orange production. The coefficient of multiple determination (R^2) was 0.547 which indicated 54.70 per cent of variation in the productivity.

INTRODUCTION

Sweet orange (*Citrus sinensis*) is one of the important fruit crops in India. It is highly polyembryonic species of Chinese origin. Sweet orange is fruit of excellence and is having exceptionally good nutritive value. Production technology of sweet orange is considered with use of fertilizer, irrigation, plant protection chemicals and human labour. On one side, these technical factors are important to increase the productivity of sweet orange crop. Similarly, on the other side socio-economic factors are very important in order to affect the productivity of crop. Socio-economic characters play vital role in production of sweet orange. In Nanded district of Maharashtra *Mrugabahar* sweet orange is grown on commercial scale. *Mrugabahar* is treatment of water stretch which is given in the months of April – May to sweet orange garden. Flowering can take place in the month of June-July. Fruit harvesting is done in the month of February-March. Yield per hectare is affected due to socio-economic factors of sweet orange growers. By keeping in view the above aspects, the present study has been undertaken to know socio-economic characters and managements of them in sweet orange production.

METHODOLOGY

Study was conducted in Nanded district

of Maharashtra whereas sweet orange cultivation is on large scale in the cropping pattern. The total sample consisted with 50 *Mrugbahar* sweet orange cultivators spread over ten villages of Nanded tehsil. From each of the villages, five *Mrugbahar* sweet orange gardens were selected. Cross sectional data were collected from the sampled sweet orange growers by personal interview method with the help of pre-tested schedule. Data pertained to the year 2007-08 in regard to socio-economic characteristics. Socio-economic characteristics of sweet orange growers were analyzed by application of tabular analysis as well as linear functional analysis.

The form of liner function was as follows.

$$Y = f(x_1, x_2, x_3, x_4, \dots, x_n)$$

$$Y = a + b_1 x_1 + b_2 x_2 + b_3 x_3 + \dots + b_n x_n$$

$$Y = a + b_1 x_1 + b_2 x_2 + b_3 x_3 + b_4 x_4 + b_5 x_5 + b_6 x_6 + b_7 x_7 + b_8 x_8$$

where, Y= Yield per hectare in quintals, a= Intercept of production function, bi = partial regression coefficients of the respective resource variable (i = 1,2,3,.....8), X_1 = Age in year, X_2 = Education level in five quantum scores, X_3 = Family size in persons, X_4 = Occupation level in three quantum scores, X_5 = Land holding in hectares, X_6 = Milch animal in number, X_7 = Capital investment on the commonly used assets in Rs., X_8 = Investment on irrigation structure in Rs.

Key words :

Sweet orange,
Mrugbahar,
 Productivity

Accepted :
 October, 2009

RESULTS AND DISCUSSION

The findings obtained from the present study are presented in Table 1 and 2.

Socio-economic status of Mrugbahar sweet orange grower:

Socio-economic characteristics of sweet orange grower with respect to *Mrugbahar* sweet orange garden were estimated and are presented Table 1. The results revealed that age of the owner was 40.56 years. It was observed that education level of owner was 2.54 scores. Thus, it implied that education standard was High School level in *Mrugbahar* sweet orange garden. It was clear that family size was 8.42 persons. Occupation level was 1.42 scores. It inferred that *Mrugbahar* sweet orange growers were in agro-industrial sector and they were not fully depending on agriculture. Land holding was 6.44 hectares with respect to *Mrugbahar* sweet orange grower. Bullock pair was 1.86 in number. Similarly; milch animal was 3.44 numbers in *Mrugbahar* sweet orange garden. It inferred that *Mrugbahar* sweet orange grower was giving more importance to livestock in sweet orange gardens. It is important to note that investment on commonly used assets was Rs.23683.70 while the investment on irrigation structure was Rs.224250.80. The results are in conformity with the results obtained by Kothekar (1980), Desai *et al.* (1994), Kadrekar (2001) and Raut(2006) in regard to socio-economic characteristics.

Variation in socio-economic characteristics:

Coefficients of variation with respect to socio-economic characteristics were also calculated and are presented in Table 1. The results revealed that age,

Table 1 : Socio-economic characteristics of *Mrugbahar* sweet orange grower (garden size 1.45 ha)

Sr. No.	Particulars	<i>Mrugbahar</i> sweet orange garden	
		Mean	CV%
1.	Age of sweet orange grower (year)	40.56	20.04
2.	Education level (score)	2.54	45.14
3.	Family size (persons)	8.42	27.78
4.	Occupation level (score)	1.42	40.47
5.	Land holding (ha)	6.44	60.08
6.	Bullock pair (No.)	1.86	37.64
7.	Milch animal (No.)	3.44	36.75
8.	Investment on the commonly used assets (Rs.)	23683.70	27.43
9.	Investment on irrigation structure (Rs.)	224225.80	69.63

investment and family size showed 20.04, 27.43 and 27.78 per cent of variation. It inferred that there was more consistency in these characteristics. On the contrary, the coefficient of variation was the highest as 69.63 per cent in the investment on irrigation structure followed by 60.08 per cent in land holding, 45.14 per cent in educational level and so on. It implied that there was higher fluctuation in these factors.

Effect of socio-economic characteristics on productivity of Mrugbahar sweet orange:

Effect of socio-economic characters on productivity of *Murgbahar* sweet orange was estimated and presented in Table 2. The results revealed that partial regression coefficient of bullock pair was 11.465 which was positive and highly significant at 1 per cent level. When one additional bullock pair was available in *Mrugbahar* sweet orange garden, it would lead to increase the productivity of *Mrugbahar* sweet orange by 11.465 quintals because regression coefficient can be marginal product in linear function. Similarly, partial regression coefficient of milch animal was 4.594 which was positive and highly significant at 1 per cent level. If sweet orange grower could increase one milch animal over its mean, it would lead to increase the productivity of sweet orange by 4.594 quintals. Partial regression coefficient of education level was also positive and significant (2.368) at 5 per cent of level. Education level considered in 5

Table 2 : Effect of socio-economic characteristics on productivity of *Mrugbahar* sweet orange

Sr. No.	Particulars	Regression coefficient	Standard error	't' value
1.	Age of sweet orange grower (year)	0.185	0.257	0.717
2.	Education level (score)	2.368	0.949	2.495*
3.	Family size (persons)	0.709	0.875	0.810
4.	Occupation level (score)	-3.814	3.627	1.052
5.	Land holding (ha)	-2.648	1.235	2.145*
6.	Bullock pair (No.)	11.465	3.000	3.822**
7.	Milch animal (No.)	4.594	1.444	3.181**
8.	Investment on commonly used assets and farm building (Rs.)	-0.020	0.015	1.333
9.	Investment on irrigation structure (Rs.)	0.005	0.003	1.667
	Intercept (a)	67.093		
	R ²	0.547		
	F-value	5.367**		
	n	50		

* and ** indicates significance of values of P=0.05 and 0.01, respectively

quantam score, in the form of illiterate, Primary, High School, Higher Secondary and College level. If one score of education is increased, it would lead to increase the productivity of sweet orange by 2.368 quintals. On the contrary partial regression coefficient of land holding was negative as -2.648 and significant at 5 per cent level. If sweet orange grower increased his land holding by one hectare, it would lead to reduce the production of sweet orange by 2.648 quintals. Partial regression coefficients of age of sweet orange grower, family size and investment on irrigation structure were found positive but non-significant. On the contrary, partial regression coefficients of occupation level and investment on commonly used assets were found negative but non-significant.

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