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EFFECT OF SOCIO-ECONOMIC CHARACTERISTICS ON KESAR MANGO PRODUCTIVITY IN MARATHAWADA REGION OF MAHARASHTRA

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ABSTRACT

Fruit crops cultivation gives better yield and more money as compared to field crops from the same piece of land. Some of the horticultural products fetch foreign exchange. Mango (*Mangifera indica* L.) known as 'king of fruits.', Mango fruit is utilized at all stages of its development both in its immature and mature state. Maharashtra state is an important mango growing state in India. The main strength of the Maharashtra state lies in the cultivation of the popular exportable varieties e.g. Alphonso, Banganpalli, Kesar, etc., with substantial production and significant share in mango export. Alphonso & Kesar are the major commercially varieties grown in Maharashtra. Multistage sampling design was used in selection of kesar mango growers. Cross sectional data were collected from the sampled kesar mango growers by personal interview method with the help of pre-tested schedule. The data pertained for the year 2010-11.Based on goodness of fit (R^2), linear regression function was used for estimation of relationship between socio-economic characteristics and productivity of kesar mango. The value of R^2 was 0.71 which indicated that 71 per cent of variation in kesar mango productivity was due to socio-economic factors together. It was observed that, partial regression coefficients with respect to land holding were positives and significant at 1 per cent level of significance. 'F'-value was significant (2.54).'F'-value was significant. It was clear that, each explanatory variable on its own was not very important but together they significantly explained part of variation in kesar mango productivity.

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INTRODUCTION

Nature has endowed our country with vast diversity of land, soil and agro-climatic conditionswhich enable to produce varied types of horticultural crops. Fruit crops cultivation gives better yield and more money as compared to field crops from the same piece of land. The farmer also would like to shift from field crops to high value horticulture crops. Some of the horticultural products fetch foreign exchange and they constitute a specialized form of farm business of a highly commercial nature. Mango (*Mangifera indica* L.) known as 'king of fruits' belongs to family Anacardiaceae, originated in South East Asia.It is the leading fruit crop of India.Mango is indigenous to India.It is as old as Indian civilization.Mango has been cultivated in India, since antiquity. India occupies a prominent place in the cultivation of mango. The mango is the pride of the garden the choicest fruit of Hindustan, other fruits content to eat when ripe, but the mango is good in all stages of growth. Mango fruit is utilized at all stages of its development both in its immature and mature state. Mango is grown almost in all the states of India. Maharashtra state is an important mango growing state in India. The main strength of the Maharashtra state lies in the cultivation of the popular exportable varieties e.g. Alphonso, Banganpalli, Kesar, etc., with substantial production and significant share in mango export. Alphonso & Kesar are the major commercially varieties grown in Maharashtra.

The important mango growing districts in Maharashtra state are Ratnagiri, Sindhudurg, Raigad, Ahmednagar, Nashik, Aurangabad, Jalana, Beed, Parbhani, Latur and Osmanabad. Among this Aurangabad, Beed, Latur, Ahmadnagar and Nashik districts are recognized as export zone for kesar variety of mango by government of Maharashtra.

MATERIALS AND METHODS

Scientific investigation in Agricultural economics need correct method of data collection, analytical technique, etc. to arrive at proper conclusions. Multistage sampling design was used in selection of region, zone, district, villages and kesar mango growers. In first stage, Marathwada region was selected purposively because in recent years considerable export of kesar mango from this region was observed. Insecond stage, Agriculture Export Zone of kesar mango was selected, that comes under Marathawada region of Maharashtra. In third stage, the districts which comes under Agriculture Export Zone of kesar mango of Marathawada region was selected. Aurangabad, Jalana, Beed, Parbhani, Laturand Osmanabad districts were selected. In fourth stage, a list of kesar mango growers whose orchards were registered for exports their mangoes was obtained from MSAMB (Maharashtra State Agriculture Marketing Board) of this AEZ.Finally, 60 kesar mango growers who export their produce was selected purposively from selected districts.

Table 1. Socio-economic characteristics of kesar mango growers

Sr. no.	Particulars	Mean
1	Age (years)	46.02
2	Education level (Primary/High school/College level)	2.08
3	Family size (No.)	4.98
4	Occupation level (Agriculture/Business/service)	1.52
5	Land holding (ha)	4.45
6	Area under kesar mango(ha)	0.97
7	Livestock in standard animal unit (No.)	4.05

Table 2. Effect of socio-economic characteristics on productivity of kesar mango orchard

Sl. No.	Particulars	Partial regression coefficient (bi)	Standard error (SE) of bi	't' value
1.	Age (years)	0.194	0.183	1.060
2.	Education level (Primary/High school/College level)	2.368	0.949	2.495*
3.	Family size (No.)	-1.151	0.966	-1.192
4.	Occupation level (Agriculture/industry/service)	-0.244	0.219	-0.111
5.	Land holding (ha)	0.657	0.217	3.035**
6.	Area under kesar mango (ha)	0.522	0.311	1.676
7.	Livestock in standard animal unit (No.)	0.353	0.153	2.312*
Intercept (a) = 9.83 R^2 = 0.71 'F'-value = 2.54* n = 60				

* Significant at 5 per cent level

** Significant at 1 per cent level

The survey method of economic investigation was adopted for the work of data collection.The data pertained for the year 2010-11.Cross sectional data were collected from the sampled kesar mango growers by personal interview method with the help of pre-tested schedule. The relationship between socio-economic characteristics and productivity was achieved by analytical technique.Based on goodness of fit (R^2), linear regression function was used for estimation of relationship between socio-economic characteristics and productivity of kesar mango.

Linear multiple regression function

$Y = f(X_1, X_2, X_3, \ldots\ldots, X_{n-1}, X_n)$

$Y = a + b_1X_1 + b_2X_2 + \ldots\ldots + b_nX_n + U$

$\hat{Y} = a + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + b_6X_6 + b_7X_7$

Where,

$\hat{Y}$ = Estimated productivity of kesar mango
a = Intercept of production function
bi = Marginal product with respect to variables (i=1,2,3,…7)
X_1 = Age of the farmer in year
X_2 = Education level in three quantum scores
X_3 = Family size in number of persons
X_4 = Occupation level in three quantum scores
X_5 = Land holding in ha.
X_6 = Area under kesar mango in ha
X_7 = Livestock in standard animal unit
U = Error term

RESULT AND DATA ANALYSIS

Socioeconomic status of Kesar mango growers: Socio-economic characteristics of kesar mango growers were calculated and are presented in Table 1. The results revealed that**,** age of kesar mango grower was 46.02 years on kesar mango farm. Regarding education, it was observed that, high school level of education with 2.08 scores. Size of family observed was 6.8 number on large farm. Occupation level of kesar mango grower was 1.52 scores. Holding size of kesar mango farm was 4.45 hectares with 81.36 per cent coefficient of variation. And the area under kesar mango orchard was 0.97 hectares. The livestock number was found high on kesar mango farm and mean value was 4.05 in number.

Effect of socio-economic characteristics on productivity of kesar mango: Effect of socio-economic characteristics on productivity of kesar mango on farm were calculated and are presented in Table2. The value of R^2 was 0.71 which indicated that 71 per cent of variation in kesar mango productivity was due to socio-economic factors together. 'F'-value was significant (2.54).'F'-value was significant. It was clear that, each explanatory variable on its own was not very important but together they significantly explained part of variation in kesar mango productivity. It was observed that, partial regression coefficients with respect to land holding were positives and significant at 1 per cent level of significance. It inferred that if 1 per cent increase in land holding, it would lead to increase kesar mango productivity by 0.657 per cent. Similarly, educational level and livestock number were positive and significant at 5 per cent level of significance. It inferred that, if 1 per cent increase in educational level and livestock number, it would lead to increase kesar mango productivity by 2.368 and 0.353 per cent respectively. On the contrary there was negative effect of family size and occupational level on kesar mango productivity. It was clear that, there was scope to increase land holding, educationalleveland livestock unit to increase the kesar mango productivity. These results are in accordance with those of Narayanmorthy (2000) regarding educational level.

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