International Research Journal of Agricultural Economics and Statistics
Volume 4 | Issue 2 | September, 2013 | 154-156

Research Paper

# Socio-economic characteristics and cropping pattern of custard apple grower in Maharashtra

Y.R. HARAL AND B.R. PAWAR

See end of the paper for authors' affiliations

Correspondence to :
**Y.R. HARAL**
Department of Agricultural Economics, College of Agriculture, LATUR (M.S.) INDIA
Email : yogeshpatil.haral@gmail.com

**ABSTRACT :** In all 60 custard apple growers were randomly selected from twelve villages of two tehsils of Aurangabad district for the year 2010-2011. Cross sectional data were collected from custard apple growers with the help of pretested schedule by personal interview method. Regression coefficients with respect to socio-economic characteristics were obtained through linear regression analysis. The mean values of socio-economic characteristics were also estimated in arithmetic form. The result revealed that educational level showed highly significant effect on custard apple productivity with regression coefficient of 4.54 with mean value of educational level was 2.36 scores. In next order, regression coefficient of land holding was also highly significant (1.59) while mean value of land holding was 3.11 hectares. Regression coefficient of milch animal was 3.66 while mean value of milch animal was 2.65 numbers. Age of custard apple grower, family size and investment on irrigation structure were found non-significant characteristics. Regarding cropping pattern, gross cropped area was 3.11 hectares. It was observed that proportionate share of cereal crops was the highest as 31.51 per cent followed by cash crops (24.43 %), fruit crop (17.04 %), pulse crops (13.51 %) and oilseed crops (13.51 %). The net sown area was 2.59 hectares and double cropped area was 0.52 hectares. Cropping intensity was found to be 120.08 per cent.

**KEY WORDS :** Custard apple, Social characteristics, Economic characteristics

***Paper History :***
**Received :** *12.10.2012;*
**Revised :** *16.07.2013;*
**Accepted :** *15.08.2013*

**HOW TO CITE THIS PAPER :** Haral, Y.R. and Pawar, B.R. (2013). Socio-economic characteristics and cropping pattern of custard apple grower in Maharashtra. *Internat. Res. J. agric. Eco. & Stat.*, **4** (2) : 154-156.

## INTRODUCTION

In Maharashtra, custard apple is grown on 52695 hectares. Proportionate area of custard apple is 4.93 per cent to the state. Aurangabad city is the centre place of the state. This district is famous for production of different types of fruits like fig, sweet orange, guava, sapota, mango and custard apple. Aurangabad is the wholesale market for fruits from which fruits are sent to other distance markets in the country.

In Aurangabad district there are three mountains namely Antur, Satonda and Ajanta. The district is located mainly in the Godavari basin and its some parts towards North West of Tapi river basin. The surface of district is generally down level towards South and East. The custard apple cultivation is existence from long ago in naturally condition. Now a days farmers planting custard apple on boundaries of field, hill site and waste lands. Market value of custard apple is increasing day by day because of its nutritious value known by consumers.

Now a days, custard apple is grown on large commercial scale. The management practices such as ploughing, harrowing, irrigation, plant protection and fencing are adopted properly. The production and quality of custard apple increase because of its proper management. Aurangabad city is the historical capital place and has heritage monuments of Ajanta, Ellora and Bibi ka maqbara. Hence, many tourist visits to the district. Therefore, demand for fruits is increasing. Cultivation of custard apple is useful to farmers and it is also helpful to create employment opportunity in rural area.

## MATERIALS AND METHODS

Multistage sampling design was used for selection of district, tehsils, villages and custard apple growers. In the first stage, Aurangabad district was purposely selected for the present study because availability of highest area under custard apple cultivation. In second stage, Khultabad and Soygaon tehsils were selected because of contribution of major area under custard apple fruit crop. In the third stage, from each

selected tehsils, six villages were selected on the basis of highest area under custard apple. Thus, these selected villages were from Khultabad tehsil namely, Abdimandi, Daultabad, Ellora, Kagzipura, Khultabad and Maliwada. Similarly, these selected villages from Soygaon were namely, Amkheda, Galwada, Jangla tanda, Murti, Palaskhed and Soygaon. In the last stage, from each selected village, five custard apple growers were selected randomly.

The cross sectional data were collected from 60 custard apple growers with the help of pre-tested schedule for the year 2010-2011. The objective like socio-economic characteristics of custard apple growers was achieved by application of tabular as well as linear function analysis.

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

$Y= a+b_1x_1+b_2x_2+\ldots\ldots\ldots\ldots+b_nx_n)$

where,

Y=Per hectare productivity of custard apple in quintals.

a= Intercept.

bi=Partial regression coefficient of the respective resource variable

(i= 1, 2, 3,……..,6)

$X_1$= Age of farmers in years

$X_2$= Educational level in scores

$X_3$=Family size in members

$X_4$=Land holding in hectares

$X_5$=Milch animal in numbers

$X_6$=Investment on irrigation structure rupees in lakh.

## RESULTS AND DATA ANALYSIS

Results with respect to socio-economic characteristics and cropping pattern were obtained and are presented as follows.

**Socio-economic characteristics of custard apple grower:**

Socio-economic characteristic were estimated with respect to their effect on productivity of custard apple and are presented in Table 1. The result revealed that regression co-efficient was obtained through linear regression analysis. Hence, the mean value of socio-economic characteristics were estimated in arithmetic form and it was observed that educational level showed highly significant effect on custard apple productivity with regression coefficient of 4.54. It implied that when one unit score of educational level was increased there would be increase in custard apple production by economic character because of its regression co-efficient and was also highly significant 4.54 quintals. The arithmetic mean of educational level was 2.36 scores which was estimated on the basis of three quantum scores like illiterate, (one score), upto matric (two score) and above matric (three score). In next order, land holding was important with 1.59 while land holding was 3.11 hectares. It inferred that when there was increase in land holding by one hectare, it would lead to increase the productivity of custard apple by 1.59 quintals. Milch animal was also most important economic characteristic which showed regression co-efficient of 3.66 while milch animal was 2.65 in numbers. It would concluded that when there was addition of one milch animal, it could lead to increase custard apple productivity by 3.66 quintals. Age of custard apple grower, family size and investment on irrigation structure were found non-significant factors.

Co-efficient of determination ($R^2$) was 0.62 it inferred that there was effect of all independent variables together on productivity of custard apple. Thus, that effect was 62 per cent. These results are in agreement with the earlier results obtained by Ramchandara (2006) and Jamkhandi (2009).

**Seasonwise cropping pattern of custard apple grower:**

In cropping pattern and crops were grouped into three seasons *Kharif, Rabi* and summer with their areas are presented in Table 2. The results revealed that, gross cropped area was 3.11 hectares. It was observed that in *Kharif*, area under cotton was highest as 18.00 per cent. While in *Rabi* season, the highest area was under wheat which was 6.43 per cent. In summer season, the highest area under groundnut was 1.29 per cent. Area under custard apple was 17.04 per cent. In next order maize, sugarcane, mung, urid, sunflower, safflower and chickpea were grown in the study area. The net sown area

**Table 1 : Socio-economic characteristics and their effect on productivity of custard apple**

| Sr. No. | Independent variable ( Socio-economic characteristics ) | Mean values | Regression coefficient (bi) OR marginal product (q) | Standard error (SE) | 't' value |
|---|---|---|---|---|---|
| 1. | Age (years) | 46.96 | -0.07 | 0.25 | -0.28 |
| 2. | Educational level (Three quantum score) | 2.36 | 4.54 | 1.68 | 2.70** |
| 3. | Family size (members) | 6.75 | 1.19 | 2.08 | 0.57 |
| 4. | Land holding (ha) | 3.11 | 1.59 | 0.47 | 3.38** |
| 5. | Milch animal (No.) | 2.65 | 3.66 | 1.34 | 2.73** |
| 6. | Investment on irrigation structure (Rs. in lakh) | 1.08 | -64.20 | 18.00 | -35.00** |

Intercept (a) ……. 66.96
F value …….....20.22
R2 ……0.62
Mean value of custard apple (Y) 63.32/ha
* and ** indicate significance of values at P=0.05 and 0.01, respectively

**Table 2 : Cropping pattern of custard apple grower**

| Sr. No. | Particulars | Area (ha) | Per cent |
|---|---|---|---|
| | ***Kharif*** | | |
| 1. | Custard apple | 0.53 | 17.04 |
| | Fruit crop | 0.53 | 17.04 |
| 2. | Cotton | 0.56 | 18.00 |
| 3. | Sugarcane | 0.20 | 6.43 |
| | Cash crops | 0.76 | 24.43 |
| 4. | K.Jowar | 0.08 | 2.57 |
| 5. | Maize | 0.52 | 16.72 |
| 6. | Bajra | 0.18 | 5.79 |
| | **Cereal crops** | 0.78 | 25.08 |
| 7. | Mung | 0.06 | 1.93 |
| 8. | Urid | 0.08 | 2.57 |
| 9. | Pigeonpea | 0.19 | 6.11 |
| | Pulse crops | 0.33 | 10.61 |
| 10. | Soybean | 0.19 | 6.11 |
| | Oilseed crop | 0.19 | 6.11 |
| | ***Rabi*** | | |
| 11. | Wheat | 0.20 | 6.43 |
| | Cereal crop | 0.20 | 6.43 |
| 12. | Chickpea | 0.09 | 2.90 |
| | Pulse crop | 0.09 | 2.90 |
| 13. | Sunflower | 0.07 | 2.25 |
| 14. | Safflower | 0.12 | 3.86 |
| | Oilseed crops | 0.19 | 6.11 |
| | ***Summer*** | | |
| 15. | Groundnut | 0.04 | 1.29 |
| | **Oilseed crop** | 0.04 | 1.29 |
| 16. | Gross cropped area | 3.11 | 100 |
| 17. | Net sown area | 2.59 | 83.28 |
| 18. | Double cropped area | 0.52 | 16.72 |
| 19. | Cropping intensity | - | 120.08 |

on farm was 2.59 hectares and doubled cropped area was 0.52 hectares. Cropping intensity was found to be 120.08 per cent.

The share of fruit crop was 17.04 per cent that was consisted with only custard apple. Share of cash crops was 24.43 per cent which was consisted with share of cotton and sugarcane in *Kharif* season. The share of cereal crops in *Kharif* season was 25.08 per cent in which *Kharif* jowar, maize and bajra were major cereal crops. which were grown in *Kharif*, *Rabi* and summer. Similarly, the pulses grown in *Kharif* were mung, urid and pigeonpea on 10.61 per cent of area. Similarly, share of oilseed crop was 6.11 per cent in *Kharif* sason. In *Rabi* season, proportionate area under cereal and pulse was 6.43 and 2.90 per cent, respectively. Share of oilseed crop was 6.11 per cent in *Rabi* season, summer oilseed crop was grown on 1.29 per cent area.

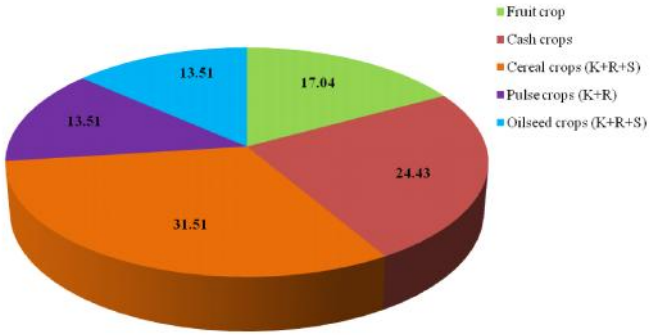


**Fig. 1 : In general, proportionate area under category of crops to gross cropped of 3.11 ha**

Proportionate of crop categories to gross cropped area was estimated and depicted in Fig.1. It was observed that gross cropped area was 3.11 hectares. In general, proportionate area under cereal crops was 31.51 per cent in both *Kharif* and *Rabi* seasons. In next order, cash crops were grown on 24.43 per cent of area in *Kharif* season only. Proportionate area under fruit crop was 17.04 per cent. Area under pulse crops was 13.51 per cent while the area under oilseed was also 13.51 per cent. Thus, it implied that custard apple growers were giving more importance to cereal and cash crops in study area.

Authors' affiliations:
**B.R. PAWAR,** Department of Agricultural Economics, College of Agriculture, LATUR (M.S.) INDIA

## LITERATURE CITED

Jamkhandi, B.R. (2009). Economics of production and marketing of kesar mango in Latur district. M.Sc (Ag.) Thesis, Marathwada Krishi Vidyapeeth, Parbhani, M.S. (INDIA).

Jha, K.K. (2008). Entrepreneurial characteristics and attitude of pineapple growers. World Academy of Science, Engineering and Technology. 265-269p.

Keerthi, H.R. (2008). Production and marketing of pineapple in Shimoga district. M.Sc. (Ag.) Thesis, University of Agricultural Sciences, Dharwad, KARNATAKA (INDIA).

Naveen, B.S. (2009). Economics of production and value addition to wine grapes in Bijapur district of Karnataka. M.Sc. (Ag.) Thesis, University of Agricultural Sciences, Dharwad, KARNATAKA (INDIA).

Ramachandra, V.A. (2006). Production and marketing of sapota in Northern Karnataka. M.Sc. (Ag.) Thesis, University of Agricultural Sciences, Dharwad, KARNATAKA (INDIA).