Plant Archives Vol. 24, Special Issue (GABELS), 2024 pp.756-761 e-ISSN:2581-6063 (online), ISSN:0972-5210

Plant Archives

Journal homepage: http://www.plantarchives.org
DOI Url : https://doi.org/10.51470/PLANTARCHIVES.2024.v24.SP-GABELS.116

SOCIO-ECONOMIC PROFILE OF MANGO GROWERS IN CENTRAL PLAIN ZONE OF UTTAR PRADESH

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ABSTRACT

It can be concluded from the present study that, among the socio-economic status of the mango growers in Central plain zone of Uttar Pradesh. The predominant respondents were located in the elder age category, particularly individuals beyond 50 years of age. The predominant respondents were classified as part of the Other Backward Class. The predominant educational attainment among respondents was between the 5th and 8th standard. The respondents were found to have between four and five persons in their families (average). The predominant number of responders indicated agriculture as their profession. The bulk of respondents reported possessing 10 to 40 years of expertise in mango cultivation.

***Keywords*:** Socio-economic profile, Mango Growers.

Introduction

The mango is India's premier fruit, sometimes referred to as the "pride of the garden," and may be enjoyed at all phases of its development. Mango is acknowledged as one of the most esteemed and widely accepted fruits globally, owing to its taste, flavor, appealing color, nutritional benefits, and aesthetic worth. It significantly contributes to human dietary balance by supplying around 64-66 calories per 100 grams of ripe fruit. It is an exceptional source of essential preventive elements, including vitamins A (4800 I.U.) and C. Mango fruit has 73.0-86.7 percent moisture, 11.6-24.3 percent carbohydrates, 0.3-1.0 percent protein, 0.1-0.8 percent fat, and 0.3-0.7 percent minerals per 100 grams of pulp. Seed kernels have 9.5 percent protein, 8-12 percent fat, 79.2 percent starch, 2 percent mineral content, and 2 percent fibre (Dock Worth, 1979; Amin and Hanif, 2002). Fresh fruits are utilized in the manufacture of chutney, amchur, pickles, and juice. The mature fruits are employed in the production of several items such as RTS (ready to serve), nectar, squash, panna syrup, mango leather, mango powder, toffee, jam, and jelly. The mango seed comprises a resilient outer layer encasing the kernel. The seed content of various mango types constitutes 9% to 23% of the fruit weight (Palaniswamy *et al*., 1974), whereas the kernel composition of the seed varies from 45.7% to 72.8% (Hemavathy *et al*., 1988). Maisuthisakul and Gordon (2009) demonstrated that mango seed kernels had significant antioxidant activity due to their elevated phenolic content. The mango seed kernel comprises stigmasterol and tocopherols. The antioxidant properties of the mango seed kernel are attributed to its elevated levels of polyphenols, sesquiterpenoids, and tocopherols. It is abundant in phytosterols and trace elements such as selenium, copper, and zinc (Schiber *et al*., 2003 & Nunez-Selles, 2005). The wood serves as lumber, while dried twigs

are utilized for religious purposes. The mango kernel has around 8-10% high-quality fat, suitable for saponification. The starch is utilized in the confectionery sector. Mango possesses therapeutic use.

Materials and Methods

Selection of the study area

Effective sampling is crucial for acquiring necessary information. The Central Plain Zone of Uttar Pradesh will be chosen due to its extensive area and significant mango production. For the research study in this region, a purposive and random sampling method will be employed to select districts, blocks, villages, and farmers. Among the 15 districts in the Central Plain Zone, Lucknow, Unnao, and Hardoi are the principal mango-producing districts with substantial mango cultivation. Two blocks with the highest area and production of mango have been selected from each district: Malihabad and Mal blocks from Lucknow, Safipur and Hasanganj blocks from Unnao, and Sandila and Bharawan blocks from Hardoi. Finally, four villages from each block will be selected for the research. In total, 240 farmers will be chosen from the three districts, comprising 10 farmers from each village, 40 from each block, and 80 from each district.

Weighted Average

Weighted average is an average in which each quantity to be averaged is assigned a weight. These weightings determine the relative importance of each quantity on average. Weightings are the equivalent of having that many like items with the same value involved in the average. For instance, let x be the observations and w be the weights of the observations, the formula of the weighted average is given below

$$\bar{x} = \frac{\sum_{i=1} w_i x_i}{\sum_{i=1}^{x} w_i}$$

Or in simple terms, we can write the formula as below:

Weighted Average = Sum of Weighted Terms/ Number of Weighted Terms

To find the weighted term, multiply each term by its weighting factor, which is the number of times each term occurs.

Result and Discussion

Age composition of mango growers

The sample farmers were classified into three categories, based on the age viz., young age (13 to 35), middle age (35 to 50), and old age (above 50). The details are furnished in Table-1

Table 1: Age Wise Distribution of mango producer

S. No	Age (years)	Number	Percentage
1.	Young (18 to 35)	38	15.83
2.	Middle (35 to 50)	83	34.58
3.	Old (above 50)	119	49.59
	Total	**240**	**100.00**

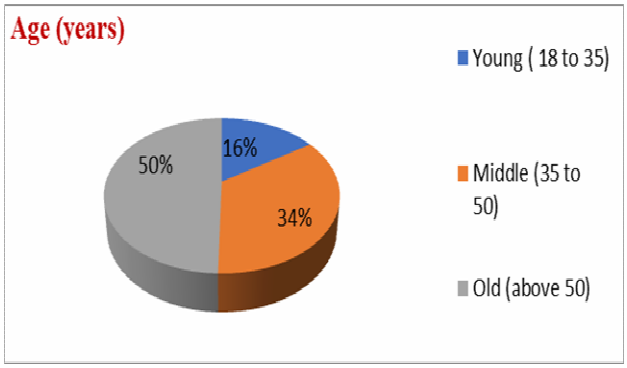


Fig. 1: Age composition

The age group of the respondents has a keen relationship with their experience and performance of economic activities in the mango production. Usually the young, middle and the aged farmers are engaged in mango production. From the Table-1, it could be concluded that most of the majority of the farmers who are engaged in mango production attained the age above 50 years (49.59 %) followed by middle age group (34.58 %), young (15.83 %), it is expected that they would have rich experience in mango cultivation. Singh *et al.* (2019) conducted the similar study in Haryana and revealed that majority of the farmers were middle aged group who generally possesses the risk-taking attitude. And also, it was found that old age farmers had high contractual arrangements in mango value chain.

Educational Status

The educational level of the farmers is expected to play a significant role on the use of inputs, adoption of new technologies and post production management practices. Therefore, the details of the same were examined and results are presented in the Table-2

Table 2: Educational Status

S. No	Educational Level	Number	Percentage
1.	Illiterate	12	5.00
2.	Primary (0-5 standard)	45	18.75
3.	Middle (Up to 5-8 standard)	70	29.17
4.	Secondary (Up to 10 standards)	47	19.58
5.	Higher secondary (Up to 12 standard)	52	21.67
6.	College/varsity education	14	5.83
	Total	**240**	**100.00**

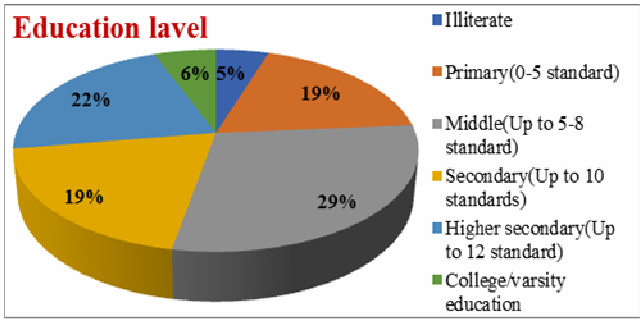


Fig. 2: Educational Level

Education is important factor to the improvement of agricultural productivity, resources utilization and rural economy. The level education is a basic for the development of an individual, society and the nation as a whole (Choudhary *et al*., 2018). The education status ofmango growers has been classified into six different categories *i.e.* illiterate, primary, middle, secondary, higher secondary and college/varsity education (Table-2). A perusal of the table indicates that at overall level most of the mango growers were educated (95.00 per cent).

In the study area, majority of the farmers had middle (Upto 5-8 standard) about 29.17 %, followed by Higher secondary (Upto 12 standard) about 21.67%, Secondary (Upto10 standards) about 19.58%, Primary (0-5standard) about 18.75% and College/ varsity education about 5.83% level. Only 5% of the respondents were reported to be illiterate. The level of education was found to be higher among the mango growers. Hence, any intervention in the production and post production activities would have positive impact. The similar study was also conducted by Kumar *et al.* (2018) in Western Uttar Pradesh revealed that the maximum number of the respondents (47.50 per cent) were having the educational status upto high school, followed by respondents were educational status upto the junior high school, primary school, intermediate, graduation, post graduate and above.

Family Size

The size of the family has important implications with respect to income realization of the sample households. The information on family size is presented in Table 3.

Table 3: Family Size

S. No	Family size	Number	Percentage
1	Small (less than 3 person)	49	20.41
2	Medium (4-5 person)	103	42.92
3	Large (more than 5 person)	88	36.67
Total		240	100.00

From the Table-3, it could be observed that about 42.92 per cent belonged to medium family size with four to five persons followed by 36.67 per cent belonged to large family with a family size of more than five persons and 20.41 per cent with a family size of less than three persons. It is clear that majority of the households had a family size of more than four.

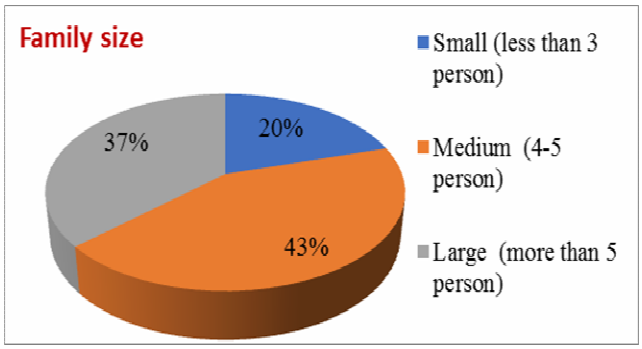


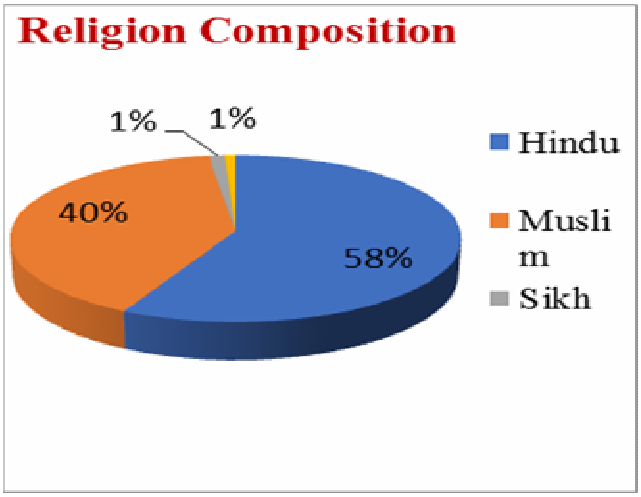
Fig. 3: Family Size

Religion and caste wise distribution of mango growers

From Table-4, out of the 240 respondents, more than half of the farmers (57.50%) were belonged to the Hindu religions, 40.42% of the sample farmers were Muslims, the Sikh and Christians who are engaged in mango production have formed only 2.08 %. The implication is that a very large number of the mango cultivators of the study area are belonged to the Hindu religion. The majority of the mango growers about more than one-half (63.33%) belonged to other backward classes (OBC), followed by schedule caste (20.42%) and the general category constituted about 16.25 per cent. The similar findings were also reported by Shakuntala and Chaman, (2000) and Kumar *et al.* (2018). They reported that the out of the total sample size, maximum 52.50 percent respondents have been belonged to other backward class.

Table 4 : Religion and caste wise distribution of mango growers

A.	Religious composition (Number)	Number	Percentage
a.	Hindu	138	57.50
b.	Muslim	97	40.42
c.	Sikh	3	1.25
d.	Christian	2	0.83
	Total	240	100.00
B.	**Caste composition (Social group)**		
a.	General	39	16.25
b.	Other Backward Classes	152	63.33
c.	Schedule Caste	49	20.42
d.	Schedule Tribes	0	0.00
	Total	**240**	**100.00**



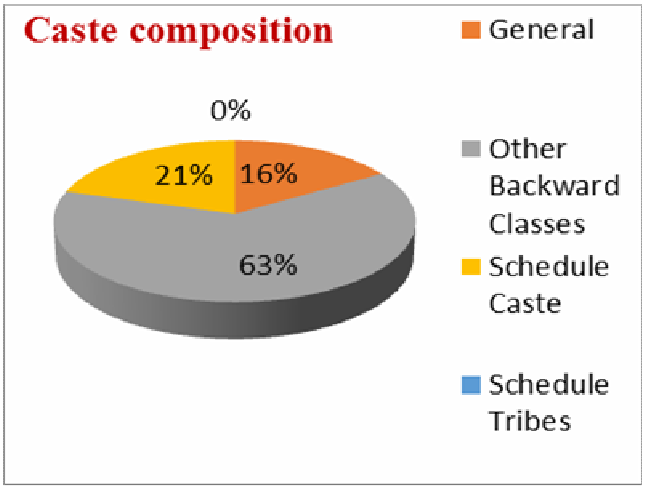


Fig.4: Religion and Caste Composition

Size of the Land Holdings

Size of land holding of farmers in general would influence the cropping pattern, cost of cultivation, buying behavior of the farmers with respect to agricultural inputs etc. Hence the details of size of holding of the farmers were analyzed and the results are presented in Table 5

Table 5 : Size of the Land Holdings of Sample Farmers

S. No	Size of Land Holding (in ha)	Number	Percentage
1.	Marginal	93	38.75
2.	Small	65	27.08
3.	Medium	49	20.42
4.	Large	33	13.75
Total		**240**	**100.00**

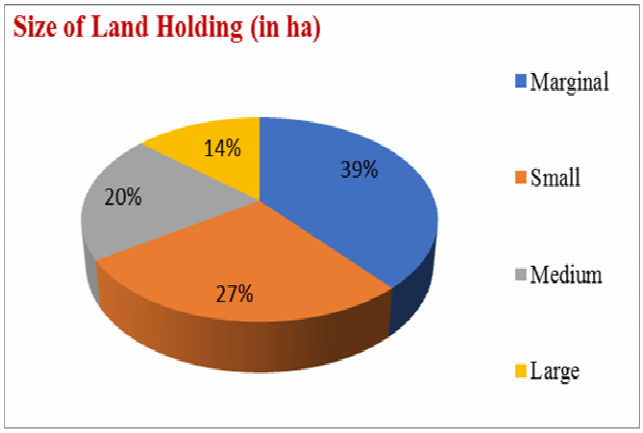


Fig. 5: Size of the Land Holdings of Sample Farmers

It could be observed from the Table-5 that among the sample farmers 38.75 per cent belonged to marginal farmers followed by 27.08 per cent represented by small farmers and only about 20.42 per cent were represented by medium and 13.75 percent represent the large farmers. It is obvious that majority of the sample farmers were under the categories of marginal and small and their production capacity was also low. Hence, they could be motivated to join together and market their products directly to exporter or organized retail chain or to consumers to gain more from consumer's payment.

Occupational Status

The farmers were also classified into five groups based on their occupation i.e., agriculture alone, agriculture and allied activities, agriculture and private occupations, agriculture and government employment and those with agriculture and business.

The details of the occupational status of the sample farmers are presented in Table-6.

Table 6: Occupational Status

S.No	Occupation Status	Number	Percentage
1.	Agriculture	125	52.08
2.	Agriculture +Allied Activities	60	25.00
3.	Agriculture + Private Occupations	40	16.67
4.	Agriculture + Government Employment	3	1.25
5.	Agriculture + Own Business	12	5.00
Total		240	100.00

Note: Allied Activities include livestock rearing and management

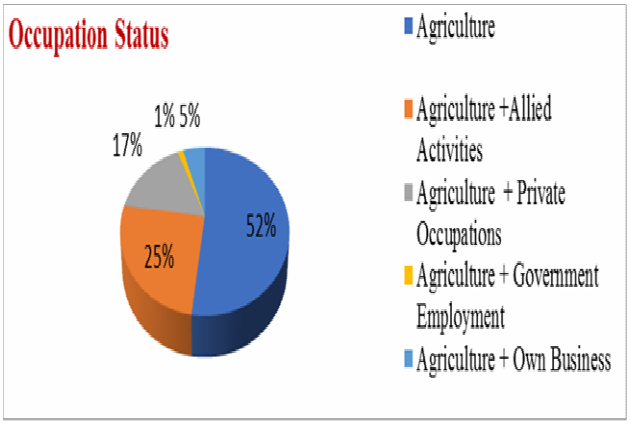


Fig. 6: Occupation Status

It could be seen in the Table-6 that majority of the farmers (about 52.00 per cent) had agriculture as their only occupation followed by agriculture and allied activities (about 25.00 percent), agriculture + private occupations (about 16.67 per cent), Agriculture + Own Business (about 5.00 per cent) and Agriculture + Government Employment (about 1.25 per cent). Since agriculture depends on the vagarious of monsoon, many farmers, now a days diversified their activities to supplement farm income.

Income

Based on the income levels of the sample farmers they were classified into three categories viz., less than 1,50,000 (low), 1,50,000 - 3,00,000 (middle) and above 3,00,000 (high) income groups. The details of the distribution of the mango farmers based on income are presented in the Table 7.

Table 7: Annual Income Levels of Heads of Sample Farm Households

S. No	Income Group (Rs)	Number	Percentage
1.	Low Income	67	27.92
2.	Middle Income	123	51.25
3.	High Income	50	20.83
	Total	240	100.00

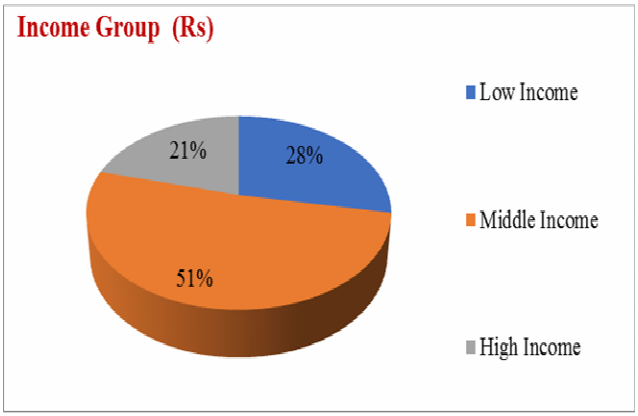


Fig. 7: Annual Income Levels

The annual family income of the responder is directly correlated with the standard of living and adoption of the level of production technology. The average annual income received by mango growers from all sources could be observed from Table 7. It could be observed from Table-7 that majority (51.25 per cent) of the farm families belonged to the middle-income farmers, followed by (27.92 per cent) low-income category and high Income (20.83percent). It could be inferred that majority of mango farmers were low- and middle-income farmers.

Experience

The sample farmers were categorized into different groups based on their farming experience and the results are reported in Table-8 Mango farming experience among the sample farmers ranged from less than 10 years to more than 40 years.

Table 8 : Experience

S. No	Years of Experience	Number	Percentage
1.	Low (<10)	25	10.42
2.	Medium (10 to 40)	143	59.58
3.	High (>40)	72	30.00
	Total	240	100.00

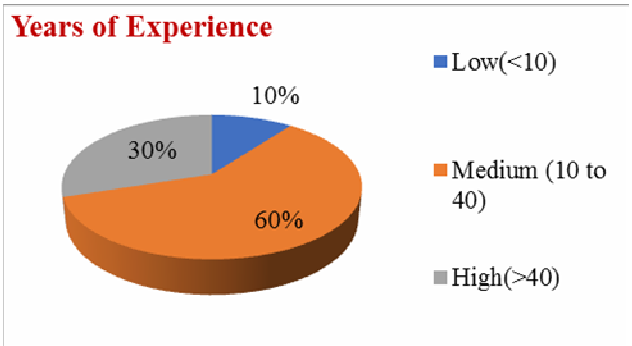


Fig. 8: Years of Experience

The Table-8. also reveals that majority of the farmers (59.48 per cent) were having the mango farming experience between 10 to 40 years, 30.00 per cent farmers were having the mango farming experience more than 40 years, while 10.42 per cent farmers were having less than 10 years' experience of mango farming. Hence, it could be concluded that the sample farmers had rich experience on the various aspects of production and marketing technologies of mango.

Family member engaged in mango production

The cultivation practices of both the hired laborers as well as the family members are more vital in mango production. The number of family members is an important factor for contributing towards greater

production and productivity in the field of agriculture as also in mango cultivation. The Table-9 has shown details about the number of the family members who have engaged in the mango production. It is understood that 5.42%, of the sample farmers i.e. 13 families were involved a maximum number of only 2 members from their families. The involvement in the production of mango by 3 to 4 members of their family has constituted nearly 45.00%, 83 5 to 6 members working in their field were found to constitute nearly (35.83 %) and more than six members of a family have been engaged in mango cultivation constitute only 13.75, of the families.

Table 9 : Family member engaged in mango production

S. No	Family Member engaged	Number	Percentage
1.	Upto 2 members	13	5.42
2.	3 to 4 members	108	45.00
3.	5 to 6 members	86	35.83
4.	Above 6 members	33	13.75
Total		240	100.00

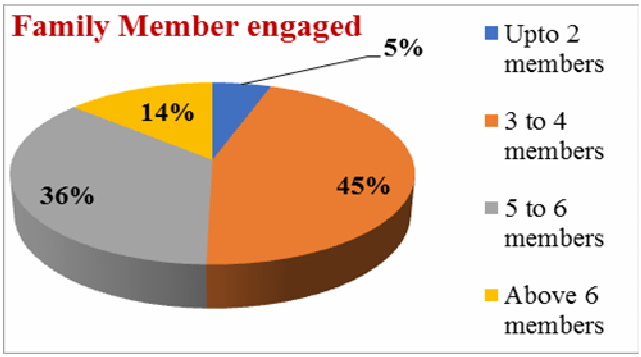


Fig. 9: Family Member Engaged in mango cultivation

Conclusion

The socio-economic profile of mango cultivators encompassed the personal characteristics of respondents, including age, educational attainment, religion, caste, employment, family size, involvement of family members in production, landholding size, experience, and yearly revenue. The majority of responders were identified in the older age bracket, specifically those over 50 years old. The majority of respondents were identified as belonging to the Other Backward Class. The majority of respondents had an educational attainment of 5th to 8th standard. The respondents were found to have 4 to 5 individuals in their families (middle). The majority of respondents reported agriculture as their occupational status. The majority of responders indicated having 10-40 years of experience in mango farming. The majority of respondents fell inside the marginal size of holdings.

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