



Research Article

SOCIO-ECONOMIC PROFILE AND PRODUCTION PROBLEMS OF GREEN FODDER GROWERS IN PUNJAB STATE

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Abstract- The present study has been conducted to study socio-economic profile and the production problems of green fodder growers in three agro-climatic zones of Punjab state during 2016-17. It was observed that only ten per cent heads of households were illiterate and remaining 90.00 per cent were literate. There were maximum 39.17 per cent farmers in the age group above fifty years. Maximum number of the farmers belonged to general category in Punjab (86.67 per cent). A maximum of forty percent farmers was having experience between 15 and 25 years. In Punjab, 21.67 per cent of sample farmers own land between 1 and 5 acres, 34.17 percent between 5 and 10 acres, 22.50 percent between 10 and 20 acres. The average family size was between 4 and 6 members (35.83 per cent). Among the production problems faced by fodder growers, high price of seed was the most important problem faced.

Keywords- Education, fodder area, garrett's ranking, social status, zone

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Introduction

Livestock sector plays an important role for the development of agrarian sector of India. Growth in livestock sector has more potential to reduce poverty than a similar growth in crop sector [1]. Presently, livestock sector contributes 26.90 per cent of agricultural GDP in India [2] and 35.90 per cent in Punjab state [3]. Despite being the leading milk producer nation, the Indian dairy sector is plagued by several hurdles such as low productivity of animals, inadequate availability of quality green fodder and quality fodder seeds etc. The country is highly deficient in respect of availability of green fodder, dry fodder and concentrates. The deficit of green fodder currently is 35 percent [4]. Any attempt towards enhancing green fodder availability would result in increased margin of profits to livestock owners. The area under fodder crops in India has stagnated at about 8.5-9.0 million hectares during the past decade and accounts for only about 4.6 per cent of the total cultivated area.

The deficit of green fodder is estimated to be 46.38 per cent in the state [5]. Owing to problem of shortage of fodder and feed, the future growth of livestock has to be sustained primarily on enhancement of animal productivity and not on increase in number of animals. Efforts need to be made for reducing the gaps between requirement and availability of green fodder by technological interventions to increase the fodder yields and conservation of fodder. The objective of this paper is to examine the basic characteristics of the fodder growers that might have influence on the decision making process and profitability of the fodder production and dairy enterprise. The rural households in a typical village community in India exhibit a great heterogeneity in socio-economic characteristics and Punjab is no exception to this. An attempt has been made to document the important socio-economic characteristics of the fodder growers which include education, main occupation, social status, experience in fodder production, land ownership status and total family size and at the same time various production problems being

faced by the fodder growers.

Methodology

Punjab state has been divided into three homogeneous agro-climatic zones viz. Sub mountainous zone, Central zone and South Western zone [6,7]. The study was conducted in all the three zones. Three districts, one from each zone, were selected purposively on the basis of the highest area under fodder crops. Amongst the selected districts, two blocks from each district, one block near and one distant to the periphery of district headquarter was selected randomly to realize the effect of distance factor in the findings. In the next stage, a cluster of three villages was selected randomly from each selected block. A sample of 20 fodder growing farmers from each cluster was selected making a total sample of 120 farmers. Primary data was collected using a specially designed and pre-tested schedule by personal interview method for the agricultural year 2016-17. In order to accomplish the objectives of the study, appropriate statistical tools and techniques like averages and percentages etc. were used to draw relevant inferences. Garrett's Ranking Technique has been used to analyze the production problems faced by fodder growers in different zones. Under the Garrett's Ranking Technique, the percentage position is calculated by using the following formula:

$$\text{Percentage Position} = \frac{100 (R_{ij} - 0.5)}{N_j}$$

Where;

R_{ij} = Rank given for i^{th} problem by the j^{th} respondent.

N_j = Number of problems ranked by the j^{th} respondent.

Results and Discussion

Socio-Economic profile of selected fodder growers

The information pertaining to the socio-economic details of the sample households of South Western, Central and Sub Mountainous zones has been discussed in detail under the following sub-heads.

Education

Education status of rural households is considered to have strong bearing on the fodder production. The distribution of sampled households according to the education of household head was presented in [Table-1]. It was evident from the table that in Punjab, only ten per cent heads of households were illiterate and

remaining 90.00 per cent were literate. Amongst the literate farmers, 82.50 per cent studied up to matriculation and higher secondary level. Only 7.50 per cent farmers were graduates or post graduates. In zone wise analysis, the highest proportion of literate farmers was found in Central zone and Sub Mountainous zone each with 92.50 per cent) followed by South Western zone (85.00 percent). The highest proportion of illiterate farmers were observed in South Western zone (15.00 per cent) followed by central and sub mountainous zones with 7.50 percent each. About 52 percent of the small farmers and 38 percent medium farmers were educated under the matriculation level[8].

Table-1 Socio-economic profile of the sample households (2016-17)

Socio-economic Characteristics/Zone		Sub Mountainous	Central	South Western	Punjab
Education	Illiterate	3 (7.50)	3 (7.50)	6 (15.00)	12 (10.00)
	Under matriculation	12 (30.00)	8 (20.00)	4 (10.00)	24 (20.00)
	Matriculation & 10+2	21 (52.50)	26 (65.00)	28 (70.00)	75 (62.50)
	Graduate and above	4 (10.00)	3 (7.50)	2 (5.00)	9 (7.50)
	Total	40	40	40	120
Age (Years)	20-30	3 (7.50)	3 (7.50)	6 (15.00)	12 (10.00)
	30-40	6 (15.00)	15 (37.50)	6 (15.00)	27 (22.50)
	40-50	11 (27.50)	9 (22.50)	14 (35.00)	34 (28.33)
	>50	20 (50.00)	13 (32.50)	14 (35.00)	47 (39.17)
	Total	40	40	40	120
Social status	General	36 (90.00)	33 (82.50)	35 (87.50)	104 (86.67)
	SC	4 (10.00)	7 (17.50)	5 (12.50)	16 (13.33)
	Others	-	-	-	-
	Total	40	40	40	120
Experience in dairying (Years)	5-15	1 (2.50)	5 (12.50)	7 (17.50)	13 (10.83)
	15-25	18 (45.00)	16 (40.00)	14 (35.00)	48 (40.00)
	25-35	6 (15.00)	14 (35.00)	10 (25.00)	30 (25.00)
	>35	15 (37.50)	5 (12.50)	9 (22.50)	29 (24.17)
	Total	40	40	40	120
Land ownership Status (Acres)	Up to 5	6 (15.00)	12 (30.00)	8 (20.00)	26 (21.67)
	5- 10	21 (52.50)	10 (25.00)	10 (25.00)	41 (34.17)
	10 – 20	6 (15.00)	8 (20.00)	13 (32.50)	27 (22.50)
	> 20	7 (17.50)	10 (25.00)	9 (22.50)	26 (21.67)
	Total	40	40	40	120
Family size	2-4	3 (7.50)	2 (5.00)	1 (2.50)	6 (5.00)
	4-6	17 (42.50)	14 (35.00)	12 (30.00)	43 (35.83)
	6-8	12 (30.00)	13 (32.50)	14 (35.00)	39 (32.50)
	> 8	8 (20.00)	11 (27.50)	13 (32.50)	32 (26.67)
	Total	40	40	40	120
Fodder area (Acres)	2-4	16 (40.00)	21 (52.50)	17 (42.50)	54 (45.00)
	4-9	13 (32.50)	13 (32.50)	17 (42.50)	43 (35.83)
	Above 9	11 (27.50)	6 (15.00)	6 (15.00)	23 (19.17)
	Total	40	40	40	120
Proportion of females		86.22	86.55	88.21	87.15
Proportion of in milk animals to milch animals	Buffalo	72.48	76.98	83.13	78.53
Proportion of females	Cow	89.63	89.35	91.62	94.12
Proportion of in milk animals to milch animals		76.79	81.15	75.36	77.07

Note: Figures in parentheses indicate percentage to respective zone totals

Age

The information regarding age of the sample farmers is presented in [Table-1]. A scrutiny of the table brought out that there were maximum 39.17 per cent farmers in the age group higher than fifty years in the Punjab. In zone wise analysis, percentage of farmers having age more than fifty years was found to be the highest in Sub Mountainous zone (50.00 percent) followed by South Western zone (35.00 percent) and Central zone (32.50 percent).

Social Status

A perusal of the [Table-1] also summarized the social status of the sample fodder growers. Maximum number of the farmers belonged to general category in Punjab (86.67 per cent) and 13.33 percent farmers belonged to SC category. In zone wise analysis, the highest proportion of general category farmers was found in Sub Mountainous zone (90.00 per cent) followed by South Western zone (87.50 per cent) and Central zone (82.50 per cent).

Experience in Dairying

The information regarding experience in dairying is presented in [Table-1]. A perusal of the table revealed that there were only 10.83 per cent farmers having experience between 5 and 15 years in the Punjab. Forty per cent farmers were having experience between 15 and 25 years, 25 percent were having 25-35 years experience and remaining 24.17 per cent were having more than 35 years of experience in dairying. In zone wise analysis, the proportion of farmers having experience between 15 and 25 years was found to be maximum in Sub Mountainous zone (45.00 per cent) followed by Central zone and (40.00 percent) and South Western zone (35.00 per cent).

Land Ownership Status

[Table-1] showed the land ownership status of the sample farmers. In Punjab, 21.67 per cent of sample farmers own land between 1 and 5 acres, 34.17 percent between 5 and 10 acres, 22.50 percent between 10 and 20 acres and remaining 21.67 percent were having more than 20 acres. In zone wise analysis, the proportion of farmers owning land between 5 and 10 acres was found to be the highest in Sub Mountainous zone (52.50 percent) followed by Central and South Western zones with 25.00 percent each.

Family Size

The information regarding the family size of the sample respondents has been presented in [Table-1]. In Punjab state, the average family size among sample households was between 4 and 6 members (35.83 per cent). Zone wise analysis clearly showed that the proportion of the farmers having average family size between 4 and 6 members was the highest in Sub Mountainous zone (42.50 per cent) followed by Central and South Western zones with 35.00 per cent and 30.00 per cent respectively.

Fodder area

[Table-1] also presents the fodder area of the sample farmers. About 45 percent of farmers were having fodder area between 2 and 4 acres, 35.83 percent between 4 and 9 acres and 19.17 percent having above 9 acres. In zone wise analysis, the highest proportion was observed in farmers having area between 2 and 4 acres i.e (52.50) percent in Central zone followed by South Western zone (42.50 percent) and Sub Mountainous zone (40.00 percent).

Distribution of animals

In Punjab state, the female proportion for buffaloes was observed to be 87.15 percent out of which maximum percent was in South Western zone i.e. 88.21 percent followed by Central zone (86.55 percent) and Sub Mountainous zone (86.22 percent) Out of the total milch animals, the proportion of in-milk animals in Punjab was found to be 78.53 percent. In a zone wise comparison, the highest proportion was in South Western zone i.e. 83.13 followed by Central zone with 76.98 per cent. In the case of cross bred cows, the proportion of females in Punjab state was 94.12 percent out of which maximum proportion was in South

Western zone i.e. 91.62 percent followed by Sub Mountainous zone (89.63 percent) and Central zone (89.35 percent). Out of the total milch animals, the proportion of in-milk animals in Punjab was 77.07 percent out of which maximum 81.15 percent were in Central zone followed by Sub Mountainous zone (76.79 percent) and South Western zone (75.36 per cent).

Production Problems

The production problems being faced by the fodder growers in Punjab state are discussed in detail in this section. A total of nine production problems have been reported in the state. The fodder growers were asked to rank these nine production problems as 1, 2, 3, 4, 5, 6, 7, 8 and 9. The calculated percentage positions for various ranks and their corresponding Garrett's table values are given in [Table-2]. For rank1, the calculated percentage position was 5.55 and the table value was 81. This value is given in the Garrett's ranking table for the percentage 5.51, which is very close to 5.55. Similarly, the Garrett's table values were noted for other ranks from the Garrett's ranking table.

Table-2 Percentage positions and their corresponding Garrett's table values

Rank	Percentage position	Garrett's Table value
1	5.55	81
2	16.67	69
3	27.77	62
4	38.88	55
5	50.00	50
6	61.11	44
7	72.22	38
8	83.33	31
9	94.4	19

The number and percentage of responses given by different fodder growers for various production problems is presented in [Table-3]. A perusal of table brought out that maximum number of the farmers (77.50 percent) reported high price of seed as production problem followed by high as cost of labour (67.50 percent), high cost of production (58.33 percent) and inadequate availability of labour (55.00 per cent).

The number of farmers giving various ranks to various production problems, total score, mean score and ranks assigned to various problems is presented in [Table-4]. For the problem of poor seed quality, the total score i.e. 305 was calculated by multiplying the number of farmers ranking this problem as 1,2,3,4,5,6,7,8 and 9 with their respective Garrett's table values given in [Table-3.1] and taking the sum. Mean score for this problem i.e. 61.00 was calculated by dividing the total score by respective number of farmers. Similarly, the total score and mean score was calculated for other problems. The problem with the highest mean score was given first rank and the problem with the next highest mean score was given second rank and so on. According to the Garrett's ranking, among the production problems faced by fodder growers, high price of seed got the first rank followed by high cost of labour, incidence of insects and pests, high cost of production, inadequate access to credit, inadequate availability of labour, lack of harvesting machinery, poor seed quality and shortage of land. The major production problems faced by sample farmers in Gujarat state were non-availability of HYV seeds in adequate quantity, low irrigation, low net returns from fodder crops, low productivity and qualitative deterioration of gauchar, wasteland and pasture etc [9].

Table-3 Number and percentage of responses for production problems

S. No.	Problems	Number of farmers (Total = 120)	Percentage of responses
1	Poor seed quality	5	4.17
2	High price of seed	93	77.50
3	Incidence of insects and pests	46	38.33
4	Lack of harvesting machinery	26	21.67
5	Inadequate access to credit	50	41.67
6	Inadequate availability of labour	66	55.00
7	High cost of labour	81	67.50
8	High cost of production	70	58.33
9	Shortage of land	32	26.67

Table-4 Ranking of production problems being faced by fodder growers in Punjab

S. No.	Problems	Rank									Number of farmers	Total score	Mean score	Rank
		1	2	3	4	5	6	7	8	9				
1	Poor seed quality	2	0	0	1	0	2	0	0	0	5	305	61.00	VIII
2	High price of seed	40	16	15	7	8	2	2	2	1	93	6304	67.78	I
3	Incidence of insects and pests	12	13	10	4	7	0	0	0	0	46	3059	66.50	III
4	Lack of harvesting machinery	3	10	7	6	0	0	0	0	0	26	1697	65.27	VII
5	Inadequate access to credit	10	16	11	11	2	0	0	0	0	50	3301	66.02	V
6	Inadequate availability of labour	16	16	16	13	4	1	0	0	0	66	4351	65.92	VI
7	High cost of labour	26	17	16	14	6	2	0	0	0	81	5429	67.02	II
8	High cost of production	22	10	15	20	2	1	0	0	0	70	4646	66.37	IV
9	Shortage of land	0	11	7	4	5	4	1	0	0	32	1877	58.66	IX

Conclusion

From the foregoing discussion, it may be concluded that ninety per cent of the sample fodder growers were literate. Amongst the literate farmers, 82.50 per cent studied up to matriculation and higher secondary level. There were maximum 39.17 per cent farmers in the age group higher than fifty years in the Punjab. Maximum number of the farmers belonged to general category in Punjab (86.67 per cent) and 13.33 percent farmers belonged to SC category. Forty per cent farmers were having experience between 15 and 25 years, 25 percent were having 25-35 years experience and remaining 24.17 per cent were having more than 35 years of experience in dairying. In Punjab state, the average family size among sample households was between 4 and 6 members (35.83 per cent). About 45.00 percent of farmers were having fodder area between 2 and 4 acres, 35.83 percent between 4 and 9 acres and 19.17 percent having above 9 acres. In Punjab state, the proportion of females was observed to be 87.15 percent for buffaloes and 94.12 per cent for cross bred cows. Among the production problems faced by fodder growers, the major problem being followed by the green fodder growers was high price of seed followed by high cost of labour, incidence of insects and pests, high cost of production. There is need of policy planning by the government for addressing these problems of the farmers for sustainable development of dairy sector as green fodder is important component of animal feed.

Application of research: The research is applicable for enhancing the dairy profitability if the problems of green fodder growers are addresses properly which are pointed out in this study

Research Category: Green fodder growers

Abbreviations:

GDP-Gross Domestic Product
SC- Scheduled Caste

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