

RESEARCH ARTICLE

Production Performance of Goat at Farm Level and Marketing Practices Followed by Unorganized Goat Farmers

Rajesh Kumar¹, B.P. Singh², V.K. Basunathe³ and Vijay Kumar⁴

1. Asso. Prof., Vet. and AHEE, COVAS, Kishanganj, BASU,
2. PS and Head, Social Science, ICARRCNEH Region, Umiam, Shillong, Meghalaya
3. Asso. Prof., Nagpur Veterinary College, MAFSU Nagpur
4. Sr. Scientist (Vet. Ext.), ICAR-Directorate of Poultry Research, Hyderabad, Telangana, India
Corresponding author e-mail : rajeshvet30@gmail.com

ABSTRACT

Goat husbandry is one of the important components of the livestock sector. Goat sector provides subsidiary source of livelihood to the people especially to small and marginal farmers and landless labourers. The study was carried out in Bihar state which comprised of three agro-climatic zones. For current study a total of 24 villages selected from the randomly selected six districts. Ten respondents (who owned at least 5 goats) from each village were selected randomly in a way to make a sample size of 240. Data were collected to study the production performance and marketing practices followed by goat farmers. Analysis of data revealed that more than 70 per cent farmers from all three zones had reared Black Bengal goat (75.80 %) reported 380-460 days of age of goat at first kidding followed by less than 380 days average kidding interval of goat was 273.82 days in the study area, majority of goat farmers (68.80%) had obtained about 10 to 32 kg lactation yield, majority of the overall respondent's (49.60 %) had twinning followed by single kidding (40 %), triplicate kidding (8.30 %) and Quadruplicate (2.10 %) kidding. Results further revealed that majority of the overall 75 per cent goat farmers were lacking of organized market for goat trading, 90 per cent farmer were lacked information on marketing, 69.17 per cent did not follow marketing plan, 80.42 per cent did not perform survey of price before selling of goat.

Keywords: Marketing practices; Production performance; Goat farmers; Kidding interval.

Livestock sector plays an important and vital role in providing nutritive food and in supplementing family incomes and generating gainful employment in the rural sector, particularly among the landless, small and marginal farmers. Goat husbandry is one of the important components of the livestock sector. India with 148.88 million goat population stands second after China (*Annual report, 2022-23*). The goat sector generates about 4 per cent rural employment and 20 million families in India are engaged in goat keeping. Small ruminants are generally reared in rain fed areas by landless or the resource poor farmers whose average agricultural holding is either very less (marginal and small farmers) or is not sufficient to devote for cultivation of crops (*Kumar and Pant, 2003 and Singh et al., 2005*). More than 60 per cent of the workers engaged in agriculture are either marginal or small farmers having an average land holding size of 1.32 hectares (2000-01) and it would be mere 0.68 ha

in 2020, and would be further reduced to a low of 0.32 ha in 2030 (*ICAR Vision, 2030*).

The goat sector has a significant potential for round the year employment generation particularly in rural areas. India ranks first in goat milk production with a production of 6.09 million tonnes of world goat milk production. Goat, in true sense, is called as poor man's cow due to its tremendous economic importance in contributing milk, meat and ultimately the household nutrition security and livelihood to the poor people. Studies related to production performance at farmers level helps in understanding the level of production farmers getting at farm level and marketing practices helps in understanding of various practices adopted to sell goats.

METHODOLOGY

The study was carried out in Bihar state which comprised of three agro-climatic zones (*Ghosh, 1991*). To access the real status of adoption of goat health

technologies, two districts were selected from each agro-climatic zone on the basis of highest density of goat population. From each selected district, two blocks were randomly selected to make a total number of 12 blocks. Subsequently, two villages were selected randomly from each block to constitute a total of 24 villages. Ten respondents (who owned at least 5 goats) from each village were selected randomly in a way to make a sample size of 240. Data related to production performance like breed of goat, weight of adult male goat, weight of adult female goat, age at first kidding, kidding interval, lactation yield and prolificacy and marketing practices were collected. Data were collected for selected variables of production and marketing practices keeping in view the objective of the study by personnel interviews, observation method and from secondary sources using the developed semi-structured interview schedule. In order to get logical interpretation, the data were compiled, tabulated and subjected to appropriate statistical analysis methods by following standard statistical methods described by *Snedecor and Cochran (1994)*.

RESULTS AND DISCUSSION

Production performance of goat

Breed of goat : Breed is one of the important characteristics which influence production performance of goat. Table 1 clearly indicates that more than 70 per cent farmers from all three zones had reared Black Bengal goat while 31 per cent farmers of zone I followed by 30 per cent of zone III and 23.75 per cent farmers of zone II, respectively reared non-descript goat (*Dhara et al., 2019*). Findings indicate a greater number of farmers were reared non-descript breed of goat.

Age at first kidding : Majority of farmers (75.80 %) reported 380-460 days of age of goat at first kidding followed by less than 380 days (farmers of zone I-12.50%, farmers of zone II-16.30% and farmers of zone III-11.30%) and more than 460 days (farmers of zone I-12.50%, farmers of zone II-11.30% and farmers of zone III-8.80%). Average age at first kidding was found 420.39 days in the study area (Table 1). Study suggested that age of first kidding was comparatively higher among all zone of study.

Kidding interval : It is evident from the table 1 that average kidding interval of goat was 273.82 days in the study area. Majority of overall goat farmers (68.30%) reported the kidding interval between 230-316 days followed by 18.80 per cent of farmer's

who reported more than 316 days and 12.90 per cent farmers reported less than 230 days of kidding interval in their goats. Rearing of non-descript breed of goat might be reason for longer days of kidding interval.

Lactation yield : It is one of the breed characteristics which influenced by type of breeding and management practices followed by the goat farmers. A perusal of table 1 indicates that overall majority of goat farmers (68.80%) had obtained about 10 to 32 kg lactation yield followed by 20.40 per cent farmers who obtained less than 10 kg lactation yield and 10.80 per cent of farmers reported more than 32 kg lactation yield. Similar trend was observed in zone II and zone III. Average lactation yield was found 21.87 kg in the study area. In the study area most of the goat farmers were concerned for meat production parameters in goat and that too with non-descript breed that might be the reason for low lactation yield.

Prolificacy : Majority of the overall respondent's (49.60 %) goat had twinning followed by single kidding (40 %), triplicate kidding (8.30 %) and Quadruplicate (2.10 %) kidding (Table 1). Twining percentage was reported highest by the respondents in goat. It might be due to the fact that majority of the respondents' rears Bengal breed as village goat, which has been reported to have higher twinning percentage. *Tudu (2003)* reported in a study that tribal preferred black Bengal breed of goat due to its high prolificacy, early maturity, higher litter size and its small body size.

Marketing practices of goat farmers: It can be evident from the Table 2 that majority of the overall goat farmers (75%) were lacking of organized market for goat trading. Table further reveals that 90 per cent farmer lacked information on marketing, 69.17 per cent did not follow marketing plan, 80.42 per cent did not perform survey of price before selling of goat and 100 per cent found difference in price offered between market and middleman. Majority of the farmers (70.80%) purchased or sold kid in Rs. 438-1067. Marketable weights of goat for majority of the farmers (73.30%) were about 10-15 kg. Table further reveals that majority of the farmers (76.25 %) did not follow any specific time for marketing of goat, 98.75 per cent farmers preferred to sell live animal as mode of selling goats and 85.42 per cent farmers preferred middleman as channel to sell goats. Lack of awareness of markets, pricing structure, unorganized marketing facilities coupled with distress sale are the major reasons for not receiving fair price for their animals by the farmers

Table 1. Distribution of respondents according to production performance of goat

Variables	Zone I (n=80)	Zone II (n=80)	Zone III (n=80)	Overall (N=240)	χ^2
<i>Breed of goat</i>					
Black Bengal	55 (68.75)	61 (76.25)	56 (70.00)	172 (71.67)	2.561
Non descriptive	25 (31.25)	19 (23.75)	24 (30.00)	68(28.33)	
<i>Weight of adult male goat (kg)</i>					
Low (<11.06)	7(8.80)	6(7.50)	3(3.80)	16(6.70)	3.213
Medium (11.06-17.14)	64(80.00)	61(76.30)	62(77.50)	187(77.90)	
High (>17.14)	9(11.30)	13(16.30)	15(18.80)	37(15.40)	
Mean±SD	14.15±3.089				
<i>Weight of adult female goat (kg)</i>					
Low (<9.26)	20(25.00)	16(20.00)	11(13.80)	47(19.60)	6.809
Medium (9.26-16.28)	48(60.00)	47(58.80)	45(56.30)	140(58.30)	
High (>16.28)	12(15.00)	17(21.30)	24(30.00)	53(22.10)	
Mean±SD	12.77±3.51				
<i>Age at first Kidding (days)</i>					
Low (<380.55)	10(12.50)	13(16.30)	9 (11.30)	32 (13.30)	21.659
Medium (380.55-460.55)	60 (75.00)	58 (72.50)	64 (80.00)	182 (75.80)	
High (> 460.23)	10 (12.50)	9 (11.30)	7 (8.80)	26 (10.80)	
Mean±SD	420.39±39.84				
<i>Kidding Interval (days)</i>					
Low (<230.87)	11(13.80)	9(11.30)	11(13.80)	31(12.90)	0.477
Medium (230.87-316.77)	53(66.30)	56(70.00)	55(68.80)	164 (68.30)	
High (>316.77)	16(20.00)	15(18.80)	14(17.50)	45(18.80)	
Mean±SD	273.82±42.947				
<i>Lactation Yield (liters)</i>					
Low (<10.86)	8(10.00)	27(33.80)	14(17.50)	49(20.40)	14.903**
Medium (10.86-32.88)	61(76.30)	47(58.80)	57(71.30)	165(68.80)	
High (>32.88)	11(13.80)	6(7.50)	9(11.30)	26(10.80)	
Mean±SD	21.87±11.013				
<i>Lactation Length (days)</i>					
Low (<56.29)	18 (22.50)	16 (20.00)	20 (25.00)	54 (22.50)	3.038
Medium (56.29-102.12)	49 (61.30)	57 (71.30)	51 (63.80)	157 (65.40)	
High (>102.12)	13 (16.30)	7 (8.80)	9 (11.30)	29 (12.10)	
Mean±SD	79.21±22.91				
<i>Prolificacy</i>					
Single kidding	28 (35.00)	36 (45.00)	32 (40.00)	96 (40.00)	2.978
Twining	43 (53.80)	35 (43.80)	41 (51.30)	119 (49.60)	
Triplicate	7 (8.80)	8 (10.00)	5 (6.30)	20 (8.30)	
Quadruplicate	2 (2.50)	1 (1.30)	2 (2.50)	5 (2.10)	
Mean±SD	1.70±0.72				

** χ^2 cal significant at .001level; Figures in parentheses indicate percentage

(Porwal et al., 2006). Rao et al. (2008) reported that 75 per cent of the farmers sold their stock to the middle men. Majority of goat farmers sold their goats on need basis as to full fill their basic home requirements, were lack credit facility (92.92%) and 90.83 per cent farmers were not satisfied with existing marketing channels. Kumar (2002) reported that the

exploitation by the middlemen was more amongst resource poor farmers and hence need to create the marketing facilities and ensure remunerative prices to their farm produce by strengthening co-operative network. Distance from market has significant effect on the adoption of crossbred dairy cows in the area as indicated by Bulale (2000) and Mishra et al.

Table 2. Marketing practices followed by goat farmers

Marketing practices	Zone I (n=80)	Zone II (n=80)	Zone III (n=80)	Overall (N=240)
<i>Perform price surveys, before selling</i>				
Yes	16(20.00)	18(22.50)	13(16.25)	47(19.58)
No	64(80.00)	62(77.50)	67(83.75)	193(80.42)
<i>Difference in prices offered by middleman and market</i>				
Yes	80 (100.00)	80 (100.00)	80 (100.00)	240(100.00)
No	0.0	0.0	0.0	0.0
<i>Price of kids (Rs.)</i>				
Low (<438.28)	10 (12.50)	8 (10.00)	7(8.80)	25 (10.40)
Medium (438.28-1067.02)	52 (65.00)	60 (75.00)	58 (72.50)	170 (70.80)
High (>1067.02)	18 (22.50)	12 (15.00)	15 (18.80)	45 (18.80)
<i>Marketing time of goat</i>				
Specific time of selling goats	19(23.75)	22(27.50)	16(20.00)	57(23.75)
No specific time	61(76.25)	58(72.50)	64(80.00)	183(76.25)
<i>Mode of selling</i>				
Live goats	77(96.25)	80(100.00)	80(100.00)	237(98.75)
After slaughter	3(3.75)	(0.00)	(0.00)	3(1.25)
<i>Commonly followed marketing channels</i>				
Through middleman	68(85.00)	65(81.25)	72(90.00)	205(85.42)
Through local market	12(15.00)	15(18.75)	8(10.00)	35(14.58)
<i>Reason for selling goat</i>				
To fulfill domestic needs	72(90.00)	65(81.25)	76(95.00)	213(88.75)
To remove surplus animals	8(10.00)	15(18.75)	4(5.00)	27(11.25)

Figures in parentheses indicate percentage

(2012) reported that market distance is negatively and significantly related to adoption decision.

CONCLUSION

The study revealed that kidding interval was high, lactation yield was low, lack of awareness of markets, pricing structure, unorganized marketing facilities coupled with distress sale are the major reasons for not receiving fair price for their animals by the goat farmers. Majority of goat farmers sold their goats on need basis and were not satisfied with existing marketing channels. Hence the farmers should be trained in scientific breeding and feeding management of goats to achieve high production performance in turn will be helpful to attain more profit. Also suitable intervention should be taken to create the marketing facilities and ensure remunerative prices to farmers. Proper guidance, awareness and motivation should be given to farmers to sell their animals on body weight basis through organized manner rather than selling to middle men when need arises. These arrangements may be helpful to overcome the prevailing constraints.

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