



E-ISSN: 2320-7078

P-ISSN: 2349-6800

www.entomoljournal.com

JEZS 2020; 8(3): 802-805

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Received: 01-03-2020

Accepted: 03-04-2020

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Analysis of production parameters of cows in comparison with socio-economic profile of dairy farmers

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Abstract

The present study was undertaken during the year 2019-20 at six contact villages in Ambajogai tehsil by DRI, Krishi Vigyan Kendra, Ambajogai, District Beed (Maharashtra). From each village ten dairy farmers who possess more than four milch animals were selected randomly. The data regarding production and reproduction status of dairy animals and socio-economic profile of dairy farmers were collected from total 60 farmers by conducting their personal interview. The collected data analyzed through various appropriate statistical tools such as frequency, percentage and data were interpreted to get logical results and fruitful conclusion of the study. The majority of dairy farmers (56.66%) were belonged from general category followed by OBC (28.33), SC (11.66%) and ST (3.33%) category. Educational status showed that 48.33% dairy farmers were having primary education followed by illiterate (16.66%), higher secondary (11.00%) and graduate and above graduate (10%). More than half of dairy farmers (53.33%) were with medium level of experience followed by 28.33 and 18.33 per cent with low and high level of experience, respectively in dairy farming occupation. Majority of the farmers belonged to medium income group (58.33%) followed by low (31.66%) and high (10.00%). Buffalo contributed about 47.54% in total livestock population and followed by crossbred cow (32.46%) and indigenous cow (20%). The 73.33% dairy farmers followed vaccination practice in their livestock. The 8.33% dairy farmers followed de-worming practice in livestock for control of internal parasites. Only 5% dairy farmers were feeding mineral mixture regularly to dairy animals. Average per day milk production (kg) of crossbred cow, buffalo and indigenous cow were recorded 8.65, 6.87 and 3.51, respectively. The average age of first calving was recorded 47, 31 and 36 month indigenous cow, crossbred cow and buffalo, respectively. The average numbers of services required for last pregnancy were noted 1.66, 1.51 and 1.64 in indigenous cow, crossbred cow and buffalo, respectively. It is concluded that knowledge level and awareness level regarding health care management of the dairy farmers of the region was low. Hence, it is recommended to provide more extension services such as training camps, awareness camp and clinical camps by government and NGOs to dairy farmers of the Ambajogai tehsil.

Keywords: Livestock, dairy, farmer, age at first calving

Introduction

The annual contribution of livestock sector in total GDP is nearly 4.5% at current prices during 2015-16. India has emerged as one of the world's biggest producers of milk, with the total milk production 176.4 million MT which accounting for 20 per cent of global milk production [1]. The 6 crores rural households in India depend on dairying for livelihood and income, more than 70 per cent of which are small and marginal farmer and landless families [2]. Beed district is situated in Marathwada region of Maharashtra state. The rainfall is less compare to other districts in Maharashtra, due to which it considered as a dry district. The less rainfall is cause of low productivity, crop failure and which results in less income of farmers in Beed [3]. In such a situation, dairy farming is providing a golden opportunity to dairy milk producers and farmers to do the supplementary business to agriculture in their own villages in Beed district. Looking to the prosperous future of the dairy industry, the economic status of the dairy farmers of this region will be enhanced if they could look at the dairying as a commercial enterprise. The possible reasons behind the low milk production per animal are traditional management practices and lack or low level of knowledge about improved dairy management practices. Thus, knowledge of improved management practices is one of the important aspects, which influences livestock production. Tremendous research study has been done at different part of the country on the various aspects of scientific dairy management practices. Therefore, it is very important to survey rural areas in respect of scientific dairy practices followed by

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dairy farmers, which differ from region to region and district to district. Therefore, keeping this view in mind, present study was carried out with the objectives, to access the socio-economic profile, knowledge of dairy farmers and production and reproduction status of dairy animals in Ambajogai tehsil of Beed district in the Marathwada region.

Materials and Methods

The present survey work was conducted during year 2019-20 at six contact villages *Viz.*, Sangaon, Kodari, Lokhandi sawargaon, Shripatrayawadi, Warapgaon and Hiwara in Ambajogai tehsil by Deendyal Research Institutes Krishi Vigyan Kendra, Ambajogai, District Beed (Maharashtra). From each village ten dairy farmers who possess more than 4 milch animals were selected randomly. Information collected from total 60 farmers by conducting their personal interview. The importance and the objective of the study were explained to dairy farmers in order to get their co-operation. The information was collected in friendly and informal meeting. Most of information and data were collected at morning hours, when farmers were available at their home or farm. For collection of the information on various aspects related to dairy animals and socio-economic profile of dairy farmers, the suitable questionnaires were used. The collected data analyzed through various appropriate statistical tools such as frequency, percentage and data were interpreted to get logical results and fruitful conclusion of the study.

Results and Discussion

Socio-economic status of dairy farmers

Table No. 1 revealed that about 56.66 per cent dairy farmer were belonged from general category followed by 28.33 per cent other backward class (OBC), 11.66 per cent schedule caste (SC) and 3.33 per cent of schedule tribe (ST) category. These results are in line with Gangasagare and Karanjkar 2009 [4]. Educational status showed that 48.33 per cent of dairy farmers were having primary education followed by illiterate (16.66%), higher secondary (11.00%) and graduate and above graduate (10.00%) Kochewad 2017 [5] reported forty five percent of dairy farmers were having secondary education, followed by, higher secondary (25.75%), primary (21.25%), graduate (4.75%) and illiterate (3.25%), respectively. It was also observed that more than half (53.33%) of dairy farmers were with medium level of experience followed by 28.33 and 18.33 per cent with low and high level of experience respectively in dairy farming occupation. Vekariya *et al.* 2016 [6] reported that more than half (54.17%) of the respondents were with medium level of experience followed by 27.50 and 18.33 per cent with high and low level of experience respectively in dairy farming. The majority of dairy farmers (61.66%) is having dry land and remaining 38.33 per cent with irrigated lands. The 35.33 per cent dairy farmers were lived in house made up of tin roof

followed by cement concrete (33.33%) and thatched roof with mud walled (8.33%). It was recorded that 30 per cent farmers performed single dairy occupation followed by dairy + goatry (13.33%), dairy + sericulture (5%), dairy + poultry (3.33%) and Dairy + Poultry + Sericulture (1.66%). These results are close association with Ahirwar *et al.* 2016 [7]. Majority of the farmers belonged to medium income group (58.33%) followed by low (31.66%) and high (10.00%).

Production status of dairy animals

Table No. 2 revealed that buffalo contributed about 47.54 per cent in total livestock population reared by surveyed dairy farmers in Ambajogai tehsil and followed by crossbred cow (32.46%) and indigenous cow (20%) [8]. In survey, it was observed that milking pregnant animals contributed about 61.64 per cent in total animals in this region and followed by milking non-pregnant (32.46%), dry pregnant (3.93%) and dry non-pregnant (1.97%). The important scientific animal husbandry practices followed by the dairy farmers were very low. The 73.33 per cent dairy farmers followed vaccination practice in their livestock. Patel P.D. *et al.* 2018 [9] reported 88.67% respondents have regularly vaccinated their animals against various diseases. The 8.33 per cent dairy farmers followed de-worming practice in livestock for control of internal parasites. Gadhavi *et al.* 2020 [10] reported 17.5 per cent of the dairy farms were followed deworming at regular interval. Only 5 per cent dairy farmers were feeding mineral mixture regularly to dairy animals. This result has close association with Sharma *et al.* 2013 [11]. Average per day milk production (kg) of crossbred cow, buffalo and indigenous cow were recorded 8.65, 6.87 and 3.51, respectively in surveyed dairy farmers in Ambajogai tehsil. Singh 2016 [12] reported overall average daily milk yield was 3.29 litres in local cattle and 5.35 litres in crossbred cows. The milk utilization pattern was also studied in this survey. Out of total surveyed dairy farmers in Ambajogai tehsil, majority of dairy farmers (48.33%) sold their milk to co-operative dairy and followed by government dairy (23.33%), direct customers (16.66%) and khoa making centres (11.66%).

Reproductive parameters of dairy animals

The two important reproductive parameters such as age at first calving (AFC) and number of services required for conception (NOSC) were studied in this survey program. Table No. 3 revealed that the average age of first calving was recorded 47, 31 and 36 month indigenous cow, crossbred cow and buffalo, respectively. These results in line with results of Gogoi *et al.* 1985 [13], Mulugeta and Belayneh 2013 [14] and Ayalew *et al.* 2018 [15]. The average numbers of services required for last pregnancy were noted 1.66, 1.51 and 1.64 in indigenous cow, crossbred cow and buffalo, respectively. These results are close association with Jumat *et al.* 1988 [16] and Mohammad *et al.* 2019 [17].

Table 1: Socio-economic status of dairy farmers

Sr. No.	Characteristics	Frequency	Percentages
	Category		
1	General (OPEN)	34	56.66
	Other backward class (OBC)	17	28.33
	Schedule tribe (ST)	02	3.33
	Schedule caste (SC)	07	11.66
	Educational status		
2	Illiterate	10	16.66
	Primary	29	48.33
	Secondary	10	10
	Graduate & above	11	11
	Experience in dairy farming		
3	Less (up to 10 years)	17	28.33
	Medium (between 11 to 20 years)	32	53.33
	High (above 20 years)	11	18.33
	Type of land		
4	Irrigated	23	38.33
	Rainfed	37	61.66
	Household type		
5	Thatched roof with mud walled	5	8.33
	Tin roof	35	35.33
	Cement concrete	20	33.33
	Enterprises performed along with dairy		
6	Dairy	18	30
	Dairy + Goatry	08	13.33
	Dairy + Sericulture	03	05
	Dairy + Poultry	02	3.33
	Dairy + Poultry + Sericulture	01	1.66
	Annual income		
7	Low income (Up to Rs. 1,00,000)	19	31.66
	Medium income (Rs. 1,00,001 to 2,00,000)	35	58.33
	High income (Above Rs. 2,00,000)	06	10

Table 2: Production status of dairy animals

Sr. No.	Characteristics	Frequency 305	Percentages
	Dairy animal		
1	• Indigenous cow	61	20
	• Crossbred cow	99	32.46
	• Buffalo	145	47.54
	Production status of dairy animal		
2	• Milking non-pregnant	99	32.46
	• Milking pregnant	188	61.64
	• Dry pregnant	12	3.93
	• Dry non-pregnant	06	1.97
	Animal husbandry practices followed by the farmer		
3	• Mineral mixture feeding	03	05
	• De-worming	05	8.33
	• Vaccination	44	73.33
	Selling pattern of milk		
4	• Direct customer	10	16.66
	• Co-operative dairy	29	48.33
	• Government dairy	14	23.33
	• Khoa making centre	07	11.66
	Average per day milk production (kg)		
5	• Indigenous cow	3.51	-
	• Crossbred cow	8.65	-
	• Buffalo	6.87	-

Table 3: Reproductive parameters of dairy animals

Type of dairy animal	Indigenous cow		Crossbred cow		Buffalo	
	AFC* (months)	NOSC	AFC (months)	NOSC**	AFC (months)	NOSC
Values	47	1.66	31	1.51	36	1.64

*AFC-Age at first calving

**NOSC- No. of services per conception

Conclusion

It is concluded that knowledge level and awareness level regarding health care management of the dairy farmers of the region was low. Hence, it is recommended to provide more extension services such as training camps, awareness camp and clinical camps by government and NGOs to dairy farmers of the Ambajogai tehsil.

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