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Socio-economic status and the feeding practices adopted by crossbred cattle owners in Chalisgaon Tahsil of Jalgaon district

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Abstract

The present investigation entitled “Socio-economic status and the feeding practices adopted by crossbred cattle owners in Chalisgaon tahsil of Jalgaon district” was carried out by randomly selecting 200 cattle owners by selecting one tahsil namely Chalisgaon. From Chalisgaon tahsil, ten villages were selected randomly and from each village 20 farmers were again selected constituting 200 respondents and were classified in five different groups i.e., landless, marginal (up to 1 ha), small (1 to 2 ha), medium (2 to 8 ha) and large (Above 8 ha) and livestock population were also classified on the basis of herd size. In feeding practices, majority of the farmers were followed stall feeding + grazing followed by stall feeding. The adoption of processing of concentrates before feeding was 52.50 per cent. While only 3 per cent cattle owners enriched the poor quality of straw by urea. Feeding of green fodder was 67.50 per cent. While only 3.5 per cent farmers were preparing silage. Majority of farmers fed @ 2 to 2.5 kg of dry matter per 100 kg body weight of animals. However, 49 per cent fed concentrate @ 40 per cent of milk production and 1kg for maintenance. Total 88.50 per cent farmers provide additional ration for pregnant animal. While only 16 per cent cattle owners fed mineral mixture or mineral bricks. However, 76.5 per cent cattle owners fed unconventional roughages and concentrates during scarcity. While 4 per cent cattle owners used homemade concentrate feed. Feeding of concentrate mixture with roughages was practiced by 76.5 per cent.

Keywords: livestock, animal feeding, livestock management, animal breeding

1. Introduction

Indian agriculture without livestock is inconceivable idea, along with the crop improvement programme, there is an urgent need of improving livestock and agriculture, Livestock as it is considered as backbone of Indian agriculture. Next to agriculture, livestock play a significant role in maintaining a strong agricultural economy in India. livestock provides much employment opportunities to the large number of landless labourers and marginal farmers. Livestock also produces milk, manure and draft power. The cattle are major integrate component of the Indian dairy farming. In India cattle is commonly reared in small scale farms, large scale farms and for domestic milk production. Increasing the population of cattle, there is need of adoption of good management practices and new dairy farming practices is necessary. System of rearing of cattle in India is older than even its agriculture. Milch cattle were known even in Vedic times, when cow was regarded as “Kamdhenu” and thus commanded the greater respect from all. Later on, man settled down to the agriculture, cattle come to be used as draft animals. In India livestock rearing is traditional and based on socio-economic condition of farmers due to low availability of quality feeds with poor feeding practices. Animal Husbandry and Dairy development play a predominant role in the rural economy in supplementing the income of rural households, particularly the landless, small and marginal farmers. It also provides subsidiary occupation in semi- urban areas and people living in drought prone areas, where crop output may not sustain the family. According to 20th Livestock census (2019) ^[1] the total livestock population consisting of Cattle, Buffalo, Sheep, Goat, Pig, Horses, Mules, Donkeys, Camels, Mithun and Yak in the country is 535.78 million. India ranks first in livestock population which contributes near about 17.64 per cent of world livestock population. It also possesses the of the 302.79 million total bovine population. India has 192.49 million cattle out of which 50.43 million are crossbred and exotic. Indigenous and non-descript cattle population 142.11 million. Buffalo population in country is 109.85 million.

2. Material and Methods

The present investigation the year 2020-21 by collecting data from different crossbred cattle owners in Chalisgaon tahsil of Jalgaon District. The data regarding various feeding practices, management practices and constraints encountered while non-adopting recommendation feeding and management practices were collected through a comprehensive questionnaire was prepared to collect information by personal interview.

3. Results and Discussion

The result of this investigation was presented and discussed in the light of research work conducted so far, in this chapter under following heads.

1. Classification of farmers on the basis of size of land holding.

2. Classification of animal population on the basis of herd size.
3. Feeding practices adopted by Crossbred cattle farmers.
4. Management practices adopted by Crossbred cattle owners.
5. Constraints in feeding and management practices.

1. Classification of farmers on the basis of size of land holding

The dairy farmers were selected on the basis of land holding i.e., Landless (no land holding), marginal (up to 1 ha), small (1 to 2 ha), medium (2 to 8 ha) and large (above 10 ha). The data with regard of animals under various land holding categories are presented in Table 1.

Table 1: Classification of farmers according to size of land holding

Sr. No.	Name of village	Landless	Marginal	Small	Medium	Large	Total
		(No land)	(Upto 1 ha)	(1 to 2 ha)	(2 to 10 ha)	(above 10 ha)	
1	Bhamre BK	0	7	6	4	3	20
2	Bhamre KH	1	10	8	0	1	20
3	Waghali	2	8	7	1	2	20
4	Hingone sim	1	8	8	2	1	20
5	Mundkheda	0	11	8	1	0	20
6	Alwadi	0	9	7	3	1	20
7	Bhoras	1	10	8	1	0	20
8	Waghalo	1	9	7	2	1	20
9	Borkheda	2	9	8	1	0	20
10	Pilkhod	0	8	9	2	1	20
	Total	8	89	76	17	10	200
	Total Per Cent	4	44.5	38	8.5	5	100

It was observed from table 1 that in Chalisgaon tahsil the large number of farmers was having marginal land holding (44.5%), followed by small land holding (38%), medium (8.5%), large (5%) and (4%) farmers were landless. Devasena *et al.* (2015)^[4] who indicated that landless labour (27.1%) and small farmers with low land holdings (36.6%) in Chittoor district

were dependent on dairying for their sustenance.

2. Classification of animal population on the basis of herd size.

The enumeration farmers were also distributed as per animal population mention by them and presented in Table 2.

Table 2: Classification of animal population on the basis of herd size.

Sr. No.	Name of village	Upto 2	2 to 5	5 to 10	More than 10	Total
1	Bhamre BK	2	8	7	3	20
2	Bhamre KH	3	8	8	1	20
3	Waghali	3	10	5	2	20
4	Hingone	4	9	6	1	20
5	Mundkheda	3	10	7	0	20
6	Alwadi	4	9	5	2	20
7	Bhoras	4	9	6	1	20
8	Waghalo	2	8	8	2	20
9	Borkheda	3	8	9	0	20
10	Pilkhod	4	7	7	2	20
	Total	32	86	68	14	200
	Total Percent (%)	16	43	34	7	100

It was observed from table 2 that, 43 percent of total (200) farmers possessed the herd size of 2 to 5 animals, followed by 34 per cent farmers possessed the herd size 5 to 10 animals. However, 16 per cent and 7 per cent of total (200) farmers possessed the herd size less than 2 animal and more than 10 animals, respectively on their farms. The present results are in conformity with the observation reported by Kumawat and Yadav (2012)^[10] who categorized dairy farmers into three

groups i.e. respondents possessing 1-3 cattle/ buffalo were termed as small dairy farmers, those possessing 4-6 Cattle/buffalo termed as medium dairy farmers and those possessing more than 6 Cattle/buffalo termed as large dairy farmers.

3. Feeding practices adopted by Crossbred cattle owners

Table 3: Feeding practices adopted by Crossbred cattle owners.

Sr. No.	Feeding practices	Landless	Marginal	Small	Medium	Large	Total
1	System of feeding	8	89	76	17	10	200
I	Grazing	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
ii	Stall feeding	0 (0)	33 (37.07)	45 (59.21)	13 (88.43)	8 (80)	99 (49.50)
iii	Grazing + Stall	8 (100)	56 (62.92)	31 (40.78)	4 (23.52)	2 (20)	101 (50.5)
2	Processing of concentrate before feeding (Crushing, soaking, etc)	2 (25)	46 (51.68)	43 (56.57)	12 (70.58)	5 (50)	105 (52.5)
3	Enrichment of poor quality straw by urea	0 (0)	1 (1.12)	1 (1.31)	2 (11.76)	2 (20)	6 (3)
4	Chaffing of green fodder and dry fodder						
I	Manually	8 (100)	82 (92.13)	65 (85.52)	4 (23.52)	1 (10)	160 (80)
ii	Machinery	0 (0)	7 (8.53)	11 (14.47)	13 (76.47)	9 (90)	40 (20)
iii	Total	8 (100)	89 (100)	76 (100)	17 (100)	10 (100)	200 (100)
5	Feeding green fodder	4 (50)	53 (59.55)	51 (67.10)	15 (88.23)	10 (100)	135(67.50)
6	Feeding Silage	0 (0)	0 (0)	2 (2.63)	2 (11.76)	3 (30)	7 (3.50)
7	Feeding of dry matter 2 to 2.5 kg per 100kg of body weight of animal	6 (75)	72 (80.89)	63 (82.89)	15 (88.23)	9 (90)	165 (82.5)
8	Feeding of concentrate @ 40 % of milk production	3 (37.5)	39 (43.82)	52 (68.42)	11 (64.70)	7 (70)	112 (56)
9	Additional ration for pregnant animal	7 (87.5)	76 (85.39)	68 (89.47)	16 (94.11)	10 (100)	177(88.50)
10	Use of mineral mixture	0 (0)	12 (13.48)	17 (22.36)	8 (47.05)	6 (60)	43 (21.5)
11	Feeding of unconventional roughages and concentrates during scarcity	7 (87.5)	79 (88.76)	58 (76.31)	5 (35.29)	3 (30)	153 (76.50)
12	Type of concentrate use						
I	Home made	1 (12.4)	3 (3.37)	4 (5.26)	0 (0)	0 (0)	8 (4)
ii	Purchased	3 (37.5)	73 (82.62)	61 (80.26)	5 (29.41)	2 (20)	144 (72)
iii	Both	4 (50)	13 (14.60)	11 (14.47)	12 (76.58)	8 (80)	48 (24)
13	Feeding of concentrate mixture						
I	Separate	3 (37.5)	18 (20.22)	14 (18.42)	8 (47.05)	4 (40)	47 (23.5)
ii	With roughages	5 (62.5)	71 (79.77)	62 (81.57)	9 (52.94)	6 (60)	153 (76.5)
iii	Total	8 (100)	89 (100)	76 (100)	17 (100)	10 (100)	200 (100)

It was observed from Table 3, that, Crossbred cattle owners followed stall feeding were 49.5% and stall feeding plus grazing were 50.5% in all the categories as the supply of fodder is not adequate. More or less similar findings were also reported by, majority of the respondents (80%) followed stall feeding while (14%) allowed grazing. However, only 6 per cent of the respondents followed both the practices viz., stall feeding and grazing. This might be due to the lack of pasture land for grazing. Simul *et al.* (2012)^[15] also observed that, about 55.00 per cent, 14.03 per cent and 13.00 per cent of the farmers followed stall feeding, grazing and stall feeding with grazing respectively. The results are in a line with the result of present study.

3.1. Processing of concentrate before feeding (crushing, soaking, etc)

It involved from table no 3, out of 200 dairy owners from each type of land holding, this practice was adopted by medium, small, marginal, large, landless with 70.58 per cent, 56.57 per cent, 51.68 per cent, 50 per cent and 25 per cent respectively. The overall practice followed by Crossbred cattle owners were 52.5 per cent among 200 selected farmers.

3.2. Enrichment of poor quality straw by urea

It was observed from Table no 3, 20 per cent, 11.76 per cent, 1.31 per cent, 1.12 per cent of farmers from large, medium, small, marginal category adopted the process of enriching the poor-quality straws by urea before feeding to the milch animals. None of the landless adopted this practice. The constraints in non-adoption of this valuable recommendation reported by Crossbred cattle owners were lack of scientific knowledge and technical guidance were the major constraints in adopting this practice.

3.3. Chaffing of green and dry fodder before feeding

It was noticed from Table 3, out of 200 Crossbred cattle owners from each type of land holding, this practice of manually was adopted by large, medium, small, marginal and landless category of farmer with 10 per cent, 23.52 per cent, 85.52 per cent, 92.13 per cent and 100 per cent respectively. The overall adoption was 80.00 per cent. It was revealed from that, out of 200 Crossbred cattle owners each type of land holding, practice of electrically operator, chaff cutter was adopted by large, medium, small and marginal category of farmer with 90 per cent, 76.47 per cent, 14.47 per cent, 8.53 per cent respectively. The overall adoption was 20 per cent.

3.4. Feeding of green fodder

It is observed from Table no 3, out of the 200 Crossbred cattle owners in each category of landholding. Viz. large, medium, small, marginal and landless with 100 per cent, 88.23 per cent, 67.10 per cent, 59.55 per cent and 50 per cent respectively adopted feeding green fodder. The overall adoption of practice of feeding green fodder was 67.5 per cent as this is helpful in minimizing the cost of milk production. The present results are in conformity with the observation reported by Babu and Rao (2013)^[2] who observed that, all the farmers were feeding green fodder to their animals.

3.5 Feeding silage

It was observed from table 3, out of 200 Crossbred cattle owners in each category of land holding only small, medium and large farmers adopted this practice with 2.63 per cent, 11.76 per cent, 30 per cent respectively. Overall adoption of feeding silage in chalisgaon tehsil is only 3.5 per cent.

3.6 Feeding of dry matters @ 2 to 2.5 kg per 100 kg body weight of animals.

To fulfill the appetite of animal, it is necessary to feed animal with 2 to 2.5 kg dry matter per 100 kg body weight of animal. It is revealed that, overall 82.5 per cent of cattle owners were fulfill the requirement. Amongst the land holding groups (90%) large, (88.23%) medium, (82.89%) small, (80.89%) marginal and (37.5%) landless group livestock owners had followed the practices. It was noticed from Table 3 that overall, more than half of the cattle owners under the survey offered dry matter to their animals at the rate more than 2.5 kg per 100 kg body weight were observed by Chatterjee *et al.* (2012)^[3].

3.7 Feeding of concentrate @ 40 per cent of milk production

It was observed that from Table 3 and that, the adoption of this practice was highest in large cattle owners (70.00%) followed by small (68.42%), medium (64.70%), marginal (43.82%) and landless (37.5%) category of cattle owners. The overall adoption rate feeding concentrate according to milch production was 56.00 per cent. The cattle owners were utilizing cotton seed cake, cotton seed, bran, pulse chuni for preparation of home-made concentrate mixture. Similar results were reported by Babu and Rao (2013)^[2] who observed that 40.00 to 52.00 per cent cattle owners feeding premixed cattle feed and 43.00 per cent feeding feed ingredients.

3.8 Additional ration for pregnant animal

The pregnant animal should be given 1 to 1.5 Kg concentrate mixture during last trimester of pregnancy over and above the maintenance quota for the overall development of fetus. However, it was observed from Table 3 that, overall adoption of this practice was only 88.50 per cent. Considering the various categories of the cattle owners, the higher adoption of this practice was found in large cattle owners (100 per cent), followed by medium cattle owners (94.11 per cent), small cattle owners (89.47 per cent), landless cattle owners (87.5 per cent) and 85.39 per cent found in marginal cattle owner category of the farmers. The present trend of the result is in agreement with result reported by Kochewad *et al.* (2013)^[8] reported that 49.00 per cent of cattle owners provide concentrate mixture to the advanced pregnant animal.

3.9 Use of mineral mixture or mineral bricks

It was observed from Table 3, over all very few i.e., 21.5 per cent cattle owners used mineral mixture or mineral bricks. The mineral mixture or mineral bricks used by large cattle owners (60 per cent), medium cattle owners (47.05 per cent), and small cattle owners (22.36 per cent) and marginal cattle owners (13.48 per cent). This finding agreement with Mircha *et al.* (2012)^[12] who observed that, 46.50 per cent cattle owners used mineral mixture.

3.10 Feeding of unconventional roughages and concentrate during scarcity

It is observed from Table 3, out of 200 cattle owners 76.5 per cent adopted this practice. Among the land holding groups, the adoption of this practices by cattle owners was 30 per cent for large, 87.5 per cent for landless, 76.31 per cent for small, 35.29 per cent for medium and 88.76 per cent for marginal category of cattle owners.

3.11 Type of concentrate used

It was observed from Table 3, out of 200 crossbred cattle owners from each type of land holding homemade concentrate

were used by large (0.00%) followed by medium (0.00%), marginal (3.37%), small (5.26%) and landless group (12.4%) cattle owners. The overall homemade concentrates were used by 4 per cent cattle owners. While who used to purchase concentrates by marginal (82.62%) followed by small (80.26%), landless group (37.5%) large (20%) and medium (29.41%). The overall purchased concentrates were used by 72 per cent cattle owners. While cattle owners who used both homemade and purchased concentrates were by small group (14.47%), landless (50%), marginal (14.60%), medium (76.58%) and large (80%) category of cattle owners, the overall adoption of using homemade and purchased concentrates were 24 per cent cattle owners. These findings are in agreement with observations of Kochewad *et al.* (2013)^[8] reported that homemade (65.00%), purchased feed (20.00%) and both used (15.00%) feed to the cattle by cattle owners.

3.12 Feeding of concentrates mixture (separate or with roughages) as total mixed ration

In the present scenario total mixed ration system for feeding livestock has become increasing popular among dairy cattle owners. It was observed from Table 3, out of 200 Crossbred cattle owners from each type of land holding adopted by separate concentrate feeding by per cent, 40 per cent, 47.05 per cent, 18.42 per cent, 20.22 per cent and 37.5 of large medium, small, marginal and landless category of cattle owners respectively. The overall adoption was 23.5 per cent among 200 selected cattle owners. Similarly feeding of concentrate with roughages were adopted by 81.57, 79.77, 62.5, 52.94 and 60 per cent cattle owners from each type of land holding of small, marginal, landless, medium and large category of cattle owners respectively. The overall adoption was 76.5 per cent among 200 selected cattle owners. The present results are in conformity with the observation reported by Jadhav *et al.* (2014)^[6]. Who reported that feeding of concentrates separately 14.78 per cent and with roughages 85.22 per cent.

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