

**RESEARCH ARTICLE :**

Management practices adopted for cattle in sugarcane pockets of Nanded district

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SUMMARY : The present investigation entitled Management Practices adopted for Cattle in Sugarcane Pockets of Nanded district was undertaken to study the different package of practices followed for indigenous and crossbred cattle. Twenty villages of sugarcane pockets of Nanded district were selected with the objectives to determine existing management practices. The data was collected from the 200 respondents in four sugarcane pockets. The study revealed that the indigenous cattle is mostly used for the draft purpose. The populations of female are more than that of male one. Open and kaccha housing pattern was followed in almost all cases. Additional ration for pregnant animals were given by very few number of farmers. Cent per cent farmers adopted health and sanitation measures as cleaning of milking utensils, cleaning of hands and washing of udder before milking. Vaccination schedule was followed nearly about 93.00 per cent. There was very few farmers who adopted urea treatment and silage preparation. Practices of dehorning of calf does not adopted by any farmer.

KEY WORDS :

Cattle, Management practices, Sugarcane pockets

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BACKGROUND AND OBJECTIVES

Animal husbandry and dairy development play a prominent role in the rural economy supplementing the income of rural households, specially the landless, small and marginal farmers. It also provides subsidiary occupation in semi urban areas and particularly for the people living in hilly, tribal and drought prone areas and moreover where the output only may not sustain the family. Indian agriculture without livestock is inconceivable idea, along with crop improvement programme, there is urgent need of improvement of livestock as it

is considered as backbone of Indian agriculture. The dairy farming based on four pillars, viz., innovating breeding, appropriate feeding, excellent management and well supervised health care practices. These four factors greatly associated with milk marketing, infrastructure and education aspect of the dairy farmer.

The importance of cattle needs not to emphasized, as it provides milk to human being which makes human life healthier and comfortable. They also provides valuable organic manure to maintain the level of soil fertility and helps to minimize the requirement

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Table A : The selection of villages from sugarcane pocket area of Nanded district			
Sugarcane industry	Block	Name of village	Number of cases investigated
Bhaurao Chavan Co- operative Unit –I Yelgaon Tq- Ardhapur, Dist.- Nanded	B ₁ (Ardhapur)	Degaon (B)	10
		Yelgaon	10
		Barasgaon	10
		Yemsetwadi	10
		Pardi	10
Bhaurao Chavan Co- operative Unit –II Harsani, Tq- Hadgaon, Dist.- Nanded	B ₂ (Hadgaon)	Kankaewadi	10
		Sibdara	10
		Bamni	10
		Baradshevala	10
		Palsa	10
Bhaurao Chavan Co- operative Unit –III Wagalwada, Tq- Umri, Dist.- Nanded	B ₃ (Umri)	Bijegaon	10
		Hassa	10
		Singanapur	10
		Karegaon	10
		Wagalwada	10
Jai Shiv Shankar Co-operatives, Barhalli, Tq- Mukhed, Dist.- Nanded	B ₄ (Mukhed)	Hiperga (B)	10
		Savargaon (P)	10
		Ladga	10
		Savargaon Wadi	10
		Shirur	10

of inorganic fertilizers which avoids the further population hazards and also saves cost incurred on it. The farm by products like *Jowar*, maize, *Bajra* kadbi and cereals, pulses, straw are efficiently utilized and converted into useful material like milk, meat, and manure. In India cows are known as creator of power *i.e.* it provides bullocks for the draft purpose for performing agricultural operations which is the main source of energy particularly in India, where majority of farmers cannot afford to purchase the machinery like tractors and power tillers.

In order to study the various aspects of problem of dairy cattle farming, managerial practices followed by dairy farmers and giving suggestions or improved practices to farmers of Nanded district the present investigation entitled “Management Practices Adopted for Cattle in Sugarcane Pockets of Nanded district” was undertaken.

RESOURCES AND METHODS

Collection of data :

The Methodology adopted in this project as the data on cattles generated on farmers field were collected from different dairy farmers, especially who are rearing the cattle in Nanded district of Maharashtra state by multistage random sampling technique. For this the four

sugarcane industrial pockets *viz.*, Ardhapur, Hadgaon, Umri and Mukhed was randomly selected from Nanded district. Random selection of twenty villages was made from four selected sugarcane industrial pockets.

Ten numbers of cultivator farmers were randomly selected from each village. Thus, the total sample size comprised of 200 farmers.

Analysis of data :

The data collected were classified and tabulated as per the objective concerned and simple tabular analysis was followed for analyzing data, where the comparison was redundant only frequency and percentages were estimated (Panse and Sukhatme, 1967).

OBSERVATIONS AND ANALYSIS

The results obtained from the present study as well as discussions have been summarized under following heads:

Adoption of feeding and management practices :

Feeding practices :

It is observed from Table 1 that, the maximum number of farmers in all categories including landless used grazing + stall feeding (71.50%) and remaining

categories of respondents used stall feeding (28.50%). Supply of fodder was adequate in large farmers (91.42%), small farmers (86.66%), landless (87.50%) and marginal farmers (82.05%). Green fodder produced on own farm was noticed more in case of large farmers (100%), marginal farmers (82.74%) and small farmers (84.00%) than than the landless. It is also observed that 63.50 per cent of respondents were used as well for source of water, while 22.00 per cent were used river and 14.50 per cent used lake water as a source of water for livestock. Also urea treatment and silage preparation is more predominant in large farmers (*i.e.* 31.42% and 7.14%, respectively) than other categories of farmers.

Overall, 23.50 per cent respondents were adopt urea treatment and 6.50 per cent respondents makes silage. Fodder is principally grown in *Kharif* and *Rabi* season on rainwater, while it is grown in summer season, where ample quality of water is available. These present findings were supported by Rathore *et al.* (2010).

Feeds and fodder :

Fodder consists of stalk of *Jowar*, *Bajra*, maize and sugarcane tops that are tied in bundles, husk of pulses, leaves and stalks of pulse crops, groundnut straw and wheat straw etc. At many places jowar is grown principally for fodder wherever irrigation facilities are

Table 1 : Feeding practices adopted in different categories of farmers (n= 200)

Sr. No.	Component	Marginal farmers	Small farmers	Large farmers	Landless labourers	Per cent
1.	Feeding systems					
	Grazing					
	Stall Feeding	5 (12.82)	22 (29.33)	28 (40.00)	2 (12.50)	28.50
	Grazing + stall feeding	34 (87.17)	53 (70.66)	42 (60.00)	14 (87.50)	71.50
2.	Supply of fodder					
	Adequate	32 (82.05)	65 (86.66)	64 (91.42)	14 (87.50)	87.00
	Inadequate	7 (17.94)	10 (13.34)	6 (8.57)	2 (12.50)	13.00
3.	Source of green roughages					
	Produced on own farm	35 (89.74)	63 (84.00)	70 (100)	-	84.00
	Purchased	-	-	-	16 (100)	8.0
	Both	4 (10.25)	12 (16.00)	-	-	8.00
4.	Source of water					
	Well	29 (74.35)	52 (69.33)	46 (65.71)	-	63.50
	River	6 (15.38)	13 (17.33)	15 (21.42)	10 (62.50)	22.00
	Lake	4 (10.25)	10 (13.34)	9 (12.85)	6 (37.50)	14.50
5.	Urea treatment	7 (17.94)	18 (24.00)	22 (31.42)	-	23.50
6.	Silage preparation	1 (25.64)	7 (9.33)	5 (7.14)	-	6.50

Figures in parenthesis shows percentage of respective farmers

Table 2 : Feeds and fodder used in different categories of farmers (n = 200)

Sr. No.	Component	Marginal farmers	Small farmers	Large farmers	Landless labourers	Per cent
1.	Green fodder + dry fodder	6 (15.38)	19 (25.33)	16 (22.85)	4 (25.00)	22.50
2.	Green + Dry + concentrate + Mineral mixture	-	-	-	-	-
3.	Green fodder + Dry + concentrate	33 (84.61)	56 (74.67)	54 (77.15)	12 (75.00)	77.50
4.	Storage of fodder	34 (87.17)	63 (84.00)	70 (100)	14 (87.50)	90.50
	No storage of fodder	5 (12.83)	12 (16.00)	--	2 (12.50)	9.50
5.	Method of providing conc.	3 (7.69)	14 (18.66)	11 (15.71)	3 (18.75)	15.50
	Wet	36 (92.31)	61 (81.34)	59 (84.29)	13 (81.25)	84.50
6.	Provision of concentrate feed					
	With roughages	-	-	-	-	-
	Separately	39 (100)	75 (100)	70 (100)	16 (100)	100
7.	Additional ration for pregnant animal	4 (10.25)	6 (8.00)	2 (2.85)	-	6.00

Figures in parenthesis shows percentage of respective farmers

available. In addition to all these above mentioned, cakes of groundnut and cotton seed are also utilized as a feed for livestock.

It is observed from Table 3 that, the feeding of green fodder + dry fodder by marginal, small, large and landless to the extent of 15.38, 25.33, 22.85 and 25.00 per cent, respectively. Green + dry + concentrate + mineral mixture was not given to animal by all categories of respondents. Green + dry + concentrate was given as 84.61, 74.67, 77.15 and 75.00 per cent by marginal, small, large farmers and landless labourers, respectively. Storage of fodder was practiced by 84.00, 87.17, 87.50 and 100 per cent by small, marginal, landless and large farmers, respectively. Regarding method of feeding concentrate to animal, it was noticed from Table 3 that, majority of the respondents fed raw concentrate to their animals without soaking in water. Preparation of feeds as soaked and dry (raw) was practiced by marginal, small, large farmers and landless labourers as 7.69, 18.66, 15.71, 18.75 and 92.31, 81.34, 84.29, 81.25 per cent, respectively to their animals at the time of milking. Also no one can give concentrate feed material to the bull. It is also noticed that 6.0 per cent respondents gave additional ration to their pregnant animals. These findings are supported by the previous findings of Kumar *et al.* (1994).

Determination of existing management practices:

It is said that management is the art and science of combining idea, facilities, processes, materials and labour to produce and market a worth while product for service successfully.

In order to determine existing management practices

adopted by different categories of farmers were calculated by simple method of number of farmers adopted each management practice in each categories of farmers by percentage and frequency.

Distribution of farmers according to size of farm :

It is observed from Table 3 that 19.50 per cent of the respondents were marginal farmers, 37.50 per cent of the respondents were small farmers, 35.00 per cent of the respondents were large farmers, while 8.00 per cent of the respondents landless labourers, respectively.

Distribution of farmers according to number of cattle:

It is observed from Table 4 that 76.00 per cent of the farmers having less than 5 animals, 17.50 per cent respondents were 6 to 10 number of animals, while 2.50 per cent and 4.00 per cent of the respondents were possessing 11 to 15 and more than 15 animals, respectively on their farm.

Housing pattern :

The data on housing pattern used by the farmers is presented in Table 5, it is observed from Table 5 that the open housing pattern were adopted by marginal, small, large farmers and landless as 51.28, 84.00, 65.71 and 100 per cent, respectively whereas closed housing pattern were used by marginal, small, large farmers as 47.62, 37.32 and 41.67 per cent, respectively. The 87.50 per cent respondents having *Kaccha* house for their cattle, whereas 12.50 per cent respondents possess *Pucca* house for cattle. The 90.00 per cent of farmers having

Table 3 : Distribution of the farmers according to size of farm

Sr. No.	Category	B ₁	B ₂	B ₃	B ₄	Total	Per cent
1.	Marginal farmers (Upto 1 ha)	4	12	11	12	39	19.50
2.	Small farmers (1 to 2 ha)	23	11	18	23	75	37.50
3.	Large farmers (Above 2 ha)	20	22	17	11	70	35.00
4.	Landless Labourers	3	5	4	4	16	8.00
	Total	50	50	50	50	200	100.00

Table 4 : Distribution of farmers according to herd size

Sr. No.	No. of animals	B ₁	B ₂	B ₃	B ₄	Total	Per cent
1.	Upto 5	36	35	43	38	152	76.00
2.	6 – 10	12	9	4	10	35	17.50
3.	11- 15	1	2	1	1	5	2.50
4.	More than 15	1	4	2	1	8	4.00
	Total	50	50	50	50	200	100

separate cattle shed, 94.50 per cent respondents having cattle shade is well ventilated and pucca drain for urine is available in 12.50 per cent farmers cattle shed.

These findings are in the line with previous findings of Kumar *et al.* (2005).

Washing of cattle :

It is observed from Table 6 that, the washing of cattle were practiced in all categories of respondents. Majority of respondents wash their cattle's in fortnightly as 36.50 per cent followed by 29.00 per cent monthly, 26.50 per cent weekly and lastly 8.0 per cent daily except landless.

Health and sanitation :

It is observed that from Table 7, the cleaning of milking utensils, cleaning of hands before milking and washing of udder before milking were followed 100 per cent in all categories of respondents. While cleaning of shed were practiced by 82.06, 92.00, 98.58 and 12.50 per cent of marginal, small, large farmers and landless labourers, respectively. Vaccination programme was

followed by 89.75, 90.67, 100 and 81.25 per cent of marginal, small, large farmers and landless labourers. The testing of milk for mastitis were followed by less number of farmers *i.e.* 2.56, 5.33 and 2.85 per cent by marginal, small and large farmers, respectively. It observed that 6.00 per cent of respondents possess insurance of livestock, while 94.00 per cent respondent not possess any insurance of livestock. Artificial insemination technique was followed by 84.62, 86.67, 90.00 and 62.50 per cent of marginal, small, large farmers and landless labourers, respectively. Very few farmers groomed and washed their animals before milking.

These findings are in the line with previous findings of Sabapara *et al.* (2010); Prasad *et al.* (2008) and Dhimani *et al.* (1990).

Other dairy management practices :

The shed was maintained somewhat in clean condition as farmers remove dung during morning and evening hours. Most of the farmers offered the drinking water two times in a day to their animals. None of the farmers had practice of feeding compound feed or mineral

Table 5 : Housing pattern adopted by different categories of farmers

						(n = 200)
Sr. No.	Component	Marginal farmers	Small farmers	Large farmers	Landless labourers	Per cent
1.	Open cattle shed	20 (51.28)	63 (84.00)	46 (65.71)	16 (100)	72.50
	Closed cattle shed	19 (47.62)	12 (37.32)	24 (41.67)	-	27.50
2.	Kaccha floor	35 (89.74)	68 (90.67)	56 (80.00)	16 (100)	87.50
	Pucca floor	4 (14.29)	7 (10.45)	14 (16.67)	-	12.50
3.	Separate	34 (87.18)	71 (94.67)	64 (91.43)	11 (68.75)	90.00
	Part of residence	5 (12.82)	4 (5.33)	6 (8.57)	5 (31.25)	10.00
4.	Flooring					
	Kaccha	35 (89.74)	68 (90.67)	56 (80.00)	16 (100)	87.50
	Pucca	4 (14.29)	7 (10.45)	14 (16.67)	-	12.50
5.	Well ventilated	37 (94.88)	71 (94.67)	70 (100)	11 (68.75)	94.50
	Not ventilated	2 (5.12)	4 (5.33)	-	5 (31.25)	5.50
6.	Pucca drain for urine to drain out					
	Available	4 (14.29)	7 (10.45)	14 (16.67)	-	12.50
	Not available	35 (89.74)	68 (90.67)	56 (80.00)	16 (100)	87.50

Figures in parenthesis shows percentage of respective farmers

Table 6 : Washing of cattle adopted by different categories of farmers

Sr. No.	Component	Marginal farmers	Small farmers	Large farmers	Landless labourers	Per cent
1.	Daily	6 (15.38)	5 (6.66)	5 (7.14)	-	8.00
2.	Weekly	10 (25.64)	25 (33.34)	10 (14.28)	8 (50.00)	26.50
3.	Fortnightly	12 (30.78)	27 (36.00)	30 (42.86)	4 (25.00)	36.50
4.	Monthly	11 (28.20)	18 (24.00)	25 (35.72)	4 (25.00)	29.00
	Total	100	100	100	100	100

Figures in parenthesis shows percentage of respective farmers

mixture to their animal nearly about maximum owners adopted chaffing of the dry roughages before feeding and only few owners using tree leaves in scarcity period.

The veterinary facilities were not available in most of the villages. However the bulls are used for giving the natural service to the cow. Any non-descript bull available in the village was allowed to serve the cow. Majority of farmers mating their cow at right time.

The practice of dehorning of calf was not followed by any respondent. Also there very few farmers who undertake insurance of the livestock. Majority of farmers

followed sucking method for rearing of calf.

Constraints faced by cattle owners :

From Table 8 it is observed that the majority of problem faced by farmers was inadequate availability of the green fodder (58.50%). This was more in case of landless followed by, small farmer, marginal farmers and large farmers. Another major problem encountered by respondents was lack of credit facilities for purchasing good quality cattle's. The 64.00 per cent of respondents faced the problem of effect of high prices of fodder on

Sr. No.	Component	Marginal farmers	Small farmers	Large farmers	Landless labourers	Per cent
1.	Cleaning of milking utensils	39 (100)	75 (100)	70 (100)	16 (100)	100
2.	Cleaning of sheds	32 (82.06)	69 (92.00)	69 (98.58)	2 (12.50)	86.00
	Cleaning of sheds not practices	7 (17.94)	6 (8.00)	1 (1.42)	14 (87.50)	14.00
3.	Cleaning of hand before milking	39 (100)	75 (100)	70 (100)	16 (100)	100
4.	Washing of udder before milking	39 (100)	75 (100)	70 (100)	16 (100)	100
5.	Vaccination followed	35 (89.75)	68 (90.67)	70 (100)	13 (81.25)	93.00
	Vaccination not followed	4 (10.25)	7 (9.33)	-	3 (18.75)	7.00
6.	Testing for mastitis	1 (2.56)	4 (5.33)	2 (2.85)	-	3.50
	Not tested for mastitis	38 (97.44)	71 (94.67)	68 (97.15)	16 (100)	96.50
7.	Insurance of livestock	-	5 (6.66)	7 (10.00)	-	6.00
	No insurance of livestock	39 (100)	70 (93.34)	63 (90.00)	16 (100)	94.00
8.	A.I. technique followed	33 (84.62)	65 (86.67)	63 (90.00)	10 (62.50)	85.50
	Not A.I. technique followed	6 (15.38)	10 (13.33)	7 (10.00)	6 (37.50)	14.50

Figures in parenthesis shows percentage of respective farmers

Sr. No.	Constraints	Marginal farmers	Small farmers	Large farmers	Landless labourers	Per cent
Feeding constraints						
1.	Inadequate availability of green fodder	28 (71.79)	49 (65.33)	24 (34.28)	16 (100)	58.50
2.	Effect of high cost of fodder on its supply	31 (79.48)	54 (72.00)	27 (38.57)	16 (100)	64.00
3.	Use of silage and urea treatment to dry fodder	29 (74.35)	49 (65.33)	24 (34.28)	16 (100)	59.00
4.	Inadequacy of own grazing land	31 (79.48)	48 (64.00)	7 (10.00)	16 (100)	51.00
5.	Use of antibiotics and mineral mixture in feed	23 (58.97)	37 (49.33)	27 (38.57)	12 (75.00)	49.50
Production and marketing constraints						
6.	Irregular milking of cow	5 (12.82)	7 (9.33)	4 (5.71)	7 (43.75)	11.50
7.	Low rate of milk	35 (89.74)	64 (85.33)	59 (84.28)	16 (100)	87.00
8.	Availability of credit for purchasing animals	32 (82.05)	68 (90.66)	34 (48.57)	16 (100)	75.00
9.	Comfortless of animal in summer season	33 (84.61)	57 (76.00)	27 (38.57)	16 (100)	66.50
Technical constraints						
10.	Availability of veterinary care hospital	4 (10.25)	22 (29.33)	23 (32.85)	3 (18.75)	26.00
11.	Artificial insemination	6 (15.38)	10 (13.33)	7 (10.00)	6 (37.50)	14.50
12.	Knowledge about sterilization of cattle shed	34 (87.17)	69 (92.00)	62 (88.57)	16 (100)	90.50
13.	Non-availability of labour	37 (94.87)	69 (92.00)	59 (84.28)	-	82.50

Figures in parenthesis shows percentage of respective farmers

its supply. While 51.00 per cent respondents faced problem of inadequacy of grazing land. Whereas 59.00 per cent of respondents were not known the knowledge regarding the making of silage and urea treatment to dry fodder use of mineral mixture and antibiotics in feed *i.e.* 49.50 per cent.

In case of production and marketing constraints, 75.00 per cent respondents had faced the problem of availability of credit for the purchasing of animals. 87.00 per cent respondents faced the problem of low rate of milk. While 11.50 per cent faced the problem of irregular milking of the cow. As the summer temperature is higher, 66.50 per cent of respondent faced the problem of comfortless in summer season.

In case of technical constraints 90.50 per cent of the farmers have lack of knowledge about sterilization of the cattle shed. The problem of availability of labour was faced by 82.50 per cent respondents. In case of veterinary care hospital 26.00% of respondents faced the problem. Whereas 14.50 per cent had faced problem of artificial insemination. These findings are in the line with Kulkarni *et al.* (1990) and Tomar and Thakur (2002).

Conclusion :

It is concluded from the present study that the maximum cattle owners reared indigenous cattle (91.55%) and crossbred cattle (08.45%). The selected farmers reared maximum female cattle (56.46%) as compared to male (35.09%). Grazing + stall feeding (71.50%) was adopted by majority of farmers whereas, stall feeding (28.50%) adopted by rest of the farmers to their cattle. The majority of farmers (87.00%) offered fodder adequate whereas, (13.00%) farmers offered inadequate fodder to their cattle. Green + dry fodder + concentrates (77.50%) were practiced by most of the farmers. Housing of cattle in open shed (72.50%) was adopted by most of the farmers whereas, under closed shed (27.50%) was adopted by rest of the farmers for their cattle. The *Kaccha* floor (87.50%) was observed in most of the cattle shed whereas, *Pucca* floor (12.50%) was observed in rest of the cattle shed in surveyed area. Housing of cattle shed at separate place was adopted (90.00%) by the farmers whereas, a part of residence (10.00%). Cleaning of milking utensils, cleaning of hands before milking and washing of udder before milking were 100 per cent in all categories of farmers including landless. Vaccination schedule is followed nearly about

93.00 per cent of farmers. Cleaning of sheds practiced by marginal, small, large farmers including landless as 82.06, 92.00, 98.58, and 12.50 per cent, respectively. It is also observed that 94.00 per cent respondents does not have insurance of livestock. Also most of farmers adopt A.I. technique (85.50%) rather than natural service for inseminating the cows. Most of farmers met their animals at right time. No one can applied dehorning treatment to their calves. In feeding practices, all farmers including landless labourers used grazing + stall feeding (71.50%). Cultivated green fodder was more in large farmers (100%) and marginal farmers (89.74%) than small farmers (84.00%). However, urea treatment and silage preparation were followed by very less number of the respondents. The inadequate availability of green fodder (58.50%), production and marketing low rate of milk (87.00%), technical knowledge about sterilization of shed (90.50%) were the constraints in study area.

Hence, it may be concluded that there is need to demonstrate scientific feeding and management practices with replacing low cost feed ingredients and locally available for feeding of indigenous and crossbred cattle for exploiting optimum milk production.

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