

## KNOWLEDGE LEVEL OF DAIRY FARMERS REGARDING SCIENTIFIC DAIRY HUSBANDRY PRACTICES

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### ABSTRACT

The present study was conducted in Amreli district of Gujarat to ascertain the knowledge level of different scientific dairy management practices by livestock owners. Total 300 livestock owners selected randomly from five different talukas of the district were interviewed to get the various data regarding dairy husbandry practices. Among the different aspects of feeding, housing and milking management practices, livestock owner had quite high knowledge in supply of green fodder (100 per cent), dry fodder (98.67 per cent), practice of stall feeding (96.33 per cent), well ventilation in animal house (97.33 per cent), levelled floor (95.67 per cent), separate feed and fodder storage room for concentrate/roughage (95.33 per cent), cleaning of milk utensil with detergent washing and sun drying (98.33 per cent), kind behaviour and practice of grooming with milking animal (97.33 per cent) whereas, low level of knowledge found in feeding mineral mixture (40.33 per cent), feeding salt (34.33 per cent), east-west long axis of house (9.67 per cent), cleaning and dipping of udder and teats just after milking (39.67 per cent), before milking with antiseptic (38.33 per cent), full hand milking (38.00 per cent). As regards to healthcare and breeding management, livestock owners had high level of knowledge in practices to control ecto-parasites (83.33 per cent), vaccination of animal (73.00 per cent), symptoms to detect sexual-heat (97.33 per cent), use of proven bull for natural service (83.00 per cent), pregnancy diagnosis by veterinary doctor (82.00 per cent) and waiting for placental expulsion up to 12 hours (81.33 per cent). Further, the livestock owners had low level of knowledge in grooming of animals (58.67 per cent), treatment of sick animal by veterinary doctor (44.00 per cent), emphasis given to male for improvement of breed/productivity (51.00 per cent) and initiation of breeding of heifers on the basis of body weight/size (40.67 per cent).

**Keywords:** feeding, breeding, milking, healthcare, breeding, knowledge

### INTRODUCTION

Amreli is one of the important districts in the north-saurashtra region of Gujarat. Dairy husbandry plays major role in development of particular region through self employment, boosting up farmers' income along with nutritional security of their family. In spite of the fact that Amreli district has large population of well-known milch breed of Indian bovine (Gir cattle and Jaffrabadi buffalo), average productivity of livestock is low. Feeding management along with housing management and milking management practices have significant role in exploiting real potential of dairy animals (Sinha *et al.*, 2009, Singh and Gupta, 2015, Bhabhor *et al.*, 2020). Dairy animals fail to prove their genetic potential for higher production when fed at low level, sub-optimum housing management and unhygienic milking practices.

Understanding of dairy animal practices in a region is necessary to identify the strengths and weaknesses of rearing system and formulate suitable intervention system. Therefore, it is imperative to ascertain the knowledge about

scientific management practices followed by dairy animal owners.

### OBJECTIVE

To ascertain the knowledge level of different scientific dairy husbandry practices among livestock owners

### METHODOLOGY

The present study was conducted in Amreli district. The livestock farmers, 20 per village, in pre-decided 3 villages in each of 5 talukas were selected from Amreli district. Ex-post facto research design was applied for this study. The data was collected through the personal interview and desired information for different management practices was collected from dairy farmers with the help of pre-designed questionnaire.

Feeding, housing, milking, healthcare and breeding management practices followed by dairy farmers were surveyed in three villages of each of following talukas of

Amreli district.

Sr. No.	Name of taluka	Name of village	No. of dairy farmers
1	Kukavav	Najapur, Nava Ujda, Jangar	20 per village
2	Khambha	Khadadhar, Raydi, Ingorala	20 per village
3	Lathi	Bhurakhiya, Toda, Asodar	20 per village
4	Babra	Bhiladi, Charkha, Vandaliya	20 per village
5	Amreli	Chital, Vankiya, Chakkargadh,	20 per village
<b>Total</b>	<b>5 Nos.</b>	<b>15 Nos.</b>	<b>300 Nos.</b>

The knowledge of dairy farmers regarding different scientific management practices was interviewed and recorded as Yes or No and percentage was work out for each knowledge and overall ranks were assigned on the basis of percentage.

## RESULTS AND DISCUSSION

### Knowledge of livestock farmers regarding different scientific dairy husbandry practices:

The results of the study on different scientific dairy husbandry practices like feeding management, housing management, milking management and healthcare management and breeding management are discussed hereunder.

#### Feeding management

Data presented in table-1 show that among different feeding management practices, 100 per cent of respondents had knowledge about supply of green fodder and free access of drinking water and ranked I, followed by supply of dry fodder (98.67 per cent), practices of stall feeding (96.33 per

cent), use of pelleted concentrates mixture (94.33 per cent), special feeding (calving mixture) after calving (91.00 per cent), feeding based on production (85.67 per cent), feeding of extra conc. to advanced pregnant animal (85.33 per cent), chaffing of fodder (76.00 per cent), Individual feeding of milch animals (71.67 per cent), supply of mixed (Legume + Cereal) fodder (63.00 per cent), feeding colostrum to new born calf before expulsion of placenta (53.00 per cent), feeding mineral mixture (40.33 per cent) and feeding salt (34.33 per cent) ranked II, III, IV, V, VI, VII, VIII, IX, X, XI, XII and XIII, respectively. The probable reason might be due to lack of adequate information regarding importance of nutrients in production and reproduction, value of colostrum feeding to new born calf and chaffing of fodder reduces selectivity of fodder in addition to decrease in wastage of fodder. Among the different practices, Gunaseelan, (2018) reported similar findings in additional concentrates feed to pregnant cows/buffaloes, correct time to colostrum feeding to newborn calf, drinking water offered to dairy animals and lower level of knowledge in offering dry fodder to dairy animals in Tamilnadu state whereas, higher level of knowledge in feeding of colostrums to calf reported by Mali, (2014).

**Table 1 : Distribution of respondents according to their knowledge regarding feeding management practices (n=300)**

Sr. No.	Knowledge	Frequency	Percent	Rank
1	Practices of stall feeding	289	96.33	III
2	Individual feeding of milch animals	215	71.67	IX
3	Supply of green fodder	300	100.00	I
4	Supply of mixed (Legume + Cereal) fodder	189	63.00	X
5	Supply of dry (Lucerne /Jowar hay /Gotar) fodder	296	98.67	II
6	Use of pelleted concentrates mixture	283	94.33	IV
7	Feeding based on Production	257	85.67	VI
8	Chaffing of fodder	228	76.00	VIII
9	Feeding of extra conc. to advanced pregnant animal	256	85.33	VII
10	Feeding salt	103	34.33	XIII
11	Feeding mineral mixture	121	40.33	XII
12	Special feeding (calving mixture) after calving	273	91.00	V
13	Free access of drinking water	300	100.00	I
14	Feeding colostrum to new born calf before expulsion of placenta	159	53.00	XI

## Housing management

Perusal of data on housing management in table-2 show that 97.33 per cent of respondents had knowledge about ventilation in animal house ranked I followed by levelled floor (95.67 per cent), separate feed and fodder storage room for concentrate/ roughage (95.33 per cent), provision and practice to protect animal from extreme weather (bedding/curtain) (94.67 per cent), cleanliness of house (94.00 per cent), provision of water through pucca watering trough (92.33 per cent), slope of floor toward back (89.67 per cent), provision of pucca manger (89.00 per cent), distant location of manure pit (88.33 per cent), pucca wall (87.33 per cent),

surrounding wall (75.67 per cent), provision of urine drain/gutter (71.33 per cent), use of disinfectant in house (69.33 per cent), provision of R.C.C. roof (61.33 per cent), pucca floor (60.00 per cent) and east-west long axis of house (9.67 per cent) ranked II, III, IV, V, VI, VII, VIII, IX, X, XI, XII, XIII, XIV, XV and XVI, respectively. The probable reason behind this might be low number of livestock holding by the farmers so they depend on only their indigenous knowledge of housing management. Kaur, (2017) reported the similar findings in cleanliness and disinfection of animal shed in border area of Punjab. Knowledge regarding distant location of manure pit from animal shed is in line with the finding of Bhise, (2018).

**Table 2 : Distribution of respondents according to their knowledge regarding housing management practices (n=300)**

Sr. No.	Knowledge	Frequency	Percent	Rank
1	East-west long axis of house	29	09.67	XVI
2	Pucca floor	180	60.00	XV
3	Levelled floor	287	95.67	II
4	Slope of floor toward back	269	89.67	VII
5	Provision of R.C.C. roof	184	61.33	XIV
6	Surrounding wall	227	75.67	XI
7	Pucca wall	262	87.33	X
8	Provision of pucca manger	267	89.00	VIII
9	Provision of water through pucca watering trough	277	92.33	VI
10	Provision of urine drain/gutter	214	71.33	XII
11	Cleanliness of house	282	94.00	V
12	Provision and practice to protect animal from extreme weather: bedding/curtain	284	94.67	IV
13	Well ventilated house	292	97.33	I
14	Use of disinfectant in house	208	69.33	XIII
15	Distant location of manure pit	265	88.33	IX
16	Separate feed and fodder storage room (Concentrate/ roughage)	286	95.33	III

## Milking management

As evident from the table-3 on milking management practices, 98.33 per cent of respondents had knowledge about cleaning of milk utensil with detergent washing and sun drying ranked I followed by kind behaviour and practice of grooming with milking animal (97.33 per cent), calm environment of milking place (92.33 per cent), allow calf for let-down of milk (91.33 per cent), never change of milker (78.33 per cent), stripping at the end of milking (76.33 per cent), milking at separate place and dry place (70.00 per cent), completion of milking within 5 minute per animal (64.67 per cent), clean narrow mouthed milking pail (59.67 per cent), washing hand with antiseptic before milking (55.67 per cent), washing/bathing of animal before milking (55.33 per cent), wet hand milking with water (49.00 per cent), intermittent method of drying an animal (47.67

per cent), cleaning and dipping of udder and teats just after milking (39.67 per cent), cleaning udder and teats before milking with antiseptic (38.33 per cent), full hand milking (38.00 per cent) and ranked II, III, IV, V, VI, VII, VIII, IX, X, XI, XII, XIII, XIV, XV and XVI, respectively. This indicates that most of the livestock farmers are not aware of prevention of mastitis and udder infection. Contradictory results reported in term of full hand milking by Singh, (2020) and Kaur, (2017) in which they found 84 per cent and 56 per cent livestock owner have knowledge of full hand milking method. Kaur, (2017) reported higher level of knowledge regarding cleaning udder and teats before milking and lower level of knowledge regarding timing of completion of milking. In case of cleaning of milk utensil with detergent washing and sun drying and kind behavior and grooming practice with milking animal, parallel results were reported by Bhise, (2018).

**Table 3 : Distribution of respondents according to their knowledge regarding milking management practices**

(n=300)

Sr. No.	Knowledge	Frequency	Percent	Rank
1	Milking at separate place and dry place	210	70.00	VII
2	Calm environment of milking place	277	92.33	III
3	Kind behaviour and grooming practice with milking animal	293	97.33	II
4	Full-hand milking	114	38.00	XVI
5	Stripping at the end of milking	229	76.33	VI
6	Wet hand milking with water	147	49.00	XII
7	Cleaning udder and teats before milking with antiseptic	115	38.33	XV
8	Washing/Bathing of animal before milking	166	55.33	XI
9	Washing hand with antiseptic before milking	167	55.67	X
10	Never change of milker	235	78.33	V
11	Clean narrow mouthed milking pail	179	59.67	IX
12	Allow calf for let-down of milk	274	91.33	IV
13	Cleaning of milk utensil with detergent washing and sun drying	295	98.33	I
14	Cleaning and Dipping of teats just after milking	119	39.67	XIV
15	Completion of milking within 5 minute per animal	194	64.67	VIII
16	Intermittent method of drying an animal	143	47.67	XIII

**Health care management**

With respect to results on various measure practices under healthcare management as furnished in table-4, 83.33 per cent of respondents had knowledge about practices to control ectoparasites ranked I followed by vaccination of animal (73.00 per cent), colostrum offered to new born calf within an hour (67.67 per cent), disinfection of animal shed (63.33 per cent), deworming of calves (63.00 per cent), isolation of sick animals (61.00 per cent), navel disinfection of calf (60.67 per cent), grooming of animals

(58.67 per cent) and treatment of sick animal by veterinary doctor (44.00 per cent) ranked II, III, IV, V, VI, VII, VIII and IX respectively. This might be due to most of the livestock owner had no information of registered veterinary practitioner, importance of calf deworming and segregation of sick animal from healthy herd to prevent the spread of contagious disease. Similar results for vaccination of animals, disinfection of animal sheds and control of ectoparasites have been reported by Kavithaa, (2020). While higher level of knowledge for navel disinfection have been reported by Bhise, (2018).

**Table 4 : Distribution of respondents according to their knowledge regarding health care management practices**

(n=300)

Sr. No.	Knowledge	Frequency	Percent	Rank
1	Isolation of sick animals	183	61.00	VI
2	Treatment of sick animal by veterinary doctor	132	44.00	IX
3	Vaccination of animal	219	73.00	II
4	Deworming of calves	189	63.00	V
5	Navel disinfection of calf	182	60.67	VII
6	Disinfection of animal shed	190	63.33	IV
7	Practices to control Ectoparasites	250	83.33	I
8	Grooming of animals	176	58.67	VIII
9	Colostrum offered to new born calf within an hour	187	67.67	III

### Breeding management

It is evident from data on breeding management in table-5 that 97.33 per cent of respondents had knowledge about symptoms to detect sexual-heat ranked I followed by use of proven bull for natural service (83.00 per cent), pregnancy diagnosis by veterinary doctor (82.00 per cent), waiting for placental expulsion up to 12 hours (81.33 per cent), breeding records (76.33 per cent), insemination/mating of animal after heat detection within 12 to 18 hours (74.00 per cent), breeding of animals thorough A.I. (73.67 per cent), pregnancy diagnosis after 3 months of breeding (73.33 per cent), artificial insemination by veterinary doctor (69.00 per cent), calving interval in cows (< 14 months) (63.00 per cent), calving interval in buffaloes (< 15 months) (56.67 per

cent), breeding after 2 to 3 months of calving (53.67 per cent), emphasis given to male for improvement of breed/productivity (51.00 per cent), initiation of breeding of heifers on the basis of body weight/size (40.67 per cent) and ranked II, III, IV, V, VI, VII, VIII, IX, X, XI, XII, XIII and XIV, respectively. It indicated that most of dairy farmers had lack of awareness regarding role of elite bull in breed improvement, early pregnancy diagnosis and post-partum sexual health care and breeding to obtain optimum service period of 5 to 6 months in indigenous cattle and buffaloes. Parallel findings were reported in symptoms of heat detection and right time of artificial insemination whereas, higher knowledge reported in breeding after calving and pregnancy diagnosis after breeding in South-India by Gunaseelan, (2018) and Mali, (2014).

**Table 5 : Distribution of respondents according to their knowledge regarding breeding management practices**

(n=300)

Sr. No.	Knowledge	Frequency	Percent	Rank
1	Emphasis given to male for improvement of breed/productivity	153	51.00	XIII
2	Symptoms to detect sexual-heat (vaginal discharge + other symptoms)	292	97.33	I
3	Breeding of animals thorough A.I.	221	73.67	VII
4	Proven bull for natural service	249	83.00	II
5	Initiation of breeding of heifers on the basis of body weight/size	122	40.67	XIV
6	Breeding after 2 to 3 months of calving	161	53.67	XII
7	Breeding of animal after heat detection within 12-18 hrs	222	74.00	VI
8	Artificial insemination by veterinary doctor	207	69.00	IX
9	Breeding records	229	76.33	V
10	Waiting for placental expulsion up to 12 hours	244	81.33	IV
11	Pregnancy diagnosis by veterinary doctor	246	82.00	III
12	Pregnancy diagnosis after 3 month of breeding	220	73.33	VIII
13	Calving interval in cows (< 14 months)	189	63.00	X
14	Calving interval in Buffaloes (< 15 months)	170	56.67	XI

### Overall knowledge of different scientific dairy management

The data tabulated in table-6 about overall knowledge of scientific dairy management practices indicated that majority of respondents 64.67 per cent had medium level of knowledge whereas, 20.00 per cent and 15.33 per cent of them had high and low level of knowledge regarding different scientific dairy management. Similarly Sharma, (2009)

reported 58.75 per cent and 20.00 per cent overall knowledge of different scientific dairy management practices. This might be due to the fact that majority respondents were uneducated or had primary education and they come under old and middle age group of farmers, who were not interested in knowing scientific practices of dairy. Interest of dairy women regarding dairy in operation area decreasing day by day and men have main focus on their agriculture farming.

**Table 6 : Distribution of respondents according to their knowledge of different scientific dairy management practices** (n=300)

Sr. No.	Knowledge level	No.	Per cent
1	Low level of knowledge (score value Up to 40)	46	15.33
2	Medium level of knowledge (score value 40 to 58)	194	64.67
3	High level of knowledge (More than 58)	60	20.00
Mean=49.45		SD=9.05	

**CONCLUSION**

Based on findings of present study, it can be concluded that had medium level of knowledge regarding the different aspects of scientific management practices. There is massive chance for the improvement in the knowledge of the dairy farmers. Livestock owners of Amreli district keeping dairy bovines are advised to give emphasis on practices viz., feeding of salt and mineral mixture, cleaning of udder and teats before milking with antiseptic, milking with full-hand method, navel disinfection of newborn calf and initiation of breeding of heifers on the basis of body weight/size in their routine dairy management practices. Further, for effective transfer of livestock management practices in Amreli district, regular exhibitions, awareness campaign, radio talks and animal camp should be organized throughout-reach centre like Krishi Vigyan Kendra’s, FTCs, State line department of Animal Husbandry and other para extension to increase the know-how of the dairy practices.

**POLICY IMPLICATION**

Based on the findings of the study it can be recommended that there is vast scope to improve knowledge of dairy farmers about improved animal husbandry practices. Government should focused on training programmes, demonstrations, field days, exhibitions, camps, radio/TV talks, message through ICT tools at grass root level. There is need to strengthen para extension worker at village level specially trained for animal husbandry practices.

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**CONFLICT OF INTEREST**

No conflict of interest

**REFERENCES**

Bhabhor, I. N., Vyas, H. U. and Patel, N. R. (2020). Knowledge of livestock farmers about various zoonotic diseases. *Guj. J. Ext. Edu.* 31(1):92-94.

Bhise, R. N., Gaikwad, D. S., Shete, P. P. and Kadam, J. R. (2018). Knowledge of dairy farmers about recommended dairy management practices. *Plant Arch.* 18 (1);867-874.

Gunaseelan, M., Thilakar, P., Mathialagan P. and Serma S. P. A. (2018). Knowledge Level of Scientific Dairy Farming Practices among Peri-Urban Dairy Farmers in Thanjavur District of Tamil Nadu. *Indian Vet. J.* 95(02);14 – 18.

Kaur, S., Verma, H. K., Singh, J., Dash, S. and Kansal, S. K. (2017). Knowledge Level of Women Dairy Farmers about Various Farming Practices in Border Area of Punjab. *Journal of Ani. Res.* 7(6); 1051-1059.

Kavithaa, N. V., Rajkumar, V. N. and Manokaran, S. (2020). Knowledge level of dairy farmers in improved dairy farming practices. *International J. of Sci., Envir. and Tech.* 9(3); 493 – 499.

Mali, K. N., Belli, R. B. and Guledagudda, S. S. (2014). A study on knowledge and adoption of dairy farmers about improved dairy management practices. *Agric. Update.* 9(3); 391-395.

Sharma, K. S., Singh, P. and Yadav, V. P. S. (2009). Knowledge of Dairy Farmers about Improved Buffalo Husbandry Management Practices. *Indian Res. J. Ext. Edu.* 9(3); 51-54.

Singh, B., Mahajani, K. and Meena, K. C. (2020). Knowledge of improved dairy husbandry practices of farmers of Kauroli, district of eastern Rajasthan. *Journal of Agri and Eco.* 9;48-54.

Singh, V. and Gupta, J. (2015). Analysis of knowledge and adoption level of the dairy farmers regarding clean milk production (CMP) practices. *Asian J. of Dairy & Food Res.* 34; 180–186.

Sinha, R. R. K., Dutt, T., Singh, R. R., Bhushan Bharat, Singh Mukesh and Kumar Sanjay. (2009). Feeding and housing management practices of dairy animals in Uttar Pradesh. *Indian J. of Ani. Sci.* 79(8); 829–33.

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