J. Soils and Crops 28 (1) 102-107, June 2018

ISSN 0971-2836
NAAS Rating - 4.46
Scientific Journal Impact Factor (2017) 4.338

# FEEDING AND MANAGEMENT PRACTICES FOLLOWED BY CATTLE OWNERS UNDER VILLAGE CONDITIONS OF GADCHIROLI TAHSIL

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## ABSTRACT

**The present investigation was carried around Gadchiroli tahsil during the year 2016-2017, to study the various dairy farming practices adopted by cattle under field condition. Five villages viz., Wasa, Khaprundi, Pulkhal, Kaneri and Wakdi were randomly selected. The information on feeding management, housing pattern, health and sanitation and breeding aspects were collected by contracting with 125 cattle owners. Few scientific recommendations in feeding were adopted by majority of cattle owners. The results revealed that the scientific feeding practices like balanced ration at regular interval, enrichment of poor quality roughages by urea, ammoniation and molasses, feeding at least 5 kg green fodder, feeding of concentrated @ 40 per cent of milk production, use of 60 g common salt, mineral mixture and mineral bricks were not adopted by majority of the (more than 75%) cattle owners. However, majority of the farmers belonging to the category 1-3 cattles owners (71.66%) and 4-6 cattles owners (74.28%) adopted feeding of dry, green and concentrate in required proportion. Most of the cattle owners adopted the feeding practices like processing of roughages and concentrate (79.20%), feeding of dry matter 2-2.5 kg $100^{-1}$ kg body weight (73.60%) and inclusion of agro-industrial byproduct like turchunni, bran etc. (63.20%) . Thus, the results revealed that there is wide scope of improvement in the adoption of scientific feeding practices by educating them properly. However, with regards to traditional, improved and recommended housing pattern majority of cattle owners adopted open shed (79.00%), kaccha (87.00%), part of residence (94.00%),flooring of kaccha (79.00%) and non-available of urine to drain out (98.00%) in all kinds of housing pattern.Health and sanitation measures such as washing of udder before milking, cleaning of milking utensils, cleaning of shed and grooming of cattle were adopted by 67.20% cattle owners. Similarly, most of the cattle owners (97.60%) adopted vaccination. Most of the cattle owners (88.80%) adopted artificial insemination method for breeding in the study area. Only 11.20% cattle owners adopted natural service for breeding. It indicates that there is need to organize training programmes and demonstrate scientific feeding and management practices which help to increase in the rate of adoption of scientific recommended dairy farming practices at farm level.**

**(Key words: Scientific feeding practices, housing pattern, health and sanitation, breeding methods)**

## INTRODUCTION

Animal husbandry is an integral components of agriculture supporting livelihood of more than two-thirds of the rural population.India rank first in cattle and buffalo population. The survey says that female cattle population has increased by 6.52 per cent over previous census (2007) and total number of female cattle in 2012 is 122.9 million numbers. Exotic crossbred milch cattle population has 19.42 millions (Annonymous, 2012). The per capita availability of milk in India has increased from 176 g day in 1990-91 to 322 day by 2014-2015. It is more than the world average of 294 g $day^{-1}$ during 2013 (Anonymous, 2015). This represent a sustained growth in availability of milk and milk products for the growing population.

In dairy technologies encompass the use of crossbred animals, improved feed technology and improved management (Mohamed *et al*., 2004). The effect of several technical (breed, A.I., vaccination etc.) and socio demographic factors would be beneficial to improve the dairy production, understanding the factors affecting farmers adoption of dairy farming practices is critical to success of development and implementation of policies and programs in dairy industry development. Furthermore, improved management practices should be adopted for considerable dairy development.

With this consideration the present study entitled feeding and management practices followed by cattle owners under village conditions of Gadchiroli tahsil, Dist. Gadchiroli

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(M.S.) planned to suggest suitable intervention in existing feeding system.

# MATERIALS AND METHODS

The study was carried out around Gadchiroli tahsil during the year 2016 – 17. Five villages viz., Wasa, Khaprundi, Pulkhal, Kaneri and Wakdi were randomly selected. The information on dairy farming practices was obtained from the cattle owners through personal interaction with the help of questionnaire from selected villages for the study.The list of 25 cattle owners was prepared for each village with the help of gramsevak and livestock development officer of Panchayat Samiti. These cattle owners were contacted from each village and accordingly total cattle owners contacted were 125.

The data with regards to various aspects of study such as land holding, cropping pattern, cattle owners, availability of feed and fodders, grazing facilities, milk yield, routine management practices, availability of shed, number of milch animals and availability of veterinary facility etc. were collected. These data were tabulated carefully. To study the recommended scientific feeding practices aspects, the data were categorized on the basis of size of herd of cattles in the following groups.

1. 1 to 3 cattles 2. 4 to 6 cattles

3. 7 to 10 cattles 4. Above – 10 cattles

The data collected in respect of above parameters were tabulated and analyzed statisticallyby using appropriate method to ascertain the objective under study.

# RESULTS AND DISCUSSION

**Adoption of scientific feeding practices**

Data regarding adoption of recommendations regarding scientific feeding by various categories of cattle owners are presented numerically in table 1.

It is revealed from table 1 that among the scientific feeding practices majority of the cattle owners from all categories did not adopt most of the feeding practices such as feeding of balanced ration at regular interval, enrichment of poor quality roughages by urea, ammoniation and molasses, feeding at least 5 kg green fodder, feeding of concentrate @ 40 per cent of milk production, use of 60 g common salt, mineral mixture and mineral bricks and feeding concentrate mixture @ 1 to 1.5 kg. to pregnant cattles.

The highest level of adoption of feeding of dry, green and concentrates in required proportion was done by the cattle owners of 1-3 cattles category (71.66%) followed by category of 4-6 cattle owners (74.28%), 7-10 cattle owners (42.10%) and above 10 cattle owners (36.36%), respectively. Processing of roughages and concentrate before feeding, chaffing/water soaking was adopted at the highest level by the 1-3 cattle owners (93.33%) followed by 4-6 cattle owners (85.71%) and above 10 cattle owners (63.63%). However, only 31.57% cattle owners having 7-10 cattles adopted these practices. Inclusion of agro-industrial by product like turchunni, bran etc. in the feeding of cattles was adopted by 88.33% cattle owners belonging to 1-3 cattles category followed by 57.14% by 4-6 cattle owners and 18.18% by cattle owners having more than 10 cattles. However, poor adoption for these practices was found 15.78% by the 7-10 cattle owners.

Thus, regarding overall adoption of recommended scientific feeding practices majority of the practices had not adopted even up to 30% and only few practices like feeding of dry, green and concentrate in required proportion, processing of roughages and concentrate before feeding, chaffing/water soaking,feeding of dry matter 2.5 to 3 kg $100^{-1}$ kg body weight, inclusion of agro-industrial by product like turchunni, bran etc. have been adopted by majority of the farmers belonging to category of 1-3 cattle owner and 4-6 cattle owners. Above 10 and 7-10 cattle owners had poor adoption of these practices. This might be due to minimum number of animals, individual care could be taken by the family members of cattle owners, while individual care of animal may not be possible in large herd size of cattle i.e. the medium level of adoption was more observed.

These findings are in conformity with the findings of Singh *et al*. (2012), they observed from the data that 20.4, 48.9 and 30.6 per cent of the dairy farmers in the study area had fallen in low, medium and high categories respectively in the overall adoption of dairy practices. Likewise, Meena *et al.* (2012), Halakatti *et al.* (2007) and Pedhekar (2016) also reported that majority of the respondents belonged to medium adoption category.

**Housing management**

Data regarding housing pattern adopted by cattle owners are presented in table 2.

It is observed from the data that 63.20% cattle owners adopted open shed for housing their cattles and closed shed housing pattern was used by minimum number of cattle owners i.e. 24.80% under improved one and 12% as recommended. It was further noticed that 69.60%, 75.20%, 63.20% and 78.40% cattle owners adopted kachha shed, part of residency, kachha flooring and no drain out for urine for housing their cattles, respectively and 100% cattle owners had fully ventilated housing shed respectively for their cattles. On the other hand, closed housing pattern was used by 24.80 per cent cattle owners under improved and 12.00 per cent under recommended, 16.80 and 9.60 per cent cattle owners adopted separate housing pattern as under improved and recommended, respectively. Pacca flooring of housing was adopted by minimum cattle owners i.e. 20.00 per cent and 10.40 per cent under improved and recommended categories, respectively and very few cattle owners i.e. 15.20 and 6.40 per cent cattle owners made provision of pacca drain out under improved and recommended pattern of housing.

**Table 1. Adoption of scientific recommendation in feeding of milch cattles to herd size of herd in Gadchiroli tahsil**

| Sr No | Recommendation feeding practices | 1 to 3 cattle owners | Per cent | 4 to 6 cattle owners | Per cent | 7 to 10 cattle owners | Per cent | Above 10 cattle owners | Per Cent | Gadchiroli tahsil (125) | Per Cent | $Chi^2$ | d.f | Significance |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Feeding of balanced ration at regular interval | 21 | 35.00 | 11 | 31.42 | 5 | 26.31 | 2 | 18.18 | 39 | 31.20 | 17.77 | 1 | * |
| 2 | Feeding of dry, green and conc. In required proportion | 43 | 71.66 | 26 | 74.28 | 8 | 42.10 | 4 | 36.36 | 82 | 65.60 | 12.16 | 1 | * |
| 3 | Processing of roughages and conc. before feeding, chaffing/water soaking | 56 | 93.33 | 30 | 85.71 | 6 | 31.57 | 7 | 63.63 | 99 | 79.20 | 42.63 | 1 | * |
| 4 | Enrichment of poor quality roughages by urea, ammoniation and molasses | 7 | 11.66 | 5 | 14.28 | 3 | 15.78 | 1 | 9.09 | 17 | 13.60 | 66.24 | 1 | * |
| 5 | Feeding at least 5 kg green fodder | 23 | 38.33 | 14 | 40.00 | 5 | 26.31 | 4 | 36.36 | 46 | 36.80 | 8.71 | 1 | * |
| 6 | Feeding of dry matter 2.5 to 3 kg $100^{-1}$ kg body weight | 55 | 91.66 | 25 | 71.42 | 5 | 26.31 | 6 | 54.54 | 92 | 73.60 | 27.84 | 1 | * |
| 7 | Inclusion of agro-industrial by product like ture chunni, bran etc. | 53 | 88.33 | 20 | 57.14 | 3 | 15.78 | 2 | 18.18 | 79 | 63.20 | 8.71 | 1 | * |
| 8 | Feeding of conc. @ 40 per cent of milk production | 32 | 53.33 | 9 | 25.71 | 2 | 10.52 | 3 | 27.27 | 47 | 9.60 | 7.68 | 1 | * |
| 9 | (a)Use of 60 gm common salt | 26 | 43.33 | 6 | 17.14 | 2 | 10.52 | 2 | 18.18 | 37 | 29.60 | | | |
| | (b)Use of mineral mixture | 4 | 6.66 | 3 | 8.57 | 2 | 10.52 | - | - | 9 | 7.20 | 8.71 | 1 | * |
| | (c)Use of mineral bricks | - | - | - | - | - | - | - | - | - | - | - | | |
| 10 | Feeding of conc. Mixture @ 1 to 1.5 kg to pregnant animal | 24 | 40.00 | 13 | 37.14 | 6 | 31.57 | 5 | 45.45 | 49 | 39.20 | 5.83 | 1 | * |

**Table 2. Housing pattern adopted by selected cattle owners**

| Category | No. | Component | Wasa | Kharpundi | Pulkhal | Kaneri | Wakdi | Overall total | Per cent |
|---|---|---|---|---|---|---|---|---|---|
| **Traditional** | **1.** | **Cowshed** | | | | | | | |
| | | a)Open | 15 | 17 | 13 | 15 | 19 | 79 | 63.20 |
| | | b) Kachha | 16 | 19 | 15 | 17 | 20 | 87 | 69.60 |
| | | c) Part of residency | 18 | 20 | 17 | 18 | 21 | 94 | 75.20 |
| | **2.** | **Flooring** | | | | | | | |
| | a) | Kachha | 16 | 14 | 16 | 15 | 18 | 79 | 63.20 |
| | b) | Pacca drain for urine drain out is unavailable | 19 | 20 | 21 | 18 | 20 | 98 | 78.40 |
| **Improved** | **1.** | **Cowshed** | | | | | | | |
| | a) | Closed | 6 | 5 | 8 | 7 | 5 | 31 | 24.80 |
| | b) | Pacca | 6 | 4 | 7 | 5 | 3 | 25 | 20.00 |
| | c) | Separate | 4 | 4 | 6 | 5 | 2 | 21 | 16.80 |
| | **2.** | **Flooring** | | | | | | | |
| | a) | Pacca | 4 | 5 | 5 | 6 | 4 | 24 | 19.20 |
| | b) | Pacca drain for urine drain out is available | 4 | 4 | 3 | 5 | 3 | 19 | 15.20 |
| **Recommended** | **1)** | **Cowshed** | | | | | | | |
| | | a) Closed | 4 | 3 | 4 | 3 | 1 | 15 | 12.00 |
| | | b) Pacca | 3 | 2 | 3 | 3 | 2 | 13 | 10.40 |
| | | c) Separate | 3 | 1 | 2 | 2 | 2 | 12 | 9.60 |
| | **2)** | **Flooring** | | | | | | | |
| | | a) Pacca | 5 | 6 | 4 | 4 | 3 | 22 | 17.60 |
| | | b)Pacca drain for urine drain out is available | 2 | 1 | 1 | 2 | 2 | 8 | 6.40 |
| | | **Ventilated** | 25 | 25 | 25 | 25 | 25 | 125 | 100 |
| | | **Non ventilated** | - | - | - | - | - | - | - |

**Table 3. Health and sanitation adopted by cattle owners**

| Sr. No. | Component | Name of selected village | | | | | Overall Total | Per cent |
|---|---|---|---|---|---|---|---|---|
| | | Wasa | Kharpundi | Pulkhal | Kaneri | Wakdi | | |
| **A** | **Cleaning** | | | | | | | |
| 1) | Washing of udder before milking | 25 | 25 | 25 | 25 | 25 | 125 | 100 |
| 2) | Cleaning of milking utensils | 25 | 25 | 25 | 25 | 25 | 125 | 100 |
| 3) | Cleaning of sheds | 23 | 25 | 24 | 23 | 25 | 120 | 96.00 |
| 4) | Cleaning of sheds not practices | 2 | - | 1 | 2 | - | 5 | 4.00 |
| **B** | **Health** | | | | | | | |
| 1 | Grooming | | | | | | | |
| | i) Regularly | 17 | 18 | 15 | 18 | 16 | 85 | 67.20 |
| | ii)Irregularly | 8 | 7 | 10 | 6 | 9 | 40 | 32.00 |
| 2 | Washing | | | | | | | |
| | i) Regularly | 15 | 16 | 14 | 18 | 19 | 82 | 65.60 |
| | ii)Irregularly | 10 | 9 | 11 | 7 | 6 | 43 | 34.40 |
| 3 | Vaccination | 23 | 25 | 25 | 24 | 25 | 122 | 97.60 |

**Table 4. Breeding methods adopted by selected cattle owners**

| Sr. No. | Component | Name of selected village | | | | | Overall Total | Per cent |
|---|---|---|---|---|---|---|---|---|
| | | Wasa | Kharpundi | Pulkhal | Kaneri | Wakdi | | |
| 1) | Natural service | 4 | 3 | 4 | 1 | 2 | 14 | 11.20 |
| 2) | Artificial Insemination | 21 | 22 | 21 | 24 | 23 | 111 | 88.80 |

It was noticed that maximum cattle owners adopted traditional method of housing pattern as compared to improved one and recommended.Sharma (2013) also observed that mostly dairy farmers used shed attached to home and kachha housing pattern. On contrary,Ahirwar *et al*. (2010) reported that 59.33 per cent farmers had mud housing pattern or kaccha housing pattern and 68.00 per cent farmers had pacca hosing pattern.

Likewise, Quddus (2012) reported that only 10.60 per cent farmers maintained recommended cow-shed, 41.10 per cent made improved and large portion (48.30 per cent) made traditional i.e. unscientific cow-shed due to inability to maintained it. Pedhekar (2016) also noticed that the 10.00 per cent farmers maintained recommended cow-shed, 15.00 per cent farmers made improved cow-shed and 75.00 per cent farmers maintained traditional cow-shed. These results are agreeable with the results of present study.

**Health and sanitation management**

The data regarding health and sanitation adopted by the cattle owners are given in table 3. It is seen from the data that all the cattle owners were careful in maintaining the highest standard of sanitation (100%) pertaining to washing of udder before milking, cleaning of milking utensils.

So, as far as maintaining the health of cattles is concerned, grooming of cattles was adopted by 67.20% cattle owners followed by washing by 65.60% cattle owners .However, 97.60% cattle owners preferred the practice of vaccination.

Bashir and Kumar (2013) observed that the cent per cent farmers were regularly using the practices like cleaning of utensils and washing of udder before milking. The results of the present study are almost in line with these results. Most of the crossbred cattle owners followed the practices like grooming and washing of crossbred cattle regularly (64.00 per cent and 55.00 per cent).

Most of the cattle owners not followed the no cost practices like grooming and washing of crossbred cattle regularly (Quddus, 2012). Likewise, Pedhekar (2016) were also noticed more or less similar results pertaining to the health and sanitation components. These results are agreeable with the results of present study.

**Breeding management**

The data regarding breeding methods adopted by the cattle owners are given in table 4.

With respect to breeding method, most of the cattle owners (88.80 per cent) adopted the artificial insemination (AI). About 11.20 per cent owners adopted natural service method. The maximum cattle owners were aware the AI in cattle.

Quddus (2012) reported that most of the farmers had adopted Artificial insemination in crossbred cattle. Likewise, Pedhekar (2016) also reported artificial insemination (94.50 per cent) and natural service (5.50 per cent) adopted as breeding methods in an around Bhandara city. These findings are in line with the findings of present study area.

# REFERENCES


Ahirwar, R. R., S. Nanavati and N. K. Nayak, 2010. Studies on housing management of buffaloes under rural and urban areas of Indore district of M. P. IndianJ. Field Vet.**5**(3): 55-56.

Anonymous, 2012. Press information bureau government of India ministry of agriculture 19 th livestock census. 15:19 IST (Indian standard time).

Anonymous. 2015. Annual Report. National Dairy Development Board, Anand.

Bashir, B. P. and V. Kumar,2013. Milking management practices followed in selected areas of the Kottayam district of Kerala state. J. Life Sci. **5**(1): 53-55.

Halakatti, S. V., V. Kamaraddi and S. M. Gowda, 2007. Determination of adoption of dairy farming technologies by rural women under SGSY Scheme. Karnataka.J. agric. Sci.**20**(2): 323-325.

Meena, D. K., H. Ram and B. S. Meena, 2012. Adoption of improved animal husbandry practices by the members and non-membres of dairy co-operative societies in Bikaner. Indian J. Dairy Sci.**65**(4): 356-358.

Mohamed A. M., S. E. Ahmed and A.Yemesrach, 2004. Dairy development in Ethiopia. International food Policy Research Institute, Washington. DC. USA: pp. 123.

Pedhekar, M. B. 2016. Studies on dairy farming practices adopted for crossbred cows around Bhandara city. Unpublished. M.Sc. Thesis submitted to P. D. K. V., Akola (M.S.)

Quddus, M. A. 2012. Adoption of dairy farming technologies by small farm holders: practices and constraints. Bangladesh. J. Anim. Sci.**42**(2): 124-135.

Sharma, R. 2013. Housing management practices of dairy cattle in milkshed and non- milkshed areas of Bikaner district.Envirous, **31**(2B): 999- 1003.

Singh, K. R., Chakravarty, Y. S. Jadoun and P. Bhadauria, 2012. Motivational factors affecting adoption of improved dairy farming practices in rural areas. Indian J. Anim. Res., **46**(4): 376-380.


**Rec. on 10.06.2017 & Acc. on 30.06.2017**