Original Research Article

Existing Dairy Husbandry Practices followed by Livestock owners in Farrukhabad District of Uttar Pradesh, India

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A B S T R A C T

A study was carried out to collect the information regarding existing dairy husbandry practices along with health management practices from 180 selected respondents with the help of predesigned questionnaire in Farrukhabad district of Uttar Pradesh. The present Study revealed that majority of respondents (80.6%) kept their animal inside dwelling house in thatched roof shed (62.8%) with kuccha floor (80.6%) and cemented manger (86.7%). It was observed that 66.7% respondents practice both stall feeding along with grazing and provide home grown as well as purchased feed and fodder and only few respondents (17.8%) provide the extra feed during pregnancy and milking of the animals. It was observed that most of the respondents (73.3%) detect heat by mucus discharge as well as bellowing of animal and follow the artificial insemination within 12-18 hr after the detection of heat. Only 28.9% respondents follow the deworming schedule of calf and adult animals while almost all the respondent follow the vaccination of animals. Finally on the basis of result findings it is concluded that most of the respondents follow the traditional husbandry practices for their livelihood because they do not have the knowledge of modern dairy husbandry practices.

Key words: Dairy animals, Housing, Feeding, Milking, Health, Management

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Introduction

Dairy husbandry plays an important role in the national economy by providing employment and nutrients to the millions of people residing in rural and urban area of the country. India continues to be the largest producer of milk in the world. Total milk production during 2016-17 was 165.4 million tones. The per capita availability of milk was around 355 grams per day in 2016-17 (Anon 2017). Therefore, dairy development in India has been an effective and important instrument of rural development as it generates self-employment opportunities.

Production potential of livestock depends to a much extent on the management practices
which vary significantly within agro-ecological regions. Hence, understanding husbandry management practices of the region is necessary to identify the strengths and weaknesses of the rearing systems and to formulate suitable intervention policies (Gupta et al., 2008). Each component of management practices i.e. breeding, housing, feeding and healthcare interacts either directly or indirectly to affect the productivity of the livestock. Considering these facts, the present study was designed to investigate the existing dairy husbandry practices adopted by livestock owners in Farrukhabad district of Uttar Pradesh.

Results and Discussion

Housing management practices

The data on the housing pattern adopted by the farmers has been shown in table 1. The present Study revealed that majority of respondents (80.6%) had animal shed located inside dwelling house while only 19.4% had separate animal shed outside their house. Present finding is supported by Pata et al., (2018b) and contrary to Pundir et al., (2000). The perusal of the data revealed that the majority of the respondents kept their animals in thatched roof shed (62.8%) followed by Asbestos sheet (25.0%) and pucca sheds (12.2%). These results are supported by Singh et al., (2015). Majority of respondents (80.6%) had kuccha floor pattern followed by 19.4% pucca floor pattern (15.6% brick edge and 3.9% cemented floor).

These findings are supported by Kalyankar et al., (2008) who found that the kuccha flooring was most common (91.56 per cent) in animal houses. Present findings were also supported by Sabapara et al., (2010) and Pata et al., (2018b) those also reported kuccha flooring to be most common type of flooring in their study area. From the results it is evident that all the respondents provided manger to their animals in which 86.7% were of pucca type i.e. cemented while 13.3% were made of local materials like mud, plastic etc. Contrary to this, Kalyankar et al., (2008) reported that 75 per cent farmers provided kuchcha type of stall in agro-climatic zone of Maharashtra state. Sinha et al., (2009) reported that the majority of feeding manger were kuchcha in rural areas, whereas, majority of farmers in semi urban and urban areas had pucca manger. In the present study it was found that majority of the farmers, who have smaller herd size, provided the adequate floor space to their animal to perform their natural behaviour while those have larger herd size.
were unable to provide adequate floor space. The findings are in agreement with the reports of Sinha et al., (2009) who found that 74.4 per cent of respondents in the rural and 86.7 per cent in urban area of Bareilly district of Uttar Pradesh had adequate floor space in their animal houses. Regarding cleanliness of the shed it was observed that majority of the respondents (81.1%) have the satisfactory cleanliness in the animal shed while 18.9% respondents have non-satisfactory cleanliness.

It was observed that 84.4% respondents had provision of good ventilation for their animal shed. Findings of the present study are corroborated by the earlier studies conducted in Prabhani district of Maharashtra (Pawar et al., 2006; Bainwad et al., 2007) and Bareilly district of Uttar Pradesh (Sinha et al., 2009). It was found that majority of the respondents (86.7%) dispose the manure from animal shed to manure pit while some respondents (13.3%) dispose directly to the field. Sinha et al., (2009) also reported that majority of respondents had manure pits.

**Feeding management practices**

Feeding is one of the most important aspects of husbandry practices. For optimum milk production, balanced and adequate feeding is important. The data on the feeding patterns adopted by the farmers of the Farrukhabad district of Uttar Pradesh has been shown in table 2. From the present investigation it was observed that 66.7% respondents practiced both stall and grazing followed by stall feeding (25.0%) and grazing (8.3%) alone. These findings are supported by Pata et al., (2018b) and Manohar et al., (2014) who reported that majority of the farmers followed both grazing as well as stall feeding system. It was revealed from the present study that majority of the farmer (82.2%) use both home grown as well as purchased feed and fodder to feed their animals and they provide only dry fodder along with concentrates. It was found that all the respondents provide the concentrate feed regularly (63.9%) and occasionally (36.1%) to their animals in the form of kitchen waste and concentrate feed available in the home or purchased from market. Majority of the respondents (66.7%) used both home grown as well as purchased feed and fodder to feed their animals followed by home grown (25%) and purchased (8.3%). It was also observed that most of the farmer (86.7%) did not provide mineral mixture to their animals. These results are supported by Jadhav et al., (2014); Jatoliya et al., (2017) and Pata et al., (2018b) who studied that majority of the farmers did not provide mineral mixture to their animals. Almost all the farmers have the provision of clean drinking water facility for their animals. In the present investigation it was observed that only few respondents (17.8%) provide the extra feed during pregnancy and milking of the animals.

**Reproductive management practices**

The results of various reproductive management practices followed by dairy farmer in the study area are presented in Table 3. It was observed that all respondents (100%) relied on behavioural signs for the detection of heat in their dairy animals. Out of these 73.3% respondents detect heat by both mucus discharge and bellowing of animal followed by only mucus discharge (13.9%), bellowing (8.3%) and by mounting (4.4%). Patel et al., (2005) also found that 76% farmers followed mucus discharge and bellowing as the symptoms of estrus in dairy animals. Chowdhry et al., (2006) conducted a study in Banaskantha district of North Gujarat and found that 28 percent farmers observed only mucus discharge as sole symptom of heat detection while 72 percent observed mucus discharge and bellowing as heat symptoms. Modi and Patel (2010) studied on
breeding practices in dairy animals of rural area under milk shed of North Gujarat and reported that almost all farmers observed only mucus discharge and bellowing for heat detection.

It was found that majority of the farmer follow the artificial insemination for the breeding of dairy animals in which 75.6% respondent allow the insemination within 12-18 hr after the detection of heat while 24.4% follow after 18 hr of heat detection. Chowdhry et al., (2006) observed that 98.61 percent and 1.39 percent farmers practiced A.I. and natural service, respectively for their crossbred cows. Modi and Patel (2010) studied the breeding practices in dairy animals of rural area under milk shed of North Gujarat and also reported that almost all farmers used AI. Malsawmdawngliana and Rahman (2016) found that the Artificial Insemination (AI) was within the reach of majority of the dairy farmers. Majority of the respondents (98.00%) did AI within 12-18 hours after heat detection. AI was preferred by the farmers over natural service.

Majority of the respondents follow breeding of female after 3 months of calving and they did not follow the pregnancy diagnosis of dairy animals. This present finding is contrary to the finding of Singh et al., (2013) as reported that majority (93.33%) of dairy farmers had highest adoption about AI in the animals at proper time of heat followed by heat detection in animals and service the cow within 60-90 days after calving.

**Milking management practices**

The results of various milking management practices followed by dairy farmers in the study area are presented in Table 4. In the present study all the farmers allowed their calves to suckle their dams for letdown of milk. They also allow the calf to suckle before and after the milking to feed the calf.

This study revealed that all the farmers were followed the practice of washing of teat and udder before milking. Similar findings were reported by Kushwaha et al., (2007), Chowdhry et al., (2008), Kalyankar et al., (2008), Sabapara (2015) who found that the majority of farmers followed hygienic steps before milking. The present findings are also supported by Pata et al., (2018a) and Sreedhar et al., (2017) who reported that majority of the respondents follow the practice of washing of teat and udder before milking. Majority of respondents (60.0%) milked dairy animals by knuckling method followed by 27.8% respondents milked by full hand followed by 12.2% respondents milked by stripping method.

Present findings are supported by Pata et al., (2018) and Sreedhar et al., (2017) who indicated that majority of farmers followed knuckling method of milking. It was observed that 83.3% respondents practiced stripping at end of milking followed by 16.7% respondents did not practice stripping. These results are supported by Pata et al., (2018a) and Swaroop and Prasad (2009) who observed that 95.33% and 73 % of the respondents followed stripping at the end of milking, respectively.

It was observed that all the respondents followed twice a day milking. These finding are supported Bashir et al., (2013); Pata et al., (2018a) and Tiwari et al., (2018) concluded that majority of the farmers practiced milking twice a day in their animals.

About 60% respondents were followed regular interval of milking in their animals while 40% were unable to follow regular milking interval. Similar findings were also reported by Malik and Nagpaul (1999).
Table 1. Housing management practices

| Category                        | No  | Per Cent |
|---------------------------------|-----|----------|
| **Location of shed**            |     |          |
| Inside dwelling house           | 145 | 80.6     |
| Separate from dwelling house    | 35  | 19.4     |
| **Type of shed**                |     |          |
| Pucca                           | 22  | 12.2     |
| Asbestos                        | 45  | 25.0     |
| Thatch                          | 113 | 62.8     |
| **Type of floor**               |     |          |
| Kachcha                         | 145 | 80.6     |
| Brick                           | 28  | 15.6     |
| Cement                          | 7   | 3.9      |
| **Manger made of**              |     |          |
| Cement                          | 156 | 86.7     |
| local material                  | 24  | 13.3     |
| **Floor space**                 |     |          |
| Adequate                        | 128 | 71.1     |
| Not adequate                    | 52  | 28.9     |
| **Cleanliness in the shed**     |     |          |
| Satisfactory                    | 146 | 81.1     |
| Non-satisfactory                | 34  | 18.9     |
| **Ventilation**                 |     |          |
| Adequate                        | 152 | 84.4     |
| Not adequate                    | 28  | 15.6     |
| **Drainage system**             |     |          |
| Good                            | 142 | 78.9     |
| Poor                            | 38  | 21.1     |
| **Manure Disposal**             |     |          |
| Manure pit                      | 156 | 86.7     |
| Direct to field                 | 24  | 13.3     |

About 56.7% respondents reported that the total milk production was up to 5 litre/day followed by 6-10 litre/day (31.1%) and only 12.2% respondents have more than 10 litre/day production of milk.

It was found that majority of the respondents use some amount of milk for family consumption and rest of the milk they used to dispose through local vendors (65.6% respondents) followed by middle man (19.4% respondents) and co-operative society (15.0% respondents). Majority of the respondents (68.3%) were disposed their milk on quantity basis while others (31.7%) on quality (fat %) basis.
Table 2 Feeding management practices

| Feeding management practices                  | No | Per Cent |
|-----------------------------------------------|----|----------|
| **Feeding system**                            |    |          |
| Stall feeding                                 | 45 | 25.0     |
| Only grazing                                  | 15 | 8.3      |
| Both (Stall + grazing)                        | 120| 66.7     |
| **Source of feed fodder**                     |    |          |
| Home grown                                   | 45 | 25.0     |
| Purchase                                     | 15 | 8.3      |
| Both home grown & purchase                    | 120| 66.7     |
| **Green fodder provided**                     |    |          |
| Yes                                          | 148| 82.2     |
| No                                           | 32 | 17.8     |
| **Concentrate feeding**                       |    |          |
| Regular                                      | 115| 63.9     |
| Occasionally                                 | 65 | 36.1     |
| **Feeding of salt and mineral mixture**       |    |          |
| Yes                                          | 24 | 13.3     |
| No                                           | 156| 86.7     |
| **Clean drinking water access**               |    |          |
| Yes                                          | 180| 100.0    |
| No                                           | 0  | 0.0      |
| **Extra allowance during pregnancy and milking** |  |           |
| Yes                                          | 32 | 17.8     |
| No                                           | 148| 82.2     |
**Table 3** Reproductive management practices

| Breeding management practices | Category | No | Per Cent |
|------------------------------|----------|----|----------|
| Method of heat detection     | Symptom  | 180| 100.0    |
|                              | Teaser   | 0  | 0.0      |
| Symptoms of heat detection   | Mucus discharge | 25 | 13.9     |
|                              | Bellowing | 15 | 8.3      |
|                              | Mucus discharge + bellowing | 132 | 73.3     |
|                              | Mounting | 8  | 4.4      |
| Breeding of females          | AI       | 180| 100.0    |
|                              | Natural service | 0  | 0.0      |
| Insemination after heat detection | Within 12-18 hrs | 136 | 75.6     |
|                              | After 18 hrs | 44 | 24.4     |
| Breeding after calving       | 2-3 months | 64 | 35.6     |
|                              | 3 months and after | 116 | 64.4     |
| Pregnancy diagnosis         | Follow   | 54 | 30.0     |
|                              | Not follow | 126 | 70.0     |
| Milking management practices                      | No  | Per Cent |
|--------------------------------------------------|-----|----------|
| **Milking method**                                |     |          |
| Full hand                                         | 50  | 27.8     |
| Stripping                                        | 22  | 12.2     |
| Knuckling                                        | 108 | 60.0     |
| **Stripping at the end of milking**               |     |          |
| Yes                                              | 150 | 83.3     |
| No                                               | 30  | 16.7     |
| **Let down of milk**                             |     |          |
| Use calf                                         | 180 | 100      |
| Other                                            | 0   | 00       |
| **Frequency of milking**                         |     |          |
| Once a day                                       | 0   | 0.0      |
| Twice a day                                      | 180 | 100.0    |
| Thrice a day                                     | 0   | 0.0      |
| **Milking interval**                             |     |          |
| Regular                                          | 108 | 60.0     |
| Irregular                                        | 72  | 40.0     |
| **Washing of teat and udder before milking**     |     |          |
| Yes                                              | 180 | 100.0    |
| No                                               | 0   | 0.0      |
| **Total Milk production (liters/day)**           |     |          |
| upto 5 liters                                    | 102 | 56.7     |
| 6 to 10 liters                                   | 56  | 31.1     |
| >10 liters                                       | 22  | 12.2     |
| **Disposal of milk after family consumption**    |     |          |
| Middle man                                       | 35  | 19.4     |
| Local vendor                                     | 118 | 65.6     |
| Co-operative society                             | 27  | 15.0     |
| Sale of milk on the basis of                     |     |          |
| Fat %                                            | 57  | 31.7     |
| Quantity                                         | 123 | 68.3     |
Table 5: Health management practices

| Health management practices | Category   | No | Per Cent |
|----------------------------|------------|----|----------|
| Use of disinfectant        | Yes        | 45 | 25.0     |
|                            | No         | 135| 75.0     |
| Deworming of animals       | Follow     | 52 | 28.9     |
|                            | Not follow | 128| 71.1     |
| Vaccination of animals     | Yes        | 180| 100.0    |
|                            | No         | 0  | 0.0      |
| Treatment of animals by    | Veterinary doctor | 102| 56.7 |
|                            | Quack      | 62 | 34.4     |
|                            | Follow ITK | 16 | 8.9      |

Health management practices

The results of various health management practices followed by livestock owners in the study area are presented in Table 5. Majority (75%) of the respondents did not use the disinfectant in the animal shed. This could be on account of their lack of awareness about importance of cleanliness of the shed. The results are in line with the findings of Singh et al., (2015); Meena et al., (2008) and Singh et al., (2007).

Only 28.9% respondents follow the deworming schedule of calf and adult animals and regarding vaccination almost all the respondent follow the vaccination of animals. For the treatment of diseased animals most of the respondents (56.7%) follow the treatment by veterinary doctors, 34.4% by quack and 8.9% respondents practice the indigenous technical knowledge for the treatment of animals. Finally on the basis of result findings of present investigation, it is concluded that most of the respondents are following the traditional husbandry practices because they do not have the knowledge of modern dairy husbandry practices. Therefore, these findings suggest that there is a need to organize awareness camps and training programmes regarding scientific dairy husbandry as well as health management practices.

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