

Adoption of Improved Animal Husbandry Practices by Dairy Farmers in Meerut, Raebareilly and Prayagraj District of Uttar Pradesh

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Abstract: This study was conducted to ascertain the extent of adoption of improved dairy husbandry practices in the Meerut, Raebareilly and Prayagraj district of Uttar Pradesh. The study was undertaken in 5 villages in 3 district of Uttar Pradesh and 75 dairy farmers were selected randomly for the structured interview. The study revealed that the overall extent of adoption of improved animal husbandry practices in the study area was found to be 74.99 %. The overall highest adoption rate was for reproductive and calf management (88.80 and 82.93%) followed by milking and general management (80.00 and 79.56%), while the adoption of scientific healthcare and feeding management (61.33 and 57.33%). A greater extent of adoption was observed in reproductive, calf management, milking management followed by general management, healthcare and feeding management practices. The extent of adoption on feeding management was found to be very lower as compared to other management practices.

Keyword: Adoption, dairy farmers, animal husbandry practices, management

INTRODUCTION

In India after agriculture Dairy is a second important source of income for millions of rural families and providing income generating and employment activities to rural women and marginal farmers. The per capita availability of milk has reached to the level of 444 grams in the year 2021-22 which is the more than the world average of around 305 gram per day in 2020. There is a steady increase in daily per capita milk availability. The total milk production stood at over 221.06 million tons in the country in the year 2021-22. The milk output saw an annual growth rate of 5.29% in 2021-2022. Rajasthan (15.05%), Uttar Pradesh (14.93%), Madhya Pradesh (8.06%), Gujarat (7.56%), and Andhra Pradesh (6.97%) are the top five states that produce the most milk. (*Department of Animal Husbandry and Dairying, Ministry of Fisheries, Animal Husbandry and Dairying, GOI, Annual Report 2021-22*) The per capita availability of milk was 392 gm per

day in UP in 2021-22. (**Basic Animal Husbandry Statistics, MoFAHD, DAHD, GoI**). In India productivity per animal is lower, as compared to per head productivity in other countries. The probable reasons for lower productivity are poor germplasm for milk production, inadequate feed, and fodder resources as well as inadequate healthcare facilities. Moreover, reasons like lack of adoption and diffusion of new or improved animal husbandry technologies / practise and inadequate knowledge of the dairy farmers are found responsible for lower production. Adoption of scientific husbandry practices has great scope for improving overall productivity, profitability, and sustainability of a dairy farming enterprise. The adoption of scientific practices is greatly affected by awareness and attitude of the farmers.

MATERIALS AND METHODS

The present investigation was carried out in crossbred cows in three district of Uttar Pradesh

state during the year 2022. For the Present study, five village from each of three district Meerut, Raebareilly and Prayagraj were randomly selected. Thus, a total of 75 respondent/dairy farmers were selected randomly for the investigation.

A pre-tested structured interview schedule was used to collect the relevant information. Keeping in view the objective of the study dependent variables included the extent of adoption of improved dairy husbandry practice by the farmers in the study area. To estimate the extent of adoption of improved animal husbandry practices, a total of 29 recommended dairy husbandry practise were detailed and divided into six significant aspects of husbandry practice (table 1), viz., calf management, feeding management, milking management, healthcare management, reproduction management, and general management Divekar et al (2020).

The adoption indexes the degree to which a respondent actually adopts practices. Each of the adoption practice was given a score of 1 for scientifically "adopted" practice and 0 for scientifically "not adopted" practice. Thus, the minimum and maximum score a respondent could get was 0 and 29, respectively.

The adoption index was calculated through the following formula:

$$\text{Adoption index} = \frac{\text{Number of practices adopted}}{\text{Total number of practices}} \times 100$$

Above calculation of the extent of adoption of the improved animal husbandry practices of the farmer used to calculate adoption index of improved dairy husbandry practices.

RESULTS AND DISCUSSION

The overall and component wise extent of adoption of the respondents in different aspects of improved animal husbandry practices in the study area is detailed in Table 1. The results indicated the extent of adoption of the recommended practices in six major aspects of dairy husbandry, viz., calf management, feeding management, milking management, healthcare management, reproduction management, and general management were found to be 82.93, 57.33, 80.00, 61.33, 88.80

and 79.56 percent respectively. Overall, 74.99 percent of the respondents adopted improved animal husbandry practices. A greater extent of adoption was observed in reproductive, calf management, milking management followed by general management, healthcare and feeding management practices. The extent of adoption on feeding management was found to be lower as compared to other management practices.

CALF MANAGEMENT PRACTICES

The majority of the respondents (82.93 percent) had adopted scientific calf management practice like cleaning of calves after birth, naval dressing, feeding of colostrum to new born calves within one hour of birth and deworming of calves. Kumar and Mishra (2011) observed comparable adoption rates for cleaning of calves after birth, deworming of calves, colostrum feeding to calves, and practice of cutting & disinfection of the navel cord. However, Gadhavi et al. (2020) reported a higher adoption rate of colostrum feeding to newborn calves and disinfection of the navel cord.

FEEDING MANAGEMENT PRACTICES

It was observed that only 57.33 percent respondents were using scientific feeding practices like the use of a high yielding variety of fodder (57.33%), feeding of the mineral mixture (49.33%) feeding of balanced concentrate mixture on the basis of milk production (58.67%). While Jagdeep et al. (2019) reported the majority (80.00 percent) of the respondents fed concentrates to their animals. In case of pregnancy allowances (40%) to advance pregnant animal and feeding of chopped fodder to the animals (81.33%). Khatri et al. (2016) reported high adoption rates for the above-mentioned feeding practices while Jena et al. (2019) reported a similar finding for feeding of the mineral mixture.

MILKING MANAGEMENT PRACTICES

The adoption index was observed to be high (80.00) for milking management practices such as washing of udder & teats and washing of milkers' hands before milking. Rathore et al. (2010), however, reported cent percent adoption for both the practices. In the present study, a low adoption (66.67%) was found for testing for

mastitis detection while post milking dipping of teats were found to be only 32 percent. Kumar and Mishra (2011) reported even less adoption (only 2.5%) for the full hand method of milking. Traditionally since generation, farmers have adopted the knuckling method of hand milking due to swiftness in milking with lesser strain in muscles. Malik et al. 2005 also reported 70% of cattle owners using knuckling method of milking. The reason for lower adoption rate for testing may be cost involved in it.

HEALTHCARE MANAGEMENT PRACTICES

Only 48 percent of dairy farmers had adopted vaccination to prevent infectious disease like HS, FMD, and Brucellosis. A higher adoption rate for vaccination practices was reported in many earlier studies (Jena et al., 2019). Further dairy farmers had adopted practices for a control of ectoparasites (76 percent) and deworming (73.33 percent) of adult animals to a greater extent. A similar higher adoption rate was also reported for deworming practice by Jena et al. (2019) and isolation of sick animals by Kumar (2015). whereas only 18.66 percent were practicing isolation of sick animals from other animals.

REPRODUCTION MANAGEMENT PRACTICES

Artificial Insemination service after 90 days of calving and Proper disposal of the placenta were the practices adopted by 100 percent dairy farmers. Similarly, the observation of Kumar (2015) regarding proper disposal of the placenta was in agreement with the present finding. 97.33 percent dairy farmers practiced for pregnancy diagnosis of their animals between 60 to 90 days of service. While 66.67 percent use to call veterinary doctor for the treatment of reproductive diseases.

GENERAL MANAGEMENT PRACTICES

The adoption rate for the purchase of animals from reliable source was found to be (Adoption index 79.56), Purchase of animals after consulting veterinary doctor (86.67) and maintenance of farm records was lower (52). Gadhavi et al. (2020) reported a higher adoption rate for the maintenance of breeding records in South

Gujarat. However, they did not get the animals checked by a veterinarian before purchase. But all the 75 (100 percent) dairy farmers used to purchase animals from reliable sources based on weightage of milk production.

Table 1: Extent of adoption of improved animal husbandry by dairy farmers

S.N.	Particular	Respondents (n =75)
	Calf Management (Adoption index)	82.93
1	Feeding of colostrum to new born calves within one hour of birth	100
2	Use of sterilized scissors/knife for cutting naval cord and application of tincture iodine on naval cord	100
3	Disbudding of calves	45.33
4	Cleaning of calves after birth	100
5	Deworming of calves	69.33
	Feeding Management (Adoption Index)	57.33
1	Feeding of chopped fodders to animals	81.33
2	Balanced concentrate mixture on the basis of milk production	58.67
3	Feeding of mineral mixture	49.33
4	Pregnancy allowances	40
5	Use of high yielding variety of fodder	57.33
	Milking management (Adoption Index)	80.00
1	Washing of hands before milking	100
2	Washing of udder and teats before milking	100
3	Full hand method of milking	100
4	Testing for mastitis detection	66.67
5	Post milking dipping of teats	32.00
	Healthcare management (Adoption Index)	61.33
1	Vaccination against infectious diseases (HS/FMD/Brucellosis)	48.00
2	Prompt reporting of an outbreak of a contagious disease to the local veterinarian	77.33
3	Treatment of sick animals by the veterinary doctor only	73.33
4	Isolation of sick animals from the healthy ones in a separate house / shed / place	18.66
5	Control measures of ectoparasites	76
6	Deworming of adult animals	73.33
	Reproduction management (Adoption Index)	88.80

S.N.	Particular	Respondents (n =75)
1	Artificial insemination	100
2	Having the buffalo/cow served within 90 days after calving	80
3	Having the pregnancy diagnosis done between 60 to 90 days after service	97.33
4	Treatment of reproductive disease by a veterinarian	66.67
5	Proper disposal of placenta	100
	General management (Adoption Index)	79.56
1	Maintaining farm records	52.00
2	Purchasing animals from a reliable source based on scoring/weightage on milk production	100
3	Purchasing animals after consulting veterinary officer	86.67

CONCLUSION

It can be concluded from the study that the overall extent of adoption of improved animal husbandry practices in the study area were 74.99 percent, this means that majority of the farmers were practicing scientific management practices of rearing cattle but mainly two practices i.e. healthcare and feeding management practices require more attention. Therefore there is need to make the farmers aware about importance of scientific feeding and healthcare management for producing healthy animals, this will lead to better production and reproduction performance. This can be done through training, extension education programme and availability of veterinary services and other input facilities at farmers door step.

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