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*Research Article*

# A Study on Factors Responsible for Technological Gap in Good Dairy Farming Practices in Uttar Pradesh

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**ABSTRACT**

*A study was conducted to study the factors responsible for technological gap in good dairy farming practices in Uttar Pradesh. For the study central plain zone of Uttar Pradesh was selected purposively. From the zone two districts were selected randomly and from the districts four blocks were selected randomly. Two villages from each block were selected randomly. 10 per cent of dairy farmers were selected proportionate randomly sampling from the total farmers of each village. The criteria of the respondents are the dairy farmers should have at least one lactating dairy animal at the time of investigation. From the study it was observed that the most important factors faced by the farmers in technological gap of good animal health practices was "Lack of knowledge of diseases, their cause and control measures". In case of good hygienic milking practices, most important constraint was "Lack of knowledge about hygienic milking practices". "Lack of knowledge of balance feeding" was most important factors in good feeding practices. "Irregularity in providing feed and water" was most important factors found in good animal welfare practices. Most important factors in good environment practices as perceived by the Farmers was "Irregularly cleaning of animal and animal shed". "Lack of knowledge to prepare project proposal" was important factors faced by the farmers in relation to socio-economic management practices. The study suggest that awareness programs and vocational training may be organized by the different department for capacity building of the farmers in the study area for reducing the technological gap of good dairy farming practices.*

***Keywords:*** *Factors, Technological gap, Environment, Animal health, Animal feeding.*

## INTRODUCTION

Being the largest milk producing state, Uttar Pradesh contributes around more than 18 per cent to the national milk production in the country. From the 20th Livestock Census report, released by the Department of Animal Husbandry and Dairying on Wednesday, the number of cattle is down from 19.6 million in 2012 to 18.8 million (down 3.93 per cent) in Uttar Pradesh. The buffalo population in the state has gone up by 7.81 per cent from 30.6 million in 2012 to 33 million (20th Livestock Census report -2019).

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Majority of rural population is directly or indirectly dependent on Dairy for income generation. To meet the growing market demand, there is a need to produce hygienic and quality milk from healthy milking animals. Though Uttar Pradesh is ranked first in milk production, majority of the farmers are unaware about the concept of good dairy farming practices, they produce poor standard and unhygienic milk from the milching animals. Good Dairy Farming Practices (GDFP) are used world-wide which support the farmers to produce and market safe, quality milk to satisfy the quality standards. Good Dairy Farming Practices (GDFP) is an important practical tool used world-wide in supporting farmers to produce and market safe, quality milk and milk products to satisfy the expectations of the food industry and consumers (FAO, 2011). The aim of GDFPs is to ensure production of good quality milk at the farm level by healthy animals and in equilibrium with the environment. For production of quality milk and milk products which fulfills the highest expectations of the food industry along with consumers, it is recommended that GDFPs should be followed by the farmers. (Singh et al., 2015). In the present study the factors responsible for technological gap was studied under six major indicators namely: animal welfare, hygienic milking practice, animal nutrition, animal welfare, environment and socio-economic condition. The major reasons behind the technological gap are the lack of adoption of good milking practices; unavailability of green fodder round the year; unavailability of timely veterinary health services etc. Keeping this in mind, the study was conducted with following objective:

1. To identify the factors responsible for technological gap in good dairy farming practices

## MATERIALS AND METHODS

The present study was undertaken in Uttar Pradesh state. The state occupied first rank in milk production and also is rich in bovine population. The study was purposively conducted in central plain zone (CPZ) of Uttar Pradesh. From the zone two districts were selected randomly and from the district four blocks were selected randomly. Two villages from each block were selected randomly. 10 per cent of dairy farmers were selected proportionate randomly sampling from the total farmers of each village. The criteria of the respondents are the dairy farmers should have at least one lactating dairy animal at the time of investigation. The farmers were personally interviewed with the help of semi-structured interview schedule to enlist the factors responsible for technological gap in good dairy farming practices which are categorised as animal health, hygienic milking, animal nutrition, animal welfare, environment and socio-economic management and others and rank them in terms of importance/ severity. Factors for the present study was operationalized as obstacles or hurdles faced by the dairy farmers in technological gap of good dairy farming practices. The respondents were asked to rank each of the factors relevant to them according to the degree of importance as perceived by them. The ranks given to factors were analyzed by Garret ranking method (Garret, 1981).

Using formula:

**Per cent position = 100 (R-0.5) / N.**

Where, R is the rank of the individual item in the series and N is the number of individual items ranked.

## RESULTS AND DISCUSSION

### FACTOR RESPONSIBLE FOR TECHNOLOGICAL GAP IN GOOD ANIMAL HEALTH PRACTICES

From the Table No 1 it is clearly evident that Lack of knowledge of diseases, their cause and control measures was perceived as major factor by the respondents and ranked I after considering average Garret score. The reason may be the inefficiency of extension system to educate the Dairy farmers regarding various diseases of milching animals. Hence most of

the farmers are ignorant about these aspects. Whereas, unavailability of proper treatment facility was ranked II among the factor. It is probably due to lack of veterinary hospitals in the study area and the respondents experienced the difficulty in travelling long distance with sick animal to reach veterinary hospitals for timely treatment. Again, ignorance about vaccination schedule was ranked III rd as most of the respondents were not aware about the benefits of timely vaccination of milking animals which is an important preventative measure from various diseases of milking animals. The factor of Unavailability of vaccines was ranked IV from the Garret's score. This is because of improper supply chain management of vaccines by the Government to make available the vaccines timely to those dairy farmers who were aware about proper vaccination schedule. Lastly the Unavailability of medicine in govt. veterinary hospitals was ranked VI among the factor.

**FACTOR RESPONSIBLE FOR TECHNOLOGICAL GAP IN GOOD HYGIENIC MILKING PRACTICES**

Table No 2 consists of various hurdles encountered by the respondents regarding good nutrition practices. Lack of knowledge of balance feeding for animals was encountered as major factor of this segment from the garret score and ranked I. Basically respondents had very less knowledge about feed requirement of calf, heifers, milch animals and dry animals, they only adopted the technology of balanced feeding for milching animals for income generation. Lack of knowledge of good feeding practices for milch animal was ranked II from the garret score. Basically dairy farmers feed the milch animals with by products from agriculture and they gave less importance to concentrate feed, mineral mixture, nutrient rich diet etc. Lack of knowledge regarding quality silage preparation technique was ranked III from the garret score. It was may be they were more reliant to dry matter of agricultural by products like straw for feeding the animals and they were unaware about the importance of year around availability of green feed for the animals and most of them didn't have the technology of silage preparation. Now high cost of concentrate feed was ranked IV as the respondent's income were low and there was no subsidy from the Govt. on purchase of concentrate feed. Ignorance to provide clean drinking water to the animals was ranked V as the respondents practiced grazing and they were dependent on pond or river water as a source of drinking water for the animals. Lastly limited fodder production was ranked as VI factor from the garret score as the respondents had small land holding and they could allocate sufficient land for fodder production for the milch animals.

**FACTOR RESPONSIBLE FOR TECHNOLOGICAL GAP IN GOOD ANIMAL NUTRITION PRACTICES**

Table No 3 represents various factors regarding good hygienic milking practice. Among those Lack of knowledge about hygienic milking practices was ranked I followed by Ignorance about cleaning of animal udder and milking area was ranked II. Respondents were ignorant about various precautions to be taken before milking which prevents the contamination in milk and proper milking method which reduces the occurrence of mastitis disease in milching animals. Again ignorance about cleaning of milker, unavailability of appropriate utensils and ignorance about proper cleaning of utensils and storage area were ranked third, fourth and fifth factor based on their garret score. These are the important factors to be considered as cleanliness of milker and utensils and storage area ensures hygienic milk production and prevents the contamination of various microorganisms.

**FACTOR RESPONSIBLE FOR TECHNOLOGICAL GAP IN GOOD ANIMAL WELFARE PRACTICES**

Table No 4 represents various factors related to Good animal welfare practices. Among the constraints irregularity in providing feed and water was ranked first from the garret score. The reason was that respondents didn't follow proper feeding schedule as they didn't practice dairying in organised way. Poor housing

management was found as second factor based on garret score as the respondents used to keep the animals in open space and there was no proper shed facility for the animals. Ignorance about handling diseased animal and give unnecessary pain to the animal during handling was considered as third and fourth factor based on garret score. It shows their careless attitude towards animals. Lastly unawareness about animal welfare was the fifth factor in this segment.

**FACTOR RESPONSIBLE FOR TECHNOLOGICAL GAP IN GOOD ENVIRONMENT PRACTICES**

From Table No 5 we can get an idea regarding various factors related to good environment practices in Dairy farming. Among those irregularly cleaning of animal and animal shed was ranked first. Respondents were ignorant about the importance of cleanliness in prevention and control of infectious disease in animals. Again irregularity in disposing of dung animal waste was ranked second from the garret score. The reason may be the unawareness among the respondents regarding regular cleaning of animal wastes decreases the transmission of various pathogens among the animals. Again lack of awareness about various toxic effects of various chemicals which were regularly used for the animals is ranked as fourth constraint as the respondents didn't know that some of the drugs might have caused severe detrimental effect to the animal health if proper dose and time is ensured. Lastly lack of knowledge about proper waste disposal practices was ranked fifth from the garret score.

**FACTOR RESPONSIBLE FOR TECHNOLOGICAL GAP IN GOOD SOCIO-ECONOMIC MANAGEMENT PRACTICES**

Various factors regarding good socio-economic management practices are being presented in Table No 6. Among the factors lack of knowledge in preparing project proposal was ranked first from the garret score. The respondents were ignorant about the fact that in order to harness the promising opportunities of various Governmental schemes regarding Dairy sector one must submit a well planned proposal. Lack of knowledge regarding proper record keeping was ranked second from the garret score. The respondents were ignorant about the fact that proper record maintaining of income-expenditure, health care, yield from the milching animal, insemination details etc is very helpful in proper management of the animals. Again poor availability of the profitable market was ranked as fourth major factor as most of them used to sell their produced milk in co-operative societies in low price. Non-availability of labour for managing the dairy animals, lack of capital for proper management of dairy animals were considered as fourth and fifth factor respectively from the garret score. Lastly low price of milk and milk products was considered as sixth major factor. As milk is a perishable commodity, market price for milk and milk product is very flexible.

**TABLE 1: FACTOR RESPONSIBLE FOR TECHNOLOGICAL GAP IN GOOD ANIMAL HEALTH PRACTICES**

| Sl. No. | Constraints | Score | Rank |
|---|---|---|---|
| 1 | Lack of knowledge of diseases, their cause and control measures | 75 | I |
| 2 | Treatment facilities are not readily available | 73 | II |
| 3 | Ignorance about vaccination schedule | 69 | III |
| 4 | Unavailability of vaccines | 67 | IV |
| 5 | Unavailability of medicine in govt. veterinary hospitals | 65 | V |
| 6 | Lack of Veterinary Facility in Village | 62 | VI |

**TABLE 2: FACTOR RESPONSIBLE FOR TECHNOLOGICAL GAP IN GOOD HYGIENIC MILKING PRACTICES**

| Sl. No. | Constraints | Score | Rank |
|---|---|---|---|
| 1 | Lack of knowledge about basic hygienic milking practices | 70 | I |
| 2 | Ignorance about cleaning of animal, udder and milking area | 68 | II |
| 3 | Ignorance about cleaning of milker | 66 | III |
| 4 | Unavailability of appropriate utensils | 64 | IV |
| 5 | Ignorance about proper cleaning of utensils and storage area | 61 | V |
| | Lack of Storage Facility of Milk | 59 | VI |

**TABLE 3: FACTOR RESPONSIBLE FOR TECHNOLOGICAL GAP IN GOOD ANIMAL NUTRITION PRACTICES**

| Sl. No. | Constraints | Score | Rank |
|---|---|---|---|
| 1 | Lack of knowledge of balance feeding | 76 | I |
| 2 | Lack of knowledge of good feeding practices for milch animal | 75 | II |
| 3 | Lack of knowledge about quality silage preparation technique | 72 | III |
| 4 | High cost of concentrate feed | 69 | IV |
| 5 | Ignorance to provide clean drinking water to the animals | 67 | V |
| 6 | Limited crop for fodder production | 66 | VI |

**TABLE 4: FACTOR RESPONSIBLE FOR TECHNOLOGICAL GAP IN GOOD ANIMAL WELFARE PRACTICES**

| Sl. No. | Constraints | Score | Rank |
|---|---|---|---|
| 1 | Irregularity in providing feed and water | 68 | |
| 2 | Poor housing management | 67 | II |
| 3 | Ignorance about handling of diseased animal | 65 | III |
| 4 | Give unnecessary pain to the animal during handling | 63 | IV |
| 5 | Unawareness about animal welfare | 61 | V |

**TABLE 5: FACTOR RESPONSIBLE FOR TECHNOLOGICAL GAP IN GOOD ENVIRONMENT PRACTICES**

| Sl. No. | Constraints | Score | Rank |
|---|---|---|---|
| 1 | Irregularly cleaning of animal and animal shed | 72 | I |
| 2 | Irregularly disposal of dung and animal waste | 70 | II |
| 3 | Lack of animal waste recycling facilities | 68 | III |
| 4 | Unaware about toxic effect of chemicals routinely used in agro-livestock industries | 66 | IV |
| | Lack of knowledge about proper waste disposal practices | 64 | V |

**TABLE 6: FACTOR RESPONSIBLE FOR TECHNOLOGICAL GAP IN GOOD SOCIO-ECONOMIC MANAGEMENT PRACTICES**

| Sl. No. | Constraints | Score | Rank |
|---|---|---|---|
| 1 | Lack of Knowledge to prepare project proposal | 74 | I |
| 2 | Lack of knowledge of record keeping | 72 | II |
| 3 | Poor availability of profitable market | 71 | III |
| 4 | Non-availability of labor | 69 | VI |
| 5 | Lack of capital | 66 | V |
| 6 | Low price of Milk and Milk products | 64 | IV |

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## CONCLUSIONS

Good dairy farming practices plays important role in the production quality milk and milk product in the rural areas for the consumption of human being, so it is very important for small and marginal farmer to produce market safe quality milk in their farm. From the study it can be concluded that the most important factor responsible for technological gap in adoption of good dairy farming practices were good animal health practices was "Lack of knowledge of diseases, their cause and control measures". In case of good hygienic milking practices, most important constraint was **"**Lack of knowledge about hygienic milking practices". "Lack of knowledge of balance feeding" was most important factors in good feeding practices. "Irregularity in providing feed and water" was most important factors found in good animal welfare practices. Most important factors in good environment practices as perceived by the Farmers was "Irregularly cleaning of animal and animal shed". "Lack of knowledge to prepare project proposal" was important factors faced by the farmers in relation to socio-economic management practices.

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