



# Perceived Constraints and Strategic Recommendations by Commercial Dairy Farmers in Jabalpur, Madhya Pradesh, India

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## Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

## Article Information

DOI: <https://doi.org/10.9734/ajaees/2024/v42i62489>

## Open Peer Review History:

This journal follows the Advanced Open Peer Review policy. Identity of the Reviewers, Editor(s) and additional Reviewers, peer review comments, different versions of the manuscript, comments of the editors, etc are available here:

<https://www.sdiarticle5.com/review-history/118683>

Original Research Article

Received: 05/04/2024

Accepted: 10/06/2024

Published: 12/06/2024

## ABSTRACT

The present study was undertaken to find out the constraints faced by the commercial dairy farmers in adoption of advance dairy production practices. The Jabalpur district of Madhya Pradesh was specifically chosen for the study because it is regarded as a centre for commercial dairy farmers

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**Cite as:** Somtiya, Arpit, Seema Naberia, Parvez Rajan, Ashutosh Shrivastava, and Umesh Singh. 2024. "Perceived Constraints and Strategic Recommendations by Commercial Dairy Farmers in Jabalpur, Madhya Pradesh, India". Asian Journal of Agricultural Extension, Economics & Sociology 42 (6):270-75. <https://doi.org/10.9734/ajaees/2024/v42i62489>.

and has a well-established infrastructure for the development of the dairy industry. The sample consisted of 203 responders in total. The research findings revealed that the main constraints mentioned by commercial dairy farmers were the unavailability of green fodder year-round, low conception rates through artificial insemination, high cost of veterinary treatment, and low milk prices relative to production costs. Farmers suggest solutions such as increasing milk prices in proportion to feed and service costs, standardize labour costs, reducing feed material costs, and improving access to veterinary services and innovative technologies. Providing suitable solutions can improve dairy farming practices, enhance productivity, and support the economic well-being of dairy farmers

*Keywords: Commercial dairy farmers; constraints; strategic recommendations.*

## 1. INTRODUCTION

Livestock sector is an important subsector of agriculture in the Indian economy. It grew at a CAGR of 8.15 per cent during 2014-15 to 2019-20 (at constant prices). As per the estimates of National Accounts Statistics (NAS) 2020 for sector-wise GVA of agriculture and allied sectors, the contribution of livestock in total agriculture and allied sector GVA (at constant prices) has increased from 24.32 per cent (2014-15) to 30.13 per cent (2020-21). According to Basic Animal Husbandry statistics 2022, livestock sector contributes 4.9 per cent of total GVA in 2020-21.

The future progress of the dairy sector depends on the ability of dairy farmers to transform it into a profitable enterprise by using scientific dairy farming practices. This includes adopting innovative technologies, improving herd management, ensuring animal health, and optimizing feeding strategies. By doing so, dairy farmers can enhance productivity, ensure sustainability, and boost their economic well-being [1-4].

India holds a prominent position in global milk production, ranking first and contributing 24 percent of the global milk output, according to FAOSTAT (2022). Dairy farming serves as a crucial subsidiary occupation in the country. Following the Green Revolution, the White Revolution emerged through Operation Flood initiated by the National Dairy Development Board in 1970, reviving the dairy industry from premature stagnation. Operation Flood significantly enhanced income, employment, and quality of life for millions of India's dairy farmers, many of whom are poor and many are women.

In India, Madhya Pradesh ranks third in milk production, generating approximately 19,004 metric tons of milk in the year 2021-22, with major contributions from Damoh and Jabalpur

districts. This study aims to explore the challenges faced by commercial dairy farmers in Jabalpur, Madhya Pradesh, and provide strategic recommendations to overcome these obstacles. The study focuses on identifying key constraints across various aspects of dairy farming, including feeding, breeding, health management, and milk marketing. By utilizing the Garrett scoring method, the paper quantitatively analyzes the severity and impact of these constraints as reported by the farmers. The study proposes actionable solutions to improve dairy farming practices, enhance productivity, and support the economic well-being of the farmers. With a specific focus on the unique challenges and opportunities within the Jabalpur region, the study also offers insights and recommendations for policymakers to formulate supportive measures that address the identified constraints and promote the growth of the dairy sector in the region. By addressing these areas, the study seeks to contribute to the development of a more sustainable and profitable dairy industry.

## 2. METHODOLOGY

Jabalpur district in Madhya Pradesh was specifically chosen for the study because it is regarded as a center for commercial dairy farming and has a well-established infrastructure for the development of the dairy industry. This includes numerous milk collection centers, processing facilities owned by both the public and private sectors, networks of cooperatives, and a high demand for fresh milk. The district comprises seven blocks, out of which Panagar and Jabalpur blocks were selected for the present investigation, as they have a larger number of commercial dairy units and farmers compared to the other blocks. With the help of the Executive of the Veterinary Department, Directorate of Veterinary Extension, Jabalpur (M.P.), a list of 203 commercial dairy farmers from the selected blocks was obtained. For the

present study, all 203 commercial dairy farmers were chosen. The data was collected through personal interviews.

Garett Ranking Method (1969) was used to assess the constraint faced by commercial dairy farmers in adoption of the improved dairy practices.

$$\text{Percent position} = \frac{100 (R_{ij} - 0.5)}{N_j}$$

Where,  $R_{ij}$  = Response given for the  $i^{\text{th}}$  variable by  $j^{\text{th}}$  respondents and

$N_j$  = Number of variables ranked by  $j^{\text{th}}$  respondents

The percent position for each rank thus obtained and converted into scores by referring the table given by Garrett and Woodworth (1969). The mean scores calculated for each factor and the appropriate ranks were given accordingly.

### 3. RESULTS AND DISCUSSION

The findings related to constraints perceived by the commercial dairy farmers are presented in the categories of feeding, breeding, health management and milk marketing constraints, which are as follows:

### 3.1 Constraints Perceived by the Commercial Dairy Farmers

#### (A) Feeding constraints perceived by the commercial dairy farmers

A perusal of Table 1 showed that unavailability of green fodders round the year with the highest mean score of 53.18 was the major constraint and ranked first among feeding constraints followed by exorbitant prices for concentrates, dry feed, and green fodder, ranked second with a mean score of 50.55. Limited storage capacity for concentrates and dry feed ranked third with a mean score of 49.45, and insufficient pasture land for the grazing ranked fourth with a mean score of 45.73.

Meenia et al. [5] in their study on constraints perceived by dairy farmers in adoption of recommended dairy practices and suggestions to overcome constraints in Jabalpur district of Madhya Pradesh also reported unavailability of fodder throughout the year with mean score of 0.57.

Lokhande et al. [6], in their study on constraint perceived by the dairy farmers in adoption of scientific dairy farming practices, also reported that 83.33 percent of the respondents expressed high cost of concentrates feeding feeds and fodder whereas the least reported constraint was poor resources for green fodder cultivation (44.16%).

**Table 1. Constraints perceived by commercial dairy farmers**

S. No.	Constraints	Garrett Score	Rank
<b>(A) Feeding Constraints</b>			
1	Exorbitant prices for concentrates, dry feed and green fodder.	50.55	II
2	Unavailability of green fodders round the year.	53.18	I
3	Insufficient pasture land for the grazing.	45.73	IV
4	Limited storage capacity for concentrates and dry feed.	49.45	III
<b>(B) Breeding Constraints</b>			
1	Poor quality services from artificial insemination centres.	95.33	II
2	Low conception rate through artificial insemination.	105.5	I
3	Difficulty in detecting silent heat	69.67	III
<b>(C) Health Management Constraints</b>			
1	High cost of veterinary treatment.	61.55	I
2	Unavailability of emergency treatment.	49.00	III
3	Lack of awareness about dehorning and deworming.	38.91	IV
4	Issues with animal abortions.	52.09	II
<b>(D) Milk Marketing Constraints</b>			
1	Low cost of milk as compared to the production cost.	64.55	I
2	Inaccurate milk fat detection by collection centres	32.36	III
3	Low milk prices offered by milk vendors and cooperative societies.	50.18	II

**(B) Breeding constraints perceived by commercial dairy farmers**

The results depicted (Table 1) that low conception rate through artificial insemination with the highest mean score of 105.5 was the major constraint and ranked first among all the breeding constraints. This was followed by the poor-quality services from artificial insemination centers, ranked second with a mean score of 95.33, and difficulty in detecting silent heat, ranked third with a mean score of 69.67.

Rathva et al. [7], in their study Constraints perceived by dairy farmers in urban - peri-urban areas of South Gujarat, observed similar breeding constraints, highlighting the lack of timely insemination facilities (3.55±0.17) and low conception rate through A.I. (2.8±0.18).

**(C) Health management constraints perceived by commercial dairy farmers**

In the category of Health management constraints, the Table 1 depicted that high cost of veterinary treatment, with a mean score of 61.55, was the major constraint faced by commercial dairy farmers and ranked first among health management constraints. This was followed by the issues with animal abortions, ranked second with a mean score of 52.09, while unavailability of emergency treatment ranked third with a mean score of 49.00, and lack of awareness about dehorning and deworming ranked fourth with a mean score of 38.91.

Singh et al. [8] observed that problems of mastitis in cross bred cow and high cost of veterinary medicine were main constraint in health management. Pata et al. [9] concluded

that unavailability of on time veterinary services for treatment and lack of veterinary services for treatment were main constraints. Gopi et al. [10] concluded that high cost of veterinary treatment services was main constraint.

**(D) Milk marketing constraints perceived by commercial dairy farmers**

Among milk marketing constraints, low cost of milk as compared to the production cost, with the highest mean score of 64.55, was the major constraint and ranked first (Table 1). This was followed by low milk prices offered by milk vendors and cooperative societies, ranked second with a mean score of 50.18, and inaccurate milk fat detection by collection centers, ranked third with a mean score of 32.36.

Singh et al. [11] in their study “Technological constraints perceived by dairy entrepreneurs” concluded that faulty detection of milk fat and non-remunerative prices of milk were significant constraints.

Babu et al. [12] in their study “A study on constraints of dairy farming in Telangana state” concluded that high production cost of milk was significant constraint.

**Suggestions given by commercial dairy farmers for improving the commercial dairy enterprise**

Suggestions offered by the commercial dairy farmers to increase the extent of adoption of scientific dairy farming practices and entrepreneurial behavior of commercial dairy farmers for improving their commercial dairy enterprise shown in Table 2.

**Table 2. Suggestions given by commercial dairy farmers for improving the commercial dairy enterprise**

S. No.	Suggestions	Frequency	Per cent	Rank
1	Availability of low-cost veterinary services	152	74.88	VI
2	Milk prices should be increased in proportion to feed and service costs	180	88.67	I
3	Ensure timely availability of Artificial Insemination	158	77.83	V
4	Timely availability of vaccinations services	140	68.97	VIII
5	Cost of feed material should be reduced	166	81.77	III
6	Loan procedure should be simplified	130	64.04	X
7	Standardize labour costs	175	86.21	II
8	Improvement in access to innovative technologies	162	79.80	IV
9	Dairy extension efforts should be increased to educate farmers on scientific practices.	135	66.50	IX
10	There should be provision of training for milk processing	145	71.43	VII

Table 2 depicts the suggestions given by commercial dairy farmers for improving the commercial dairy sector, ranked by their percentage. The top suggestion, with 88.67 per cent of farmers advocating for it, is that the Milk prices should be increased in proportion to feed and service costs. The second most frequent suggestion, supported by 86.21 per cent of farmers, is standardize labour costs. The third-ranked suggestion, mentioned by 81.77 per cent of farmers, is to reduce the cost of feed material. Farmers also emphasized the improvement in access to innovative technologies, which ranked fourth with 79.80 per cent, and ensuring timely availability of Artificial Insemination, ranked fifth (77.83%). Additionally, 74.88 per cent of farmers suggested making veterinary services available at low cost, while 71.43 per cent recommended providing training for milk processing. The eighth suggestion, supported by 68.97 per cent of farmers, is the timely availability of vaccinations. Furthermore, 66.50 per cent highlighted that dairy extension efforts should be increased to educate farmers on scientific practices. Lastly, 64.04 per cent of farmers suggested that the loan procedure should be simplified.

#### 4. CONCLUSION

The study reveals that the commercial dairy farmers in Jabalpur, Madhya Pradesh, face significant challenges in feeding, breeding, health management, and milk marketing. The key constraints include the unavailability of green fodder year-round, low conception rates through artificial insemination, high cost of veterinary treatment, and low milk prices relative to production costs. To address these issues, farmers have suggested increasing milk prices in proportion to feed and service costs, standardize labour costs, reducing feed material costs, and improving access to veterinary services and innovative technologies. By implementing these suggestions, the dairy sector can enhance its productivity and profitability, fostering entrepreneurial growth and improving the livelihoods of dairy farmers.

#### DISCLAIMER (ARTIFICIAL INTELLIGENCE)

Author(s) hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc) and text-to-image generators have been used during writing or editing of manuscripts.

#### COMPETING INTERESTS

Authors have declared that no competing interests exist.

#### REFERENCES

1. Uyanga B, Yanhua W. Study on the constraints and practical knowledge for intensive dairy cattle farming in Mongolia. *S. Asian J. Soc. Stud. Econ.* [Internet]. 2024 May 16 [cited 2024 Jun. 5];21(6): 64-9. Available: <https://journalsajsse.com/index.php/SAJSSE/article/view/831>
2. Gupta J, Subash S, Devi MCA, Mandi K. Adoption level of good dairy management practices among dairy farmers in central plain zone of Uttar Pradesh, India. *Curr. J. Appl. Sci. Technol.* [Internet]. 2020 Jun. 3 [cited 2024 Jun. 5];39(13):47-53. Available: <https://journalcjust.com/index.php/CJAST/article/view/2672>
3. D'Antoni J, Mishra AK. Determinants of dairy farmers' participation in the milk income loss contract program. *Journal of Dairy Science.* 2012 Jan 1;95(1):476-83.
4. Onyango VA, Owuor G, Rao EJ, Otieno DJ. Impact of cooperatives on smallholder dairy farmers' income in Kenya. *Cogent Food & Agriculture.* 2023 Dec 31;9(2):2291225.
5. Meenia P, Naberia S, Kethavath N, Bashir M. Constraints perceived by dairy farmers in adoption of recommended dairy practices and suggestions to overcome constraints in Jabalpur district of Madhya Pradesh. *Indian Journal of Extension Education.* 2022;58(3):115-117.
6. Lokhande JP, Jha SK, Vaidya MD. Constraints perceived by the dairy farmers in adoption of scientific dairy farming practices. *Journal of Dairying Foods & Home Sciences.* 2012;31(1):42-46.
7. Rathva, AL, Sorathiya LM, Barot BC, Gadhvi DN. Constraints perceived by dairy farmers in urban–peri urban areas of South Gujarat. *Vet. Res.* 2020;8(1):4-6.
8. Singh S, Gautam SP, Ahuja R. An analysis of constraints perceived by dairy farmers in Murrah Tract of Haryana State. *International Journal of Pure and Applied Biosciences.* 2017;5(5):1048-1053.
9. Pata BA, Odedra MD, Savsani HH, Ahlawat AR, Patbandha TK, Marandi S.

- Constraints faced by buffalo owners in Junagadh and Porbandar Districts of Gujarat. *Journal of Animal Research*. 2018;8(6):1081-1085.
10. Gopi R, Manivannan A, Sindhu MG, Soundararajan C. Socio-economic profile and constraints of dairy farmers in Cuddalore district of Tamil Nadu, India. *International Journal of Current Microbiology and Applied Science*. 2020;9(04):1320-1326.
  11. Singh N, Sharma FL, Chaudhary JL, Dhakar SD. Technological constraints perceived by dairy entrepreneurs. *Indian Journal of Extension Education*. 2015; 51(3&4):104-107.
  12. Babu YS, Chandra AS, Prasad RMV, Nagalakshmi D, Reddy MS. A study on constraints of dairy farming in Telangana State. *The Indian Veterinary Journal*. 2024; 101(01):37-42.

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