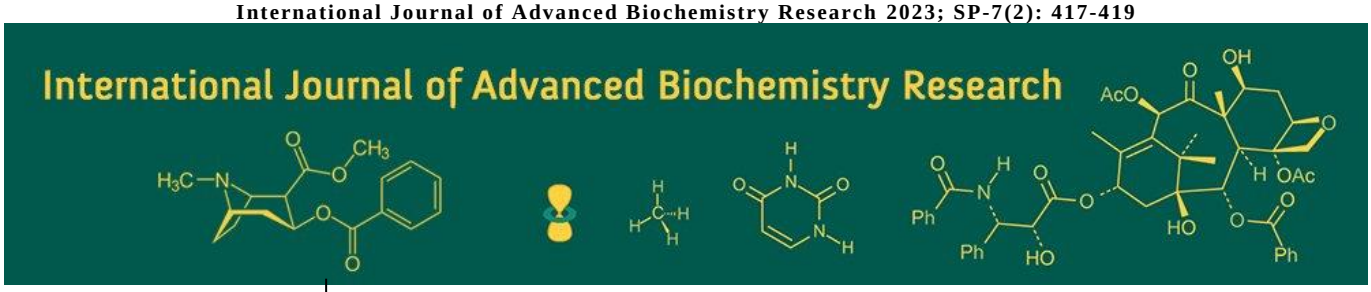

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Deepak Singh
Department of Animal Production, Rajasthan College of Agriculture, Maharana Pratap University of Agriculture and Technology, Udaipur, Rajasthan, India

Lokesh Gupta
Department of Animal Production, Rajasthan College of Agriculture, Maharana Pratap University of Agriculture and Technology, Udaipur, Rajasthan, India

Gaurav Singh
Department of Animal Production, Rajasthan College of Agriculture, Maharana Pratap University of Agriculture and Technology, Udaipur, Rajasthan, India

Surendra Singh
Department of Animal Production, Rajasthan College of Agriculture, Maharana Pratap University of Agriculture and Technology, Udaipur, Rajasthan, India

Dheeraj Kumar
Department of Animal Production, Rajasthan College of Agriculture, Maharana Pratap University of Agriculture and Technology, Udaipur, Rajasthan, India

Deepak Kumar
Department of Animal Husbandry & Dairying, Chander Shekhar Azad University of Ag. & Tech., Kanpur, Uttar Pradesh, India

Corresponding Author:
Deepak Singh
Department of Animal Production, Rajasthan College of Agriculture, Maharana Pratap University of Agriculture and Technology, Udaipur, Rajasthan, India

Challenges faced by dairy farmers in Chittorgarh district of Rajasthan

Deepak Singh, Lokesh Gupta, Gaurav Singh, Surendra Singh, Dheeraj Kumar and Deepak Kumar

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Abstract
The aim of the present study was to evaluate the challenges faced by dairy farmers in Chittorgarh district of Rajasthan. Three tehsils namely Dungla, Badi Sadri, Chittorgarh was selected purposively and from each tehsil two villages were selected and from each selected village 30 respondents were selected. Through personal interviews conducted using a pre-tested, well-structured interview schedule, data was collected from 180 dairy farmers. The results indicates that high cost involved in calling veterinary staff for treatment of breeding related problems (88.70 MPS), repeat breeding problems (84.07 MPS) and lack of knowledge of balanced ration (80.19 MPS), scarcity of green fodder round the year (77.78 MPS), lack of capital for scientific housing system (85.00 MPS), high cost of veterinary treatment (83.70 MPS), lack of knowledge about the importance of isolation of diseased animals (77.59 MPS) and low price of milk and milk products (86.30 MPS), less transportation facility (73.33 MPS), low market price of dairy animals (71.48 MPS) were the major challenges faced by dairy farmers in the study area.

Keywords: Dairy farmers, constraints, Chittorgarh

Introduction
The livestock industry has been a significant contributor to the Indian economy, providing the public with nutrient-dense food high in animal protein, bolstering family incomes, and creating gainful employment opportunities in rural areas, especially for women, landless people, and small, marginal farmers. In the emerging agriculture scenario, raising livestock in general and dairying in particular helps to increase small farmers' income by lowering unemployment among the landless. The total number of livestock in India is 535.8 million, showing an increase of about 4.6% from the 2012 livestock census. With 192.5 million cattle overall, the nation's cattle population has increased by 0.8% since the last Census. The number of buffaloes in the nation is 109.9 million, up 1.1% from the previous Census (20th livestock Census, G.O.I - 2019) [1]. With a 20.17 percent share of the global milk production, India has emerged as the leading milk producer. The amount of milk produced in 2020–2021 and 2020–2022 is 210.0 million tonnes and 221.1 million tonnes, respectively, indicating a 5.29 percent annual growth (DAHD, 2021-22). Overall, of all livestock products, milk accounts for the largest percentage 67.20 percent of the livestock industry in 2017. Moreover, milk and milk products contributed more than 20.60 per cent of the combined output of paddy, wheat and pulses in 2017. The dairy industry provides a living for 8.4 million farmers each year, of whom 71% are women (Agriculture Skill Council of India). Presently, India has 1,860 village-level cooperatives, with approximately 17 million farmers as members, and over 32,000 cooperatives headed by women. The majority of milk production in India is produced by small farmers using mixed farming systems. When the major challenges of dairy technology are recognised and addressed, it becomes easier for dairy farmers to adopt the technology. Therefore, the present study was undertaken with the objective to study various challenges faced by the dairy farmers in Chittorgarh.

Materials and Methods
The present study was carried out in the Chittorgarh district of Rajasthan. Three tehsils (Dungla, Badi Sadri, Chittorgarh) was selected from district. From each selected tehsil, two villages were selected randomly and from each village 30 respondents were selected.

Through personal interviews conducted using a pre-tested, well-structured interview schedule, data was collected from 180 dairy farmers. Simple statistical techniques such as frequency, percentage, mean score, and MPS (mean percent score) were used to analyse the collected data.

Percentage and frequency
This approach involved determining the percentage and frequency distribution of dairy farmers, allowing for the categorization of dairy farmers concerning.

Mean score
It was obtained by dividing total score of each statement by total number of respondents.

$$\text{Mean score} = \frac{\text{Total score of each statement}}{\text{Total number of respondents}}$$

Mean percent score (MPS)
Mean percent scores were obtained by multiplying total obtained score of the respondents by hundred and divided by the maximum obtainable score under each practice. Formula of MPS is given under:

$$\text{MPS} = \frac{\text{Total score obtained by the respondent}}{\text{Maximum obtainable scores}} \text{ x } 100$$

Rank
Ranks were accorded in the descending order according to the mean per cent score obtained. This was used to find out the constraint's severity in order of priority.

Results and Discussion
1. Breeding related constraints
It was concluded from Table1 that, first and major serious constraints in breeding were high cost involved in calling veterinary staff for treatment of breeding related problems (88.70 MPS). Repeat breeding was the second most serious problem in the study area. Similarly, findings also reported by Tailor *et al.* (2012) [9]. Lack of insemination facility at a time/ at the time of heat was the third most serious problem faced by respondents (80.93 MPS). The next important constraints were low conception rate through A.I. (78.52 MPS), lack of knowledge about right time of servicing the animals after onset of heat (70.74 MPS) and lack of good bredable bulls (69.26 MPS). Our findings particularly, repeat breeding problems were get support as major constraints observed by Kumar *et al.* (2009) [6].

2. Feeding related constraints
The feeding constraints of the dairy farmers from (Table 1) depicts that, distant location of market for purchase of concentrate and mineral mixture (80.56 MPS) was the first and most serious problem faced by respondents. Lack of knowledge of balanced ration (80.19 MPS) was the second most important constraint perceived by the respondents followed by scarcity of green fodder round the year (77.78 MPS), lack of knowledge of hay and silage preparation (75.0 MPS), high cost of concentrate and mineral mixture (74.44 MPS) and lack of knowledge about mineral mixture (50.0 MPS). Similar findings were also reported by Dabas *et al.* (2004) [5].

3. Housing related constraints
It was observed from Table 1 that lack of capital for scientific housing system (85.0 MPS) was ranked as first and most serious constraint in housing management and second most serious problem high-cost investment in scientific management of animals (79.81 MPS). Similar findings were also reported by Tailor *et al* (2012) [9]. Lack of knowledge about scientific animal housing was the third important constraint faced by the respondents and next important problem faced by the respondents was high cost of construction (75.74 MPS) and improper ventilation in housing (64.81 MPS).

4. Health care related constraints
From the Table 1 concluded that high cost of veterinary treatment was the most severe problem encountered by the respondents (83.70 MPS) and second serious problem, lack of knowledge about the importance of isolation of diseased animals (77.59 MPS) faced by the respondents in the study area. Next important constraints faced by respondents was long distance of veterinary hospital from village (76.50 MPS), lack of knowledge about disease control or precautionary treatment/ vaccination (75.19 MPS), lack of knowledge about deworming (72.59 MPS) and lack of qualified veterinary doctor (56.89 MPS). These findings were in close conformity with the findings of Choudhary and Intodia (2000) [3], Podikunju *et al.* (2001) [7] and Kumar *et al.* (2009) [6] who also reported almost similar constraint in adoption of improved management practices including prevention and control of milch animals.

5. Marketing related constraints
From the (Table 1) revealed that among the different marketing constraints encountered by dairy farmers, low price of milk and milk products was the major serious constraints (86.30 MPS) faced by respondents and second serious problem less transportation facility (73.33 MPS) was faced by respondents in the study area. Low market price of dairy animals (71.48 MPS) was the third most important constraint followed by lack of co-operative society in village (71.11 MPS), lack of organized market for sale of animals was also the constraints encountered by the respondents. Findings are supported by the findings of Basavarajappa and Chinnappa (2012) [4] who reported that majority of dairy farmers face problems in marketing of milk such as low price for their produce, malpractices at collection centres and delay in payment. These constraints also reported by Yedukondala *et al.* (2000) [10], Podikunju *et al.* (2001) [7] Kumar *et al.* (2009) [6] and Somvanshi *et al.* (2015) [8].

Conclusion
From the present study, it was concluded that the majority of the respondents had different challenges in which high cost involved in calling veterinary staff for treatment of breeding related problems, repeat breeding problems, distant location of market for purchase of concentrate and mineral mixture and lack of knowledge of balanced ration, scarcity of green fodder round the year, lack of capital for scientific housing system, high cost of veterinary treatment and low price of milk and milk products were the major constraints faced by the dairy farmers. To address the identified challenges in the study area, technical and institutional intervention is required. This can be achieved through the dissemination of appropriate technologies and extension strategies for better feeding, artificial insemination, improved dairy animal supply, and improved access to feed and fodder, as well as their conservation for lean periods. Ultimately, these measures will enhance milk production and boost dairy farmer's income.

Table 1: Challenges faced by dairy farmers

S. No	Constraints	Respondents (n=180)	
		MPS	Rank
A.	**Breeding**		
1.	Lack of insemination facility at a time/ at the time of heat	80.93	III
2.	Repeat breeding problems	84.07	II
3.	Low conception rate through A.I.	78.52	IV
4.	Lack of good bredable bulls	69.26	VI
5.	Lack of knowledge about right time of servicing the animals after onset of heat	70.74	V
6.	High cost involved in calling veterinary staff for treatment of breeding related problems	88.70	I
B.	**Feeding**		
1.	Scarcity of green fodder round the year	77.78	III
2.	Lack of knowledge of balanced ration	80.19	II
3.	High cost of concentrate and mineral mixture	74.44	V
4.	Lack of knowledge of hay and silage preparation	75.00	IV
5.	Lack of knowledge about mineral mixture	70.00	VI
6.	Distant location of market for purchase of concentrate and mineral mixture	80.56	I
C.	**Housing**		
1.	Lack of knowledge about scientific animal housing	77.33	III
2.	Lack of capital for scientific housing system	85.00	I
3.	High cost of construction	75.74	IV
4.	Improper ventilation in housing	64.81	V
5.	High-cost investment in scientific management of animals	79.81	II
D.	**Health care**		
1.	Lack of knowledge about deworming	72.59	V
2.	Lack of qualified veterinary doctor in the village	56.85	VI
3.	High cost of veterinary treatment	83.70	I
4.	Long distance of veterinary hospital from village	76.50	III
5.	Lack of knowledge about disease control or precautionary treatment / vaccination	75.19	IV
6.	Lack of knowledge about the importance of isolation of diseased animals	77.59	II
E.	**Marketing**		
1.	Low market price of dairy animals	71.48	III
2.	Less transportation facility	73.33	II
3.	Lack of organized market for sale of animals	68.70	V
4.	Lack of co-operative society in village	71.11	IV
5.	Low price of Milk and Milk products	86.30	I

MPS= mean percent score, n=number of respondents

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