International Journal of Advanced Biochemistry Research

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Assessing cattle welfare issues in north Gujarat

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Abstract
The present study was undertaken to identify and prioritize the major cattle welfare issues in North Gujarat. A total of 300 dairy farmers were randomly selected from Banaskantha and Mehsana districts through a multistage sampling procedure. The Garrett Ranking Technique was applied to rank the perceived constraints affecting cattle welfare. The findings revealed that lack of awareness about animal rights and welfare laws emerged as the most critical issue, followed by improper handling and transportation of cattle. Inadequate housing and shelter facilities ranked third, indicating infrastructural deficiencies that compromise animal comfort and productivity. Feeding management problems such as over nutrition and imbalanced rations, along with economic constraints, were also recognized as important barriers to maintaining welfare standards. Disease outbreaks, lack of veterinary services, unhygienic milking practices, shortage of skilled labour, harsh climatic conditions, and limited training opportunities were identified as additional but less prioritized challenges. These results highlight that both knowledge-related and resource-related issues play a central role in shaping the welfare of dairy cattle. The study emphasizes the need for awareness programs, farmer training, infrastructural support, and strengthened veterinary services to improve cattle welfare in the region. A systematic policy approach integrating education, economics, and extension services is crucial to address the multidimensional challenges faced by dairy farmers.

Keywords: Cattle welfare, dairy farming, animal rights, housing and shelter, feeding management, veterinary services

Introduction

Cattle, buffaloes, and goats constitute the predominant segments of dairy animals in India. According to the Twentieth Livestock Census (Government of India, 2019) [7], the total population of cattle, buffaloes, and goats was reported to be 192.4 million, 109.85 million, and 148 million, respectively. Public pressure for increased protection and welfare of animals comes primarily from people in largely urbanized populations is inversely related to the proportion of population that is engaged in agriculture and is increasing in importance throughout the world (Appleby *et al.*, 1992) [1]. Concern about the welfare of animals is contingent on people believing that animals, if improperly cared for or mistreated, can experience pain and suffering (Dawkins, 2003) [4]. The term "animal welfare" has been defined variously by different scholars with some of the definitions emphasizing on various elements of animal welfare which differ between cultures, individuals' background (Vapnek & Chapman, 2010; Carenzi and Verga, 2007) [3, 11] and methodologies used to evaluate welfare (Weber and Zarate, 2005) [12]. Animal welfare is a state within the animal and a scientific perspective provides methodologies for evidence-based assessment of an animal welfare (Hemsworth *et al.*, 2015) [8]. The association of man with animals is as ancient as civilization and remains inseparable despite a sea of changes in the attitude and behavioural patterns of human beings. Human society continues to derive enormous benefits from the animal kingdom in the form of food, labour, companionship, emotional support, and mental well-being. Among all animals, dairy cattle play a particularly important role in sustaining rural livelihoods and nutritional security. In India, where animal husbandry forms an integral part of agricultural practices, the well-being of dairy animals directly influences the economic stability of millions of farming households. Despite the existence of policies and guidelines promoting animal welfare, the actual implementation at the grassroots level often remains inadequate. In most cases, lack of awareness, traditional beliefs, economic constraints, and absence of proper training programs hinder

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the adoption of welfare practices. In this context, cattle welfare issues in the concerned region as noted by the dairy farmers become crucial determinants in ensuring that animal welfare standards are met in day-to-day farm operations.

Methodology

The present investigation was undertaken in two randomly selected districts from North Gujarat namely Banaskantha and Mehsana. From each selected district three talukas was randomly selected. Thus, total six talukas were selected. Among the twelve talukas of Banaskantha district, three talukas *viz.*, Palanpur, Deesa and Dantiwada were selected randomly for the study. Similarly three talukas among ten talukas of Mehsana district *viz.*, Kheralu, Visnagar and Unjha were selected randomly. From each selected taluka five villages were selected randomly. Thus, total thirty villages were selected for the study. From each of selected villages ten dairy farmers were selected randomly. Thus, total 300 dairy farmers were selected for the study. Selection criteria followed for the respondents was dairy farmers having at least two animals in milch.

These issues were then ranked by the respondents based on the severity and priority they perceive in their day-to-day dairy farming practices. To determine the relative importance of each issue, the Garrett Ranking Technique was employed. Respondents were asked to rank the listed cattle welfare issues according to their perceived seriousness. The ranks were then converted into scores using Garrett's formula and standard conversion table. The mean score for each issue was computed and issues were finally ranked in descending order of priority based on the average Garrett scores. This method enabled a systematic and quantitative prioritization of the most pressing welfare issues affecting dairy cattle in the North Gujarat region as perceived by the dairy farmers themselves.

Results and discussion
Cattle welfare issues in the concerned region

The study aimed to identify and rank the major cattle welfare issues faced by dairy farmers in the concerned region using the Garrett ranking method. The data displayed in Table shows the major welfare issues found in the concerned region, as reported by the dairy farmers.

Table 1: Cattle welfare issues in the study area (n=300)

Sr. No.	Constraints	GMS	Rank
1.	Lack of awareness about animal rights and welfare laws	69.64	I
2.	Inadequate housing and shelter facilities	45.00	III
3.	Improper handling and transportation	51.14	II
4.	Economic constraints in maintaining proper cattle welfare	38.76	V
5.	Disease outbreaks and lack of veterinary services	23.17	VI
6.	Over nutrition and feeding management	39.29	IV
7.	Shortage of skilled labour for dairy farming management	15.24	VIII
8.	Unhygienic milking practices	20.44	VII
9.	Limited access to training and extension services	7.57	X
10.	Heat stress and harsh climatic conditions	9.56	IX

The results, as presented in Table, reveal that the most pressing constraint was the lack of awareness about animal rights and welfare laws, with the highest Garrett Mean Score (GMS) of 69.64, securing the 1st rank. This finding suggests a critical knowledge gap among farmers regarding the ethical and legal aspects of cattle welfare. Such a lack of awareness likely translates into poor adoption of welfare-friendly practices and may hinder the enforcement of minimum welfare standards on farms. It underlines the importance of targeted awareness campaigns and the integration of animal welfare modules into existing training and extension services. The second most significant issue was improper handling and transportation of cattle (GMS: 51.14), ranked 2nd, indicating that stress and injuries during cattle movement are still prevalent. This could stem from either inadequate training of handlers or a general disregard for animal handling protocols, ultimately affecting cattle health, milk production and reproductive efficiency.

The issue of inadequate housing and shelter facilities ranked 3rd with a GMS of 45.00, pointing to infrastructural shortcomings such as poor ventilation, overcrowded housing and lack of comfort provisions like clean bedding or shade, all of which are essential for ensuring cattle comfort and productivity. The 4th ranked issue, with a GMS of 39.29, was over nutrition and feeding management problems, indicating that either unbalanced feeding practices or lack of scientific knowledge in feed formulation is leading to nutritional imbalances, potentially contributing to metabolic

disorders or reduced milk quality. Economic constraints in maintaining proper cattle welfare were ranked 5th (GMS: 38.76), suggesting that even when farmers are aware of welfare practices, limited financial resources may prevent them from implementing necessary improvements such as building better shelters, accessing quality feed, or hiring skilled labour.

The 6th ranked constraint was disease outbreaks and lack of veterinary services (GMS: 23.17), revealing that access to timely veterinary care is still a challenge, particularly in remote or underserved areas. The shortage of skilled labour ranked 8th (GMS: 15.24), highlighting the ongoing issue of manpower availability and competency in managing modern dairy practices. Interestingly, unhygienic milking practices were ranked 7th (GMS: 20.44), which, despite being a direct factor affecting milk quality and udder health, received relatively less importance from farmers, possibly due to underestimation of its impact or habitual oversight. Heat stress and harsh climatic conditions (Rank 9, GMS: 9.56) and limited access to training and extension services (Rank 10, GMS: 7.57) were found to be the least ranked issues. This could be attributed either to farmers' acclimatization to harsh weather conditions or a lack of exposure to the benefits of structured training programs.

The results reflect a blend of knowledge-related, infrastructural, economic and management-oriented constraints affecting cattle welfare. The prioritization of lack of awareness and improper handling indicates the need for

focused educational interventions, capacity building and policy measures that emphasize both legal compliance and practical training to promote better welfare outcomes in dairy farming.

This finding was in conformation with the findings of Burke (2006), Rathore *et al.* (2009), Dwivedi *et al.* (2011), Kumar *et al.* (2011) and Deb *et al.* (2025) [2, 5, 6, 9, 10].

Conclusion

The investigation clearly demonstrated that the most pressing cattle welfare issue in North Gujarat is the lack of awareness about animal rights and welfare laws. Improper handling and transportation, along with inadequate housing and shelter facilities, further contribute to poor welfare conditions. Feeding management deficiencies and economic limitations were also recognized as significant challenges, whereas issues such as disease outbreaks, unhygienic milking practices, and shortage of skilled labour received moderate attention. Heat stress and limited access to training were considered relatively less critical by farmers. The findings underline that cattle welfare in the region is primarily constrained by inadequate knowledge, infrastructural gaps, and financial limitations. Addressing these concerns through targeted capacity-building initiatives, strengthening veterinary services, and promoting cost-effective housing and feeding practices can substantially improve welfare standards. Policy-level interventions supported by awareness campaigns and extension services are essential to ensure that cattle welfare is integrated into sustainable dairy farming practices in North Gujarat.

Conflict of interest

The authors declare that there is no conflict of interest regarding the publication of this research paper. The research was conducted independently, and no financial, personal, or professional affiliations influenced the outcomes or interpretations of the study. All findings and conclusions are solely based on the data collected and analyzed in the Banaskantha and Mehsana districts, Gujarat.

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