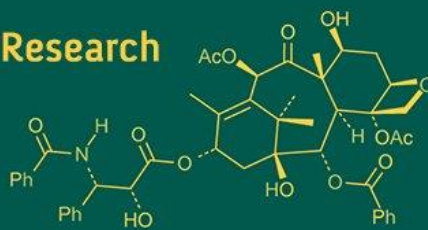


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Neharika Saxena
Assistant Professor, Veterinary
Public Health and Epidemiology,
Apollo College of Veterinary
Medicine, Jaipur, Rajasthan,
India

Dr. Bhimsen
Professor Raja Balwant Singh
College, Affiliated by
Dr. Bhimrao Ambedkar
University, Agra, Uttar Pradesh,
India

Dr. Vijay Kumar Singh
Professor and Head, Livestock
Farm Complex, Mahatma
Gandhi Veterinary College
Bharatpur, Rajasthan, India

Dr. Mamta
Assistant Professor, Department
of Livestock Production and
Management (LPM), DUVASU,
Mathura, Uttar Pradesh, India

Meetha Lal Meena
Ph.D. Research Scholar, Raja
Balwant Singh College, Affiliated
by Dr. Bhimrao Ambedkar
University, Agra, Uttar Pradesh,
India

Dr. Ankit Roy
Assistant Professor, Veterinary
Parasitology, Apollo College of
Veterinary Medicine, Jaipur,
Rajasthan, India

Shivraj Singh Dhakad
Ph.D. Research Scholar, Raja
Balwant Singh College, Affiliated
by Dr. Bhimrao Ambedkar
University, Agra, Uttar Pradesh,
India

Komal
M.Sc. (Agronomy), D.S.
Educational Institute, Iradat
Nagar, Agra, Affiliated with Dr.
Bhimrao Ambedkar University,
Agra, Uttar Pradesh, India

Corresponding Author:
Shivraj Singh Dhakad
Ph.D. Research Scholar, Raja
Balwant Singh College, Affiliated
by Dr. Bhimrao Ambedkar
University, Agra, Uttar Pradesh,
India

A study on housing management practices of crossbred cattle in Bharatpur district of Rajasthan

Neharika Saxena, Bhimsen, Vijay Kumar Singh, Mamta, Meetha Lal Meena, Ankit Roy, Shivraj Singh Dhakad and Komal

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Abstract

Buffalo rearing plays a crucial role in India's rural economy by contributing to milk production, employment generation, and livelihood security for small and marginal farmers. Despite India's leading position in buffalo population and production, productivity at the farm level is hampered due to inadequate management, feeding, housing, and healthcare practices. The present study was conducted to assess the major constraints faced by buffalo farmers in the Uchchian block of Bharatpur district of Rajasthan and to assess the existing buffalo management practices. A multilevel sampling technique was employed, and primary data were collected through personal interviews using a pre-trial structured program from 80 livestock rearing households (40 each from Nekpur and Terahiyen villages) during July-August 2024.

Information related to the socio-economic characteristics of farmers, herd composition, habitat, food, land ownership, education, disease management and other animal husbandry practices were analysed using descriptive statistical tools such as frequencies, percentages, means, and standard errors. The findings revealed that there are significant differences in herd composition, housing system, educational status, occupation, land-ownership patterns, and feeding practices between the two villages. Most of the farmers adopted semi-intensive management with different levels of green fodder, dry fodder and concentrate food. The incidence of the disease was comparatively low due to regular preventive health measures.

However, deficiencies were observed in scientific housing, balanced nutrition, record keeping, and modern livestock management practices. The study concludes that improving farmers' awareness through extension services, promoting scientific feeding and housing systems, strengthening veterinary support, and encouraging systematic record keeping can significantly increase buffalo productivity and profitability. These interventions will contribute to sustainable dairy development and improvement of livelihoods of rural pastoral households in the study area.

Keywords: Buffalo rearing, management practices, rural livelihoods, feeding practices

Introduction

India has the world's largest livestock population, accounting for 57.8% of the global buffaloes, serving as a vital engine for the agricultural economy, national food security, and rural livelihoods. Livestock rearing serves as an important socio-economic safety net and financial buffer against natural disasters such as drought, especially for landless laborer's, small and marginal farmers, who own about 87.7% of these animals. Globally, India occupies a dominant position in animal husbandry, ranking first in buffalo population, second in cattle and goats, and third in sheep.

Among these species, the river buffalo (*Bubalus bubalis*) plays a crucial role due to the improved feed conversion efficiency of low-quality crop residues, high disease resistance, and adaptability to various tropical environments. In India's dairy and meat enterprise, buffaloes contribute more than 51% of the total national milk production and contribute about 82% to animal product exports, as cow's milk and low-cholesterol meat profiles have a higher milk composition in fats, proteins and essential minerals with lower cholesterol than the meat profile. Despite this immense economic potential, productivity in the field's conditions is often hampered by suboptimal management practices, improper nutrition, mineral imbalances, and the detection of reproductive disorders. Since fodder availability, soil composition, and environmental stresses vary widely across different agro-climatic

zones, field-level livestock management methods should be investigated at the local level to identify operational bottlenecks and design region-specific intervention strategies.

Taking into account these socio-economic and regional factors, the present investigation was conducted to evaluate the existing livestock management practices and to identify the major operational, nutritional, and management constraints faced by buffalo farmers in Bharatpur district of Rajasthan.

Materials and Methods

The present investigation was conducted in the rural agricultural landscape of Uchain tehsil located within Bharatpur district of Rajasthan, India. A systematic multi-step sampling framework was employed to collect primary data on local livestock management practices, herd demographics (sex ratio, age distribution, and available breeding stock), and farmer socioeconomic profiles. The data acquisition focuses on major rural settlements within the tehsil, including Nekpur and Terahyan villages, as well as nearby sampling units representing regional smallholder dairy operations. The primary information was collected through face-to-face personal interviews using a pre-tested, structured survey program designed to ensure standardized data capture at all sample locations.

The key demographic parameters listed for each respondent included age, educational status, primary occupation, size of land holdings, and years of animal husbandry experience. Due to the complete absence of formal, written record-keeping systems among smallholder farmers in the targeted villages, quantitative and qualitative parameters were documented using structured memory-recall methodologies. To preserve data integrity and reduce recall bias, responses were cross-verified on-site through direct field observations and key-informant interviews with experienced community members. Subsequently, the compiled field metrics were coded, tabulated, and analyzed using standard scientific methods and descriptive statistical tools and descriptive statistical tools to generate a comprehensive assessment of livestock production dynamics and management strategies within the region.

Results and Discussion

Relevant data about the management practices of buffaloes in two villages have been collected from Bharatpur, Rajasthan and have been thoroughly analysed, tabulated and presented for discussion in various heads. The results are presented for the present investigation. In order to better understand, the buffalo enterprises of the village farmers should take care of the performance of the buffaloes in terms of management and feeding practices and an insight should be presented. Record keeping is required to detect these practices. The records kept not only reflect the economic balance of the buffalo enterprises, but also cause decisions to be taken to maintain them. Benefit buffaloes with this item in Uchain, Block, Nekpur and Terahyan.

1. Buffalo's statistics

Data collected in respect of number of buffalo, male, calf, female calf and bull/bull from different villages. The buffaloes kept in the selected village were not the same. The study is conducted in the month of July and August 2024.

There is no physical change in the number of male and female buffaloes during the study period of July and August 2024. The number of female calves was less in Nekpur village as compared to Terahyan village. The total number of buffaloes in the form of male, female and bull/bull in Nekpur village was 95, 91 and 24, while 72 males, 81 females and 38 bulls/bulls were found in Terahyan village.

2. Housing system for buffaloes

The data has been collected regarding the system of housing of Buffaloes. In this connection the system of 'housing of Buffaloes was collected as Loose, close and under tree from the different villages of Uchain Block. The Buffaloes had housing system in the selected household of different villages were not the same. Regarding the open housing that more Buffaloes was found almost same. The total number of Buffaloes constituting Loose house, under tree and close house were 13, 11 and 22 in Nekpur village however, these numbers were high 18, 14 and 24 for Terahyan village, respectively.

Mayne *et al.* (1986) ^[13] and Sharma and Singh (2002) ^[25] found that grazing had very much effect on milk yield, while Yadav and Gupta (1983) ^[31] reported the open and close housing system may affect the milk yield. However, Das (1983) ^[4] and worked on regarding the feeding of milk of newly born calf and found that the management can affect the calf in some extent.

3. Education status of farmer

Data collected in connection of educational status of the farmers in selected villages of Uchain Block. Data collected on various aspects viz., illiterate, Primary, Middle, High School, Intermediate, Graduates and Post-graduate for both the villages. Illiterate peoples were more in Nekpur village as compared to Terahyan village. But no one illiterate in Nekpur and 12 farmers were found PG in Terahyan village. The number of farmers constituted of illiterate, Primary, Middle, High School, Intermediate, Graduate and Post graduate were 2, 1, 5, 8, 10, 14 and 4, out of 40 Block S households for Nekpur village, while out of 40 household of Terahyan village were 3, 1, 4, 6, 13, 14 and 3 respectively.

4. Occupation of farmers

The data has been collected in connection of occupation. Statuses of the farmers were selected villages of Uchain Block. Data collected on various aspects viz., Labors, Farmer, Serviceman, Businessman, Ex-service man of both the selected villages. The occupation status is labour 6, farmers 14, service man 13, Ex-service man 5, business man 6 in Nekpur village and Terahyan village status 6, 17, 11, 9 and 1 respectively. There was no any businessman in both the villages.

5. Land holding status

The data collected in connection with number of small, medium and large farmers from different villages of selected Uchain Block. Small farmers, medium farmers and large farmers in the selected household of different villages were not the same. No large farmers were found in the both villages. The number of farmers constituted as small farmers, medium farmers and large farmers were 18, 12, 15 in Nekpur village out of 40 households, whereas 16, 9 and 17 for Terahyan village respectively. Nataraju and

Chanuegowdo (1986) ^[15] and Singh (1986) ^[24] found the close agreement to the study.

6. Types of floors for the buffaloes

The data collected in connection with the types of floors, mud, brick mud, slope, drainage channel, breeding material used, provision of water through the different selected villages of Ucchain Block. The Buffaloes had floors system in the selected household of different were the same in both villages. This report is in close agreement with reported by Yadav and Gupta (1985) ^[31], and Mahipal and Kherde (1991) ^[10]. However, Rao *et. al* (1992) ^[18] found the contradictory reports in these aspects.

7. Fodder feed to animals

The data has been collected regarding the system of fodder feed to Buffaloes. The system of fodder feed to Buff aloes was collected as dry, green and concentrate from the different villages of Ucchain Block. Home-prepared concentrates were used extensively and it was almost the same in both the villages. However, the amounts of dry and green fodder were given in a same trend for both the villages. This indicates that farmer has given more emphasis to the green fodder instead of concentrate. Bacon (1983) ^[1] has also been given preference to green fodder. This report is collaborated with Rao and Naidu (1982) ^[17] and Tripathi and Gupta (1982) ^[26]. Gill (2003) ^[5] found the contrary results in comparison of present results.

8. Concentrate mixture status

The data collected in connection with number of men, women, and children from different villages of Ucchain Block. The concentrated was given to the animals were same in both the villages respectively. This report is in close agreement with reported by Malik *et al.* 2009 ^[11].

9. Feed supplied to the animals

The data has been collected in connection of feed status of the farmer in selected village of Ucchain Block. Data collected on various aspects viz. man, women for both the villages. The men were more in Nekpur in comparison of Terahyan. The number of farmers as man, women were 22 and 14, 15 children out of 40 household for Nekpur village, while out of 40 household of 22 and 15, 07 children in Terahyan village were respectively.

Singh *et al.* (2003) ^[22] and Raj Kumar (2004) ^[16] found the same results, the data collected in connection of drinking water for Buffaloes provided by man, women in selected villages of Ucchain Block. Data collected on various aspect viz. man and women for both villages.

10. Water service to animals

The Buffaloes had water in the selected household in different villages were not the same. The study has been conducted in the month of July and August 2024. The number of Buffaloes drinking water by man, woman has not materially changed during the study period July and August 2024.

The total number of men constituting as man, women and children were 20, 14 and 08 for Nekpur, whereas 21, 13 women and 10 children was found in Terahyan village in Bharatpur District.

11. Diseases control

Irradiations measures were adopted by the farers and rate of illness of Buffaloes was less in both the selected villages of Bharatpur district of Rajasthan. Almost same report in Murrah Buffaloes. Merium *et al.* (2016) ^[14] found the same results.

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