NANGARHAR UNIVERSITY
INTERNATIONAL JOURNAL OF BIOSCIENCES
ORIGINAL ARTICLE
e-ISSN: 2957-9988
NUIJB Vol 2, Issue 4 | 2023

Received: 20, Sep 2023 Accepted after revision: 22, Dec 2023 Published Online: 30, Dec 2023

Study of Socio-Economic Status and Calf Management Practices Followed by Kunari Cattle Owners in Kunar Province, Afghanistan

Safi Faridullah[1*], Janati Anayetullah[1], Karimy abdul Rasool[2], Rodwall Imranullah[3], Niazi Mir hatam[3]

[1]Department of Animal Sciences, Faculty of Agriculture, Sayed Jamaluddin Afghani University, Kunar, Afghanistan

[2]Department of Animal Sciences, Agriculture Science Faculty, Badghis University, Badghis city, Afghanistan

[3]Department of Animal Sciences, Faculty of Agriculture, Nangarhar University, Nangarhar, Afghanistan

*Corresponding author email: faridullahhimmat555@gmail.com

ABSTRACT

Background: The purpose of this study to invistigate the socio-economic status and calf management practices followed by Kunari cattle farmers in three districts of Kunar provimce. Livestock rearing is crucial in Afghanistan for food security, involving both poor and wealthy farmers. Cattle are raised for milk, meat, and power. Livestock plays a vital role in dry rural areas, and farmers rely on agricultural byproducts for feeding. In Kunar province, small and marginal farmers and landless laborers raise 2-4 animals per household on average, despite limited land holdings of 1.5 to 2 acres.

Materials and Methods: The investigation was conducted properly in eastern region Kunar province, Afghanistan. Three districts namely (Watapur, Dara-E-Peach, and Chapa Dara) were randomly selected. Cattle owners with 2-10 Kunari cattle were purposively chosen. Seven villages from each district were randomly selected, and Eight respondents that random were chosen from each village, resulting in a sample size of 170 cattle keepers. Microsoft Office Excel will be utilized for organizing the questionnaire's data and analyzed using SPSS 26.0.

Findings: Farmers lacked awareness and knowledge about the importance of calf rearing management practices, resulting in a lack of scientific care for newborns. Illiteracy was a significant issue, despite having sufficient land for agriculture and animal husbandry. Traditional methods were followed for newborn care, with limited understanding of the significance of hygiene and sanitation. Lack of access to veterinary facilities may have contributed to this situation.

Conclusion: Animal husbandry practices primarily involved cows and elderly bulls, forming an essential part of their livelihood. Traditional methods were followed for the care of newborns, with limited awareness of the significance of hygiene and sanitation. This lack of understanding could be attributed to the absence of veterinary facilities.

Keywords: Socio-economic status, Calf, Kunari cattle, Management practices, Kunar province, Afghanistan

INTRODUCTION

Livestock sector with huge growth potential in Afghanistan. Livestock rearing is also the most inclusive agricultural production activity in Afghanistan, with both poor and wealthy farmers owning livestock. Afghanistan has to produce livestock if it is to have a stable supply of nutrient-dense food, particularly in arid

rural areas where farmers mostly depend on cattle for revenue (Zafar, 2003). Cattle are raised for milk and meat production, as well as for motile power for other tasks such as village transit, irrigation, and manure generation.

In general, the animals are fed agricultural waste and crop residues. In Kunar province, Afghanistan, the majority of animal rearing is done by small and marginal farmers as well as laborers without land, with 2-4 animals per farm household. These owners have very little land on average between 1.5 and 2 acres. This is the kind of input available in most of the areas. It is typical throughout the nation for farmers to own multiple cows, but even the tiniest and poorest farmers maintain at least one cow to meet their subsistence needs for dairy products. There are regional variations in the care of cattle as well, based on the practices of cattle management. Milking cows are generally housed in communally managed compounds in the eastern provinces, from Nangarhar in the east to Kandahar in the south. However, a large number of the cows may never be allowed to graze (Zafar, 2003).

Cattle with greater development, health, and productivity benefit from effective calf raising. Scientific calf rearing is therefore essential for conserving and protecting germplasm as well as deciding the future income and sustainability of the dairy industry. From the time they are in the womb until they are born, calves require individualized attention and care. This is because they are nearly defenseless against illness immediately after birth (Maousami *et al*., 2013).

Due to lack of detailed information on socio-economic status and on calf rearing management practices followed by Kunari cattle keepers of Kunari province, Afghanistan; Policymakers have not been able to devote their entire attention to these critical issues. So obtaining first-hand information on these aspects will be imperative and will help in forming better policies. The objective of this study was to find out the socio-economic status and calf rearing management practices followed by Kunari cattle raising owners in Kunar province, Afghanistan.

MATERIALS AND METHODS

Study Area

The current study was carried out in the eastern part Kunar province, Afghanistan. Three districts, namely Watapur, Dara-E-Peach and Chapa Dara, were selected randomly for study purposes. The purposively sampling method was used to select respondents. Cattle owners with a minimum of 2-10 Kunari cattle were purposively selected for investigation. Seven villages each from the Watapure, Dara-E-Peach and Chapa Dara districts were randomly selected. Eight responders were then chosen at random from each village. As a result, 170 livestock keepers were included in the sample.

Samples Collection

Various characteristics related socioeconomic status and calf rearing management practices were enlisted with the assistance of specialists and literature. Eight Kunari cattle responders with cattle rearing experience were interviewed in each chosen village. First, the eight respondents were asked to identify various practices related to cattle rearing in their village. Finally, a few parameters were considered for the current investigation based on the pooled information. Each responder was asked about their socioeconomic situation and calf rearing management procedures separately, without interaction with the other farmers. Since a result, all of the respondents had a unique opinion.

Statistical Analysis

The available qualitative and quantitative data collected from the questionnaire will be organized by Microsoft Office Excel and analyzed by using SPSS 26.0. All the respondents recorded in the interview schedule were transferred to the master sheet to describe the profile of the owners/respondents (Age, Education, Land holding, Herd size, and size of family) and calf rearing management practices followed by Kunari cattle raising owners in Kunar province.

RESULTS AND DISCUSSION

Socio-economic status of the owners

The summary of the data collected on various socioeconomic status factors and calf rearing management practices in the experimental area. It was found that 49.4% respondents were within the age group 41-50 years (Table 1) followed by 37.6% in the age group of 26-40 years, 11.2% were above 60 years and 1.8% were up to 25 years. The findings showed that older people than those in other age groups were in responsibility of the majority of the houses. For that purpose, the respondents of old and middle age group were more involved in Kunari cattle raising activities than the respondents of young age group. These results are consistent with those of (Saha et al., 2010) and (Rajavi et al., 2012), who found that most farmers were between the ages of 41 and 50. These results conflict with those of (Kakoty, 1975) and (Choudhary, 2011), who found that the majority of dairy farmers (45.83%) were in the middle age group However, this is in line with research by (Gadhwal, 2011) and (Manohar, 2012), which found that the majority of dairy farmers 52.50 and 54.37% were old, respectively.

One crucial factor in the acceptance of new inventions is the respondents' level of education. Analysis data on education as presented in Table 1. It reflected that 72.9% among the participants in the research area were illiterate followed by 21.2% with primary level education, 4.1% with secondary /middle level education, 1.2% with high school level education while only 0.6% respondents were graduate level. These findings revealed that Kunari cattle rising in Kunar province is in the hands of the illiterates and lower educated section of the population. These results are consistent with the findings published by (Tailor et al., 2005) but not with findings of (Choudhary, 2011) and (Rathod et al., 2011).

The details of the family size and structure of the respondents in Kunar province is presented in Table 4.1. According to the overall findings, 81.8% of the respondents had families with more than eight people. by 17.1% having 7-8 members, 0.6% respondent’s had up to 4 and 0.6 % respondents had 5-6 members, respectively. These finding are in conformity with (Choudhary, 2011) and (Tailor et al., 2005) who revealed that most dairy farmers had joint families.

The detail of the main occupation of the respondents in Kunar province is presented in (Table 1). The primary occupation of those involved in the research area was found as Agriculture + labor which accounted for 91.2% while service sector composed of 8.8% of all occupation sectors. These findings almost confirm the results published by (Rajadurai et al., 2018), who found that 51.4% of the respondents employed as the primary farmers and 48.6% as secondary landowners.

The details of landholding pattern of the respondents in Kunar province are presented in Table 4.1. Different units of land measurement are used in this province. The unit of land area in each district was used for measurement. In the districts of Kunar province where study was conducted two districts, namely Watapur and Chapa dara where people of one tribe live, the Daria unit is used to measure the land which is equal to 444.44m^2. The districts wise landholding data revealed that 54.3% of the owners had up to 10 Daria (marginal)

followed by 34.2% with more than 20 Daria and 7.8% had 16-20 Daria (medium) while only 3.5% owners had 11-15 Daria (small) land holdings, respectively in Chapa dara and Watapur districts of Kunar province. The unit of land measurement in Dara-E-Peach district is Geday which is equal to 55.50m^2. The data conducted from Dara-E-peach district revealed that 50% of the owners having 16-20 Geday (medium) landholdings followed by 28.5% having up to 10 Geday (marginal) and 17.8% belonged to large category more than (20) Geday while only 3.5% owners had 11-15 Geday (small) landholdings, respectively. The results of (Rathod et al., 2011), who found that the majority of the owners were marginal farmers (33%) followed by small farmers (28%) and big farmers (18%) are not consistent with the findings of (Rajput and Tripathi, 2009) who told that majority of animal owners had large land holding but are consistent with (Gadhwal, 2011) who indicated that 62.50 percent had small holdings in land.

The number of pure adult Kunari cattle kept by respondents in the research area was used to determine herd size. According to the data presented in Table (4.1) majority (91.2%) of respondents had a small (1-5 cattle) herd size followed by 8.8% with medium (6-10 cattle) herd size and there is no more than 10 numbers in herds size of Kunari cattle. According to the data animal husbandry is the Province's second largest sector after agriculture (Shinde et al., 1994) stated that the average number of animals kept by farmers was between two and four, while (Manohar, 2012) observed that 62.50 percent of respondents had an insignificant herd size.

Table 1: Show the socio-economic status of the owners/respondents

Variables	Category	Respondents	
		Frequency	Percentage
Age (Years)	Up to 25	3	1.8
	26-40	64	37.6
	41-50	84	49.4
	>60	19	11.2
Education	Illiterate	124	72.9
	Primary	36	21.2
	Middle	7	4.1
	High school	3	1.8
Family size	Up to 4	1	0.6
	5-6	1	0.6
	7-8	29	17.1
	>8	139	81.8
Main occupation	Service	15	8.8
	Agri/labor	155	91.2
		Watapur and chapa dara (Darai)	Dara-E-peach (Geday)
Land holding	Marginal(up to 10)	62(54.3)	16(28.5)
	Small(11-15)	4(3.5)	2(3.5)
	Medium(16-20)	9(7.8)	28(50)
	Large(>20)	39(34.2)	10(17.8)
Herd size	Small(1-5)	155	91.2
	Medium(6-10)	15	8.8
Values in parentheses indicates (%)			

Calf management practices

According to the information presented in Table 2, the different calves rearing management procedures used by Kunari cattle raising owners in the research region revealed that a majority of those surveyed (98.5%) observed calving and cared for the calves after parturition. A majority of the owners (96.3%) did not clean the calves immediately after calving, whereas those who responded cleaned the neonates soon after delivery and let their dam to lick their calves. These results contrast the results reported by (Kumar et al., 2006) as well as (Rathore et al., 2010). It was also discovered that a majority of the respondents did not ligate, removed and clean the naval cord, instead allowing it to fall off naturally.

The results of this study are consistent with (Ahmad et al., 2009), who found in a research that none of the farmers cut and disinfected the navel chord, whereas some of the formers carried out these practices. The small proportion of respondents that used these methods was most likely due to a lack of knowing. As a result, additional efforts are needed to encourage farmers to adopt these methods.

A large percentage of participants (80%) let calves to milk only one teat, whereas the other 20 percent let neonates to feed on both teats of their mothers for a typical time of between one and two minutes. According to the findings of the present research, a majority of those surveyed did not offer calf starter to their calves. It could be because of dairy producers' lack of knowledge about the dietary requirements of developing newborns, which cannot be satisfied alone by providing milk.

Table 2: Show the management practices for calf rearing across herd size

Existing practices	Frequency	Percentage
Attended the cattle at the time of calving		
a. Yes	167	98.5
b. No	3	1.5
After parturition, quickly clean the calf.		
a. Yes	164	96.3
b. No	6	3.7
Ligature, cutting, and disinfection of the calf's naval chord		
a. Yes	168	98
b. No	2	2
Colostrum feeding to the calf		
a. Within one hours of birth	164	94
b. Two to four hours of birth	0	0
c. After expulsion of placenta	6	6
colostrum feed amount		
a. adlib suckling		0
b. one quarter	136	80
c. two quarter	34	20
Provide calf starter		
a. Yes	0	0
b. No	170	100
Provide green fodder to the calf		
a. Yes	167	97
b. No	3	3
Dehorning practices		
a. Yes	0	0
b. No	170	100
Castration of male calf		

a. Yes	16	9.4
b. No	154	90.6
Bedding material to the calf		
a. Yes	136	80
b. No	34	20

According to the findings of this survey, most of respondents practiced colostrum feeding to newborn calves in order to ensure that they would live. Most of farmers provided colostrum to young calves within an hour of birth. Feeding colostrum in early hours after birth is highly beneficial as the capacity of new-born absorb antibodies was active only for few hours after birth. According to (Mengesha, 2013), colostrum has a high quantity of immunoglobulins along with other nutrients which are crucial for lamb health and provide protection against a range of pathogenic pathogens. Because of their weakened immune systems and lack of prior infection contact, newborn calves are at risk for illnesses that are transmissible and inadequate care.

Most of the respondents offered fodder that was green from one to two months after delivery. It could be because owners have become more aware of the need of include fodder in calves' diets, which stimulates the growth of rumen functions at a young age. It was observed from overall study area that most of Respondents were not practicing dehorning. It might be due to a lack of understanding about the benefits of removing the horn procedure. It was also shown that the majority of participants did not follow castration of male calves. These findings are equivalent to those of (Kumar et al., 2006) but different from those of (Malik et al., 2005). This could have been because just the owners who have maintained the animals for work adopted this method; otherwise, they discarded of them as soon as possible. Bedding materials like straw were provided to calf by most of the respondents. It was also observed that majority of the respondents provided bedding materials in order to keep their calves warm throughout the winter.

CONCLUSION

Thus, we can conclude out that farmer was not properly informed on the value of calf raising management practices. They were not following scientific management and care of new born. Probably it was due to their lack of knowledge. Illiteracy was a major problem there although they were holding sufficient land for agriculture and animal husbandry purposes. Joint family is prevalent there. Mainly women and old men were involved in animal husbandry practices and animal husbandry was an integral part of their living being. Regarding care of new born they were following traditional methods only. They were not well aware about importance of hygiene and sanitation in care of new born calf. It was may be due to lack of veterinary facilities.

Authors Contributions: F.S Conceptualization, methodology, investigation, A. J analysis, resources, K. R. original draft preparation, I. R review and editing, M. N. visualization, supervision, all authors have read and agreed to the published version of the manuscript.

REFERENCES

Ahmad, S., Yakoob, M., Hashmi, N., Zaman, M. A. and Amjad, M. S. 2009. Farmer's attitude towards interventions regarding calf health care and management practices under field conditions. Pakistan Veterinary Journal, 29(3):125- 28.

Choudhary, M.L. (2011). Study on sheep management practices in arid and semi-arid region of Rajasthan. M.V.Sc Thesis, Rajasthan University of Veterinary and Animal Science, Bikaner.

Gadhwal, R.S. (2011). Study on management practices for dairy cattle in north-east arid and semi- arid region of Rajasthan. M.V.Sc Thesis, Rajasthan University of Veterinary and Animal Science, Bikaner.

Kakoty, H.N. (1975). To study the impact on adoption of proved practices by dairy farmers around Gauhati city, Assam, M.Sc. Thesis, Jawaharlal Nehru Krishi Vishwavidhyalaya, Jabalpur.

Kumar, U.; Mehla, R. K.; Chandra, R. and Roy, B. (2006). Studies on managemental practices followed by the traditional owners of Sahiwal cows in Punjab.*Indian J. Dairy Sci*. **59**(2): 100-105.

Malik, B.S.; Meena, B.S. and Rao, S.V.N. (2005). Study of existing dairy farming practices in Uttar Pradesh. *J. Dairying. Foods & H.S*. **24**(2): 91-95.

Manohar, D.S. (2012). Study on Managemental Practices of Buffaloes in Jaipur District of Rajasthan. M.V.Sc Thesis, Rajasthan University of Veterinary and Animal Science, Bikaner.

Maousami, Singh, B. P., Kumar, R., Kumar, V. and Dohare, A. 2013. Analysis of calf management practices followed by buffalo owners. Journal of Animal Sciences Advertisement, 3(3):129-33.

Mengesha K, Gurmu EB, Hussein D (2013). Major management and health problems of calves in dairy farms in and around Mekelle. REDVET Rev Electrón Vet: 14.

Rajput, D.S.; Tripathi, Hema (2009). Socio-economic profile of Raika camel pastoralists of Rajasthan. *Journal of Camel Practice and Research* **16**(2): 195-200.

Rathod, P.K.; Landge, S.; Nikam, T.R.; Vajreshwari, S. (2011). Socio-personal profile and constraints of dairy farmers, *Karnataka Journal of Agricultural Sciences,* **24**(4): 619-621.

Rathore, R. S.; Singh, R.; Kachwaha, R. N. and Kumar, R. (2010). Existing management practices followed by the cattle keepers in Churu district of Rajasthan. *Indian J. Anim. Sci.***80** (8): 798–805.

Rajavi, S.S. 2012. A study of socio-economic profile of milk producing farmers in the Sangli district. *Inter. Interdisciplinary Res. J.,* **2**(5): 92-99.

Rajadurai A, Rajaganapathy V, Ganesan R, Ponnuvel P, Natchimuthu K, and Sreekumar D. (2018). Socio-economic profile of the dairy farmers in Puducherry. *Int. J. Adv. Res. Biol. Sci.* **5:** 91-95.

Saha, D., Akhand, A.H. and Hai, A. 2010. Livestock farmer's knowledge about rearing practices in Ganderbal district of Jammu & Kashmir. *Indian Research Journal of Extension Education,* **10**(2): 15-19.

Shinde, S.B.; Boite, H.S.; Belhe, N.D. (1994). A field survey of adoption of improved dairy management practices by farmers, In: National Symposium on Livestock Production & Management, Anand, Gujrat, India.

Tailor, S.P.; Dangi, P.C.; Yadav, C.M.; Meena, R.K.; Bunkar, N.K. (2005). Socio-economic status of shepherd in Sonadi breeding tract. *Indian Journal of Small Ruminants* **11**(2): 198-204.

Zafar Mustafa. (2003). First Draft Country Report on the Status and Perspectives of the Animal Genetic Resources Development and Conservation in Islamic Republic of Afghanistan FAO-Afghanistan. p,29 31.