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Study on occurrence of ovine anemia

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Abstract

The present study entitled "Study on occurrence of ovine anemia" was conducted to determine the occurrence of anemia in sheep presented to the Veterinary Clinical Complex (VCC), College of Veterinary Science, Gannavaram and in sheep flocks of Krishna, Guntur and Nellore districts of Andhra Pradesh during the period from July 2025 to February 2026. A total of 3,358 sheep were examined, of which 651 were diagnosed with anemia, giving an overall occurrence of 19.38 per cent. Among the different breeds Nellore Jodipi sheep (49.77%) had the highest proportion of anemic sheep followed by Nellore Brown (34.72%), Macherla (12.75%), others (2.46%) and Nellore Palla (0.3%). The highest occurrence was observed in lambs aged between zero to 6 months (59.45%), followed by 6–12 months (17.82%), above 24 months (15.05%) and 12–24 months (7.68%). Highest number of anemic cases were recorded in ewes (69.20%) than in rams (30.72%).

Keywords: Anemia, Sheep, Occurrence

1. Introduction

Anemia is a major health constraint in sheep production, characterised by reductions in red blood cell count, haemoglobin concentration or packed cell volume that impair the blood's oxygen-carrying capacity (Katsogiannou *et al.* 2018) [3]. Common causes include gastrointestinal parasitism, nutritional deficiencies, blood loss and infectious diseases. Clinically affected animals often show pale mucous membranes, weakness, stunted growth, weight loss and reduced productivity, while in severe untreated cases anemia leads to recumbency and death. Hence determining the occurrence of anemia is essential for understanding its burden in the sheep population, for planning effective control, prevention and flock health management strategies.

Materials and Methods

Sheep presented to the small ruminant medicine ward of the Veterinary Clinical Complex (VCC), College of Veterinary Science, Gannavaram and sheep from flocks in Krishna, Guntur and Nellore districts were screened for anemia. Faecal samples were examined to confirm gastrointestinal parasitic infection and to identify the underlying parasitic cause. Blood smears were examined to rule out haemo-protozoan infections. Blood samples were collected from clinically suspected sheep for haemato-biochemical analysis. The diagnosis of anemia was established based on clinical findings and haemato-biochemical parameters.

Results and Discussion

Occurrence of ovine anemia

In the present study 3,358 sheep were screened for anemia and 651 animals were diagnosed as anemic, giving an overall occurrence of 19.38 per cent (Table 1; Figure 1). This finding was similar to earlier works reported by Adehanom *et al.* (2015) [1] as 16.0 per cent in Ethiopia, Choudhari *et al.* (2021) [2] as 24.73 per cent in Maharashtra and Rajendra *et al.* (2021) [5] as 13.69 per cent in Namakkal, Tamil Nadu. On the converse higher prevalence was reported by Prabhakar and Mounika (2024) [4] as 30.56 per cent in Andhra Pradesh and very high prevalence of 83.0 per cent was recorded by Swamy *et al.* (2025) [6] in Karnataka. The

variation in occurrence observed among different studies might be attributed to differences in geographical location, climatic conditions, flock management, nutritional status, parasitic burden, breed susceptibility and diagnostic criteria used for the detection of anemia.

Breed-wise occurrence of anemia in sheep

The highest prevalence of anemia was observed in Nellore Jodipi sheep (49.77%), followed by Nellore Brown (34.72%), Macherla sheep (12.75%), others (2.46%) and Nellore Palla (0.3%) (Table 2; Figure 2). These differences showed that anemia rates varies greatly by breeds. Factors such as genetic traits, breed adaptability, resistance to parasites, nutrition and managerial practices played a role in occurrence of anemia.

The particularly high anemia occurrence in Nellore Jodipi sheep was probably associated with increased susceptibility to gastrointestinal parasites than the other breeds, particularly *Haemonchus contortus* a major blood-feeding nematode causing anemia. This suggests that genetic traits and breed adaptability play a key role in parasite resistance and anemia risk in sheep (Swarnkar *et al.* 2020) [7].

Age-wise occurrence of anemia in sheep

The age-wise analysis on occurrence of anemia in sheep showed the highest occurrence in 0–6 months age group (59.45%) followed by 6–12 months (17.82%) and above 24 months (15.05%), whereas the lowest occurrence was recorded in the 12–24 months age group (7.68%) (Table 3 and Figure 3). These findings indicated that younger lambs were more susceptible to anemia than adult sheep. Comparable patterns were reported by Rajendra *et al.* (2021) [5] who reported the highest incidence of anemia in lambs below 3 months (30.56%) followed by 3–6 months (27.78%) and Swamy *et al.* (2025) [6] who observed the highest prevalence in sheep below 6 months of age (87.25%) and the lowest in older sheep. The increased occurrence in younger animals might be due to immature immunity, nutritional deficiencies and greater susceptibility to parasitic infections. The lower occurrence observed in sheep aged between 12–24 months suggested better immunity and adaptation to anemia causing factors, while the moderate occurrence in sheep above 24 months might have been associated with chronic parasitism, nutritional stress or physiological factors.

However, the present findings differed from Choudhari *et al.* (2021) [2], who reported a higher prevalence of anemia in sheep above one year of age (75.64%) than in those of below one year (24.35%). This variation might have been due to differences in managerial practices, nutritional status, environmental conditions and parasitic burden.

Gender-wise occurrence of anemia in sheep

Gender-wise anemia was more common in ewes (69.20%) than rams (30.72%) (Table 4; Figure 4). Similar findings were reported by Choudhari *et al.* (2021) [2] and Swamy *et al.* (2025) [6], who observed a higher prevalence in female sheep. The higher occurrence in ewes might be due to physiological demands such as hormonal changes, pregnancy, lactation and lower red cell levels when compared with males.

However, the findings differed from Rajendra *et al.* (2021) [5] who reported a slightly higher prevalence in rams (55.56%) than ewes (44.44%), this variation was attributed to differences in management, nutrition, environment and the study sample.

The study demonstrated that ovine anemia was an important

health ailment in sheep, with an overall occurrence of 19.38 per cent. The occurrence was highest in Nellore Jodipi sheep, lambs below six months of age and ewes. These findings emphasize the need for early diagnosis, treatment of underlying cause and appropriate management strategies for the effective control of ovine anemia.

Table 1: Occurrence of ovine anemia

S. No	Total number of sheep screened	Total number of anemic sheep	Occurrence percentage (%)
1.	3358	651	19.38

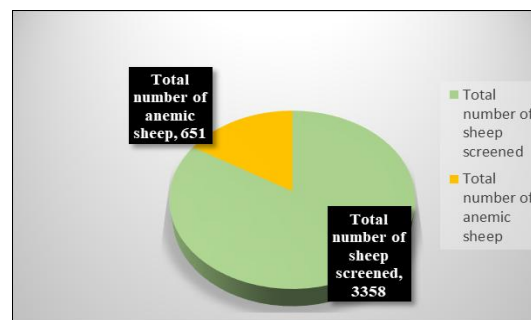


Fig 1: Pie diagram showing occurrence of anemia in sheep

S. No.	Breed	Number of sheep with anemia	Occurrence percentage (%)
1.	Nellore Jodipi	324	49.77
2.	Nellore brown	226	34.72
3.	Macherla	83	12.75
4.	others	16	2.46
5.	Nellore Palla	2	0.3
	Total	651	100

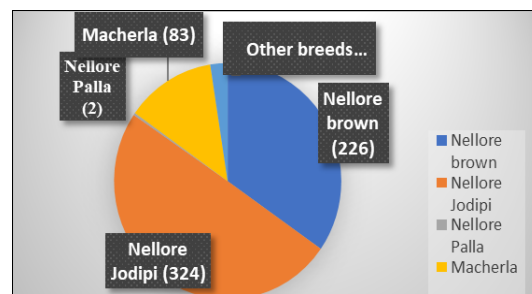


Fig 2: Pie diagram depicting breed wise occurrence of ovine anemia

Table 3: Age-wise occurrence of anemia in sheep

S. No	Age (months)	Number of anemic sheep	Occurrence percentage (%)
1	0-6	387	59.45
2	6-12	116	17.82
3	12-24	50	7.68
4	>24	98	15.05
	Total	651	100

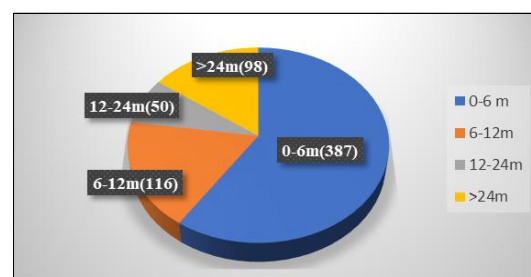
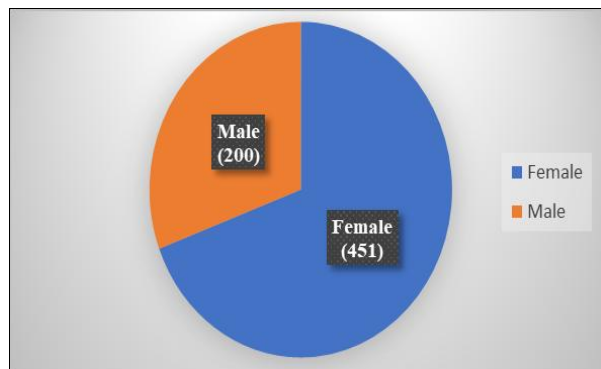


Fig 3: Pie diagram showing age wise occurrence of ovine anemia

Table 4: Gender-wise occurrence of anemia in sheep

S. No.	Gender	Number of anemic sheep	Occurrence percentage (%)
1.	Female	451	69.28
2	Male	200	30.72
3	Total	651	100

**Fig 4:** Pie diagram representing gender wise occurrence of ovine anemia**Conflict of Interest**

Not available

Financial Support

Not available

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