

ABSTRACT

Examination of the cellular components of blood constitutes one of the most important laboratory investigative procedure in the diagnosis of animal diseases. In Sri Lanka, however, the lack of reference values for many domesticated species has greatly limited the interpretation and use of clinical haematological data as an aid in disease diagnosis. This study has established normal blood values for the Lanka Boer goats, sheep and some of the breeds of cattle which could be used as baseline values for interpretation of data from diseased animals.

Haematological analyses were performed in 121 clinically healthy Lanka Boer goats (53 female; 86 males) of different ages (1-3m; 4-12m; 2-3y; 4-8y) managed at the Goat Breeding Station, Kotukachchiya. The packed cell volume, number of erythrocytes haemoglobin, mean corpuscular volume, and mean corpuscular haemoglobin were higher in the neonates compared to animals of other age groups. On the other hand, the mean corpuscular haemoglobin concentration remained relatively constant showing no age-related changes. In goat kids between 0 and 3 months of age the lymphocyte and neutrophil counts were almost identical; in animals between 4 and 12 month and the males between 4 and 8 years the neutrophil count predominant over the lymphocytes. The eosinophil counts were highest in animals between 4 months and 3 years. In general, the findings of this study mirrored many of age-related haematological changes reported for this species in the literature.

The study on sheep haematology was performed 41 clinically healthy female sheep (2-4 years) managed at the national livestock board farm in Bingiriya. The values obtained in this investigation were parallel to those reported in the literature although there were differences in the absolute values. The erythrocyte counts were spread over a wide range with a mean of $12 \times 10^{12}/l$. Haemoglobin content and the packed cell volume also varied but they did show a normal distribution. The erythrocyte sedimentation was negligible when measured over one hour. The leukocyte picture was similar to that reported in the literature in which the lymphocytes predominated over the neutrophils. The eosinophils were also high and this may reflect some parasitism in the animals studied although they were regularly drench with anthelmintics and appeared clinically healthy on physical examination.

Studies on bovine haematology were conducted on a total of 238 cows of three breeds (94 Friesian; 115 Ayrshire and 28 European cross-bred animals) managed in three livestock farms. In the Friesian and Ayrshire breeds of cattle the age-related haematological changes were examined in four groups of animals based on age which varied from 0-6months, 6-12 months, 1-3 years and 3-8 years. All European cross-bred cattle studied were lactating and were between 3 and 7 years of age. The erythrocyte counts were highest in the calves between 0-6 months with a gradual decline in the counts with advancing age. Similar alterations were present in the haemoglobin concentration and packed cell volume but the variations was less obvious. The mean corpuscular haemoglobin concentration varied considerably in the European cross bred lactating cows compared to those recorded with the other two breeds. The leukocyte counts obtained for all breeds were within the range reported for the species. In the differential counts, the lymphocytes predominated over the neutrophils and the eosinophils showed an increase with age.