The influence of sex, age and season on the haematological profile of alpacas (Vicugna pacos) in Central Europe

T. Husakova, L. Pavlata, A. Pechova, L. Tichy, K. Hauptmanova

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The aim of this study was to establish reference intervals for the haematological profile of alpacas on the basis of a large population of clinically healthy animals, and to determine the influence of sex, age and season on these indicators. Blood samples were collected from 243 alpacas (53 males and 156 females over six months of age and 34 crias – 12 males and 22 females – under six months of age). The selected farms were located in Central Europe (Czech Republic and Germany). We determined 13 haematological indicators. Comparison of the results was performed with respect to the sex of animals and for the older group also with regard to the season and to the feeding period. We found no highly significant ($P > 0.001$) differences between males and females. We did find highly significant differences ($P < 0.001$) between the group of crias under six months of age and the older alpacas (mean corpuscular volume – MCV, mean corpuscular haemoglobin concentration – MCHC, red cell distribution width – RDW, white blood cell count – WBC, neutrophil count). Based on our findings we suggest that for some indicators different reference intervals (esp. WBC and differential cell counts) be used for the two above mentioned age groups. We found some highly significant differences ($P < 0.001$) in haematological indicators in the older group of alpacas between the summer and winter feeding period (haemoglobin concentration, MCHC). Clinical laboratory diagnosis may be improved by the use of age-based and season-based haematological reference values.

Keywords:

clinical pathology; reference ranges; camelids; seasonal differences; blood

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Contact

Mgr. Zuzana Karlíková
Executive Editor
phone: + 420 227 010 352
e-mail: vetmed@cazv.cz

Address

Veterinární Medicína
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Slezská 7, 120 00 Praha 2, Czech Republic