Coprological prevalence and intensity of helminth infection in working horses in Lesotho

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Aims

- To determine coprological prevalence of infection with *Strongyloidea, Oxyuris and Parascaris* species and intensity of infection with *Strongyloidea* in working horses in south western and western Lesotho
- To investigate associations between helminth infection and horse age and sex and owner reported use of anthelmintic(s)

Methods

As part of a larger cross sectional survey of health and welfare in working horses in three regions of south western and western Lesotho, a coprological survey of helminth infection was conducted between April and June 2007. A total of 312 owners and their horses participated in the study. Fresh faecal samples were collected following a structured clinical examination of each horse and information on the use of anthelmintics was obtained through administration of a structured questionnaire in local language to each owner. Faecal worm egg counts were conducted using a FECPFAK test kit (Presland et al. 2005). Infection prevalence estimates and 95% confidence intervals were derived for each species and prevalence estimates and 95% confidence intervals of infection intensity for *Strongyloidea* were calculated according to a predefined scale (Soulsby 1982). Univariable and multivariable ordinal logistic regression adjusting for potential clustering by region were conducted to investigate associations between exposure variables and intensity of *Strongyloidea* infection. Univariable and multivariable logistic regression adjusting for potential clustering by region were conducted to investigate associations between exposure variables and *Oxyuris* and *Parascaris* infection status.

Results

Strongyloidea

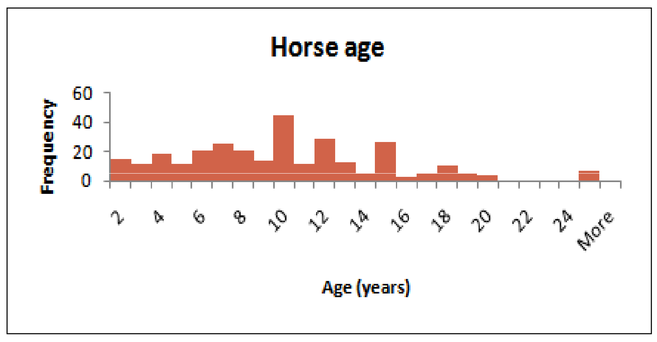
- Coprological prevalence of *Strongyloidea* infection was 88.2% (95% CI 84.7-91.7)
  - 11.8% (95%CI 8.2-15.4) of horses were not infected
  - 19.7% (95%CI 15.2-24.1) had low infection intensity (1-500 eggs per gram (epg))
  - 19.7% (95%CI 15.2-24.1) had medium infection intensity (501-1000 epg)
  - 48.8% (95%CI 43.2-54.5) had high infection intensity (>1000 epg)
- Decreased infection intensity was associated with owner reported use of proprietary equine anthelmintic products (Odds Ratio 0.23, 95%CI 0.10-0.52, p=0.001).
- No statistically significant associations with either horse sex or horse age were found.

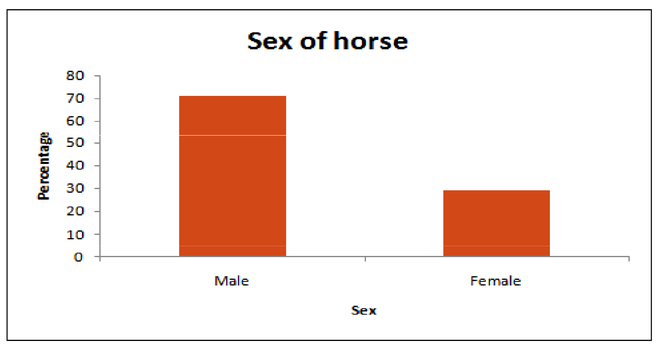
Oxyuris

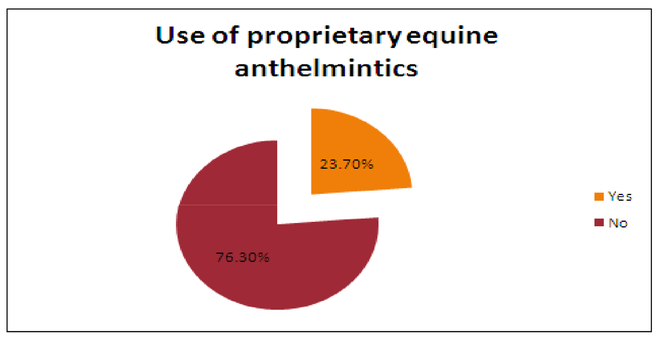
- Coprological prevalence of *Oxyuris* infection was 6.2% (95% CI 3.5-8.9)
- Odds of infection decreased with increasing horse age (Odds Ratio 0.84 per year increase in age, 95% CI 0.72-0.97, p=0.02).
- No statistically significant associations with either horse sex or use of proprietary equine anthelmintics were found.

Parascaris

- Coprological prevalence of *Parascaris* infection was 21.6% (95% CI 17.0-26.2)
- No statistically significant associations with horse-level or owner-reported variables were found.

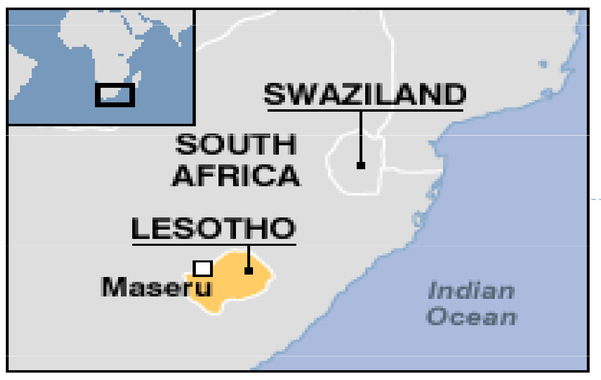






Conclusions

The study indicated that *Strongyloidea* infection is endemic in working horses in this region of Lesotho but proprietary equine anthelmintic products assist in managing infection. Whilst *Oxyuris* infection is less widespread, measures to protect younger animals may be appropriate. *Parascaris* infection is relatively common, but in contrast with age-related immunity reported in developed countries, no evidence of a significant age effect was found.



Acknowledgements

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WorldHorseWelfare
the new name for the ILPH