

Interaction between abomasal blood feeder *Haemonchus contortus* and intestinal mucosal browser *Trichostrongylus colubriformis* during co-infection in Boer goats

ABSTRACT

This study was conducted to investigate potential interactions between the abomasal blood feeder *Haemonchus contortus* and the intestinal mucosal browser *Trichostrongylus colubriformis* among deliberately infected Boer goats. Faecal and blood samples were collected twice a week for eight weeks from 25 parasite-naïve goats. Correlation analysis and multiple linear regression models were conducted to explore the association between phenotypic variables and variables taken at necropsy. Positive associations were identified between total FEC and log *T. colubriformis* number ($r = 0.62$, $p < 0.05$) as well as between IgA and peripheral eosinophil counts ($r = 0.65$, $p < 0.05$). A negative correlation was observed between *T. colubriformis* and log *H. contortus* number ($r = -0.56$, $p < 0.05$). Multiple linear regression models show that *H. contortus* and *T. colubriformis* interacted with each other. *T. colubriformis* appeared to contribute more significantly to the variation of FEC than *H. contortus*. Co-infection induced an IgA response which was only effective against *T. colubriformis* but not protective against *H. contortus* infection. This could be seen via significant associations of IgA with both nematode species but with the effect of IgA differing for *H. contortus* and *T. colubriformis*. In this study, *H. contortus* infection was not detrimental to the goats with no observed impact on PCV. This could be because the growth of *T. colubriformis* as represented by its length was associated with reduced number and composite burden of *H. contortus* during co-infection, or possibly due to low infection dosage. Improved understanding of the impact of *H. contortus* and *T. colubriformis* and their interaction from natural co-infection studies is beneficial for a better understanding of the goat-parasite interaction and its potential impacts on the health and productivity of animals.

Keyword: *Haemonchus contortus*; *Trichostrongylus colubriformis*; Goats; Interaction; Faecal; Egg counts; IgA; Eosinophil; Packed cell volume