



ELSEVIER

Veterinary Parasitology 80 (1999) 215–230

veterinary  
parasitology

## Effects of *Trypanosoma congolense* infection and diet on puberty, age at first lambing and haematology changes in Djallonké ewe lambs

S. Osaer<sup>a,\*</sup>, B. Goossens<sup>a</sup>, S. Kora<sup>a</sup>, I. Jeffcoate<sup>b</sup>

<sup>a</sup> International Trypanotolerance Centre, PMB 14, Banjul, Gambia

<sup>b</sup> University of Glasgow Veterinary School, Bearsden Road, Glasgow G61 1 HQ Scotland, UK

Received 11 February 1998; accepted 21 June 1998

---

### Abstract

The interactions between *T. congolense* infection and nutritional supplements on onset of puberty and age at first lambing were observed in 24 young Djallonké ewes. As experimental design, a randomised complete block design was used with four treatment combinations, of which two were kept on a restricted diet (L), the remainder on an unrestricted diet (H) and half of each nutritional group being infected with *T. congolense* (LI and HI), the remainder serving as controls (LC and HC). Infection with *T. congolense* took place at an average age of 6 months and 15 days. Mortality due to trypanosome infection was zero and clinical symptoms were not obvious. Intensity of parasitaemia and packed cell volume (PCV) drop following trypanosome infection were similar in both infected groups (HI and LI). High dietary supplementation resulted temporarily in a better haematopoietic response following trypanosome infection, measured as a macrocytic anaemia. Dry matter intake (DMI) was significantly depressed in the HI group immediately following infection. Trypanosome infection had a negative effect on live weight gain during the chronic phase, with the difference being most obvious in the HI group (interaction diet×infection;  $p \leq 0.05$ ). Whereas trypanosome infection had no significant effect, high supplementary feeding significantly reduced the age at first cycling. Age at first lambing was similarly reduced by the diet. Trypanosome infection tended ( $p \leq 0.09$ ) to delay age at first lambing with a mean difference of  $31.5 \pm 22.4$  days between infected and controls. Interactions between diet and infection for age at first cycling/lambing were not significant, indicating these effects were just additive. Neither birth weights nor growth rates of offspring born to the experimental animals were significantly affected by previous trypanosome infection, nor by the diet of the dam. In contrast, lamb mortality up to 3 months of age was significantly increased by infection of the dam and most losses arose in group LI. In conclusion, the effects of trypanosome infection on puberty and age at first lambing were indirectly

---

\* Corresponding author. Tel.: +220-460218; fax: +220-46 2924; e-mail: bakt.sabine@commit.gm