

RESEARCH COMMUNICATION

STUDIES ON *HAEMONCHUS CONTORTUS*. VII. THE EFFECT OF TREATMENT OF *TRICHOSTRONGYLUS AXEI* PRIOR TO CHALLENGE WITH *H. CONTORTUS*

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ABSTRACT

REINECKE, R. K., BRUCKNER, CHRISTEL, DE VILLIERS, I. L., 1981. Studies on *Haemonchus contortus*. VII. The effect of treatment of *Trichostrongylus axei* prior to challenge with *H. contortus*. *Onderstepoort Journal of Veterinary Research*, 49, 69 (1982).

Four-month-old worm-free Merino lambs were dosed with 20 000 infective larvae of *Trichostrongylus axei* on Day 0 and again on Day +14. On Day +83 they were treated with mebendazole at 15 mg/kg. All lambs in this group and a further group of 11 worm-free Merino control lambs were challenged with 50 000 infective larvae of *Haemonchus contortus* dosed from Day +90–Day +92. At necropsy 27 and 28 days later there was no significant difference between the worm burdens of the 2 groups. *T. axei* must be present in the abomasum to protect sheep from challenge with *H. contortus*.

MATERIALS AND METHODS

TABLE 1 Experimental design. The effect of treatment of *T. axei* on challenge with *H. contortus*, showing the days on which infective larvae of *T. axei* were dosed to sheep treated with mebendazole, challenged with *H. contortus* and slaughtered respectively

Days	No. of infective larvae dosed to each sheep	
	Group A	Group B
0	—	<i>T. axei</i>
+14	—	<i>T. axei</i>
Total	—	40 000
+83	—	Treated with mebendazole at 15 mg/kg
+91	<i>H. contortus</i>	<i>H. contortus</i>
+92	<i>H. contortus</i>	<i>H. contortus</i>
+93	<i>H. contortus</i>	<i>H. contortus</i>
Total	50 000	50 000
+118 +119	— Slaughter	Slaughter —

Twenty-two 4-month-old worm-free Merino lambs were divided into 2 groups, A and B. Group A served as controls and the sheep of Group B were each dosed with 20 000 infective larvae of *Trichostrongylus axei* on Day 0 and Day +14. On Day +83 they were treated with mebendazole 7 days prior to challenge with infective larvae of *Haemonchus contortus* from Day +90–Day +92.

RESULTS

The numbers of *H. contortus* recovered from these 2 groups of sheep are ranked in Table 2. If Group A and

Group B are compared, it is evident that there is no significant difference between the worm burdens of the 2 groups.

TABLE 2 Ranked worm burdens of *H. contortus* recovered at necropsy

Group A	Group B
5 507	5 816
6 755	6 586
6 806	8 282
7 179	8 979
8 417	9 420
9 850	10 429
10 929	10 599
11 485	11 675
13 064	13 175
13 119	14 155
14 184	15 405

It has been shown that sheep, dosed with 40 000 infective larvae of *T. axei* and subsequently challenged from Day +90–Day +92 with *H. contortus*, have significantly fewer worms than those not previously infested with *T. axei*. When these worm burdens were compared by the non-parametric method, predosing with *T. axei* protected sheep against challenge by > 80% in > 80% of the flock (Class A) (Reinecke, 1977).

The present experiment proves that sheep are only protected against *H. contortus* if *T. axei* is present. This is further confirmation that this is a competitive reaction between genera and not an immune reaction, and the previous postulates of Reinecke (1977) are thus endorsed.

REFERENCE

REINECKE, R. K., 1977. The effect of abomasal nematodes on subsequent infestations with *Haemonchus contortus*. M. Med. Vet. Thesis. University of Pretoria.

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