Summary only

SOME EFFECTS OF ANTHELMINTIC DOSING ON THE MINERAL STATUS OF HOGGETS

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IN AN experiment started in February 1969, one group of hoggets received "suppression" doses of anthelmintic ("Nilverm"); another group was allowed to acquire a natural mixed helminth infestation. In May there was no between-group difference in mean serum calcium levels but for parasitized sheep the mean levels of blood inorganic phosphate and alkaline phosphatase activity were significantly reduced. When the sheep were killed in September, as compared with corresponding values for the anthelmintic group, mean cortical thickness and breaking strength of metacarpal bone were significantly less for the parasitized group. Other results indicated a reduced trace element status for the parasitized sheep (Table 1).

TABLE 1: WEIGHT CHANGES AND VITAMIN B_{12} COPPER AND SELENIUM CONCENTRATIONS IN LIVER (MEANS ± S.E.)

Group Treatment	*Weight Gain (kg)* (1)	*Vit. B_{12} (μg/g WW)* (2)	*Copper (μg/g DW)* (1)	*Selenium (μg/g WW)* (1)
Anthelmintic	10.0 ± 0.6	1.06 ± 0.06	111 ± 23	0.058 ± 0.002
None	0.3 ± 0.7	0.80 ± 0.09	48 ± 5	0.039 ± 0.002
Signif. Diff.	1%	5%	1%	1%

(1) Twelve sheep per group.
(2) Ten sheep per group.

In contrast to the 1969 results, those for a similar experiment carried out in the following year indicated that by August 1970 parasitism was not accompanied by an altered blood phosphate picture but was associated with reduced serum calcium levels. In the 1970 experiment, parasitism was again associated with reduced concentrations of vitamin B_{12}, copper and selenium in liver.

In both years parasitized sheep that died at about the peak of infection (in April) had high burdens of *Ostertagia* spp. and/or *Trichostrongylus* spp. (*cf.* Brunsdon, 1970). As between years, *Haemonchus contortus* infections varied; high burdens were found in 1969 but not in 1970.

Overall, results demonstrate an association between internal parasitism and impaired major and trace element metabolism.

REFERENCE

Brunsdon, R. V., 1970: *N.Z. Jl agric. Res., 13:* 126.