

## New Zealand Society of Animal Production online archive

This paper is from the New Zealand Society for Animal Production online archive. NZSAP holds a regular annual conference in June or July each year for the presentation of technical and applied topics in animal production. NZSAP plays an important role as a forum fostering research in all areas of animal production including production systems, nutrition, meat science, animal welfare, wool science, animal breeding and genetics.

An invitation is extended to all those involved in the field of animal production to apply for membership of the New Zealand Society of Animal Production at our website [www.nzsap.org.nz](http://www.nzsap.org.nz)

[View All Proceedings](#)

[Next Conference](#)

[Join NZSAP](#)

The New Zealand Society of Animal Production in publishing the conference proceedings is engaged in disseminating information, not rendering professional advice or services. The views expressed herein do not necessarily represent the views of the New Zealand Society of Animal Production and the New Zealand Society of Animal Production expressly disclaims any form of liability with respect to anything done or omitted to be done in reliance upon the contents of these proceedings.

This work is licensed under a [Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License](http://creativecommons.org/licenses/by-nc-nd/4.0/).



You are free to:

**Share**— copy and redistribute the material in any medium or format

Under the following terms:

**Attribution** — You must give [appropriate credit](#), provide a link to the license, and [indicate if changes were made](#). You may do so in any reasonable manner, but not in any way that suggests the licensor endorses you or your use.

**NonCommercial** — You may not use the material for [commercial purposes](#).

**NoDerivatives** — If you [remix, transform, or build upon](#) the material, you may not distribute the modified material.

<http://creativecommons.org.nz/licences/licences-explained/>

Summary only

SOME EFFECTS OF ANTHELMINTIC DOSING ON THE MINERAL STATUS OF HOGGETS

E. D. ANDREWS, K. G. HOGAN and R. V. BRUNSDON  
*Wallaceville Animal Research Centre, Wellington*

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<sub>12</sub> COPPER AND SELENIUM CONCENTRATIONS IN LIVER (MEANS ± S.E.)

Group Treatment	Weight Gain (kg) (1)	Vit. B <sub>12</sub> (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<sub>12</sub>, 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, *Hæmonchus 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.