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SELENIUM, COBALT AND COPPER SUPPLEMENTATION OF BEEF CATTLE IN NORTHERN SOUTHLAND

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Four properties were selected in the Te Anau basin, Southland where no fertiliser containing Co or Cu had been used for the last five years nor had experimental stock been given any trace elements. On each property 32 Hereford heifers (ca. 15 months old) were given in a factorial design with randomised blocks:

Se 25 mg injected ("Selate 25")

Co 350 mg orally (CoSO₄ solution)

Cu 100 mg injected ("Coprin EDTA", Glaxo)

all with an anthelmintic (Panacur 10), approximately every four months from 7.12.78 to 29.11.79.

Liveweight gains were observed for three periods of approximately four months corresponding to summer/autumn, winter and spring. Stock appeared healthy and showed none of the recognised signs of Se, Co or Cu deficiency.

Se significantly ($P < 0.05$) increased liveweight gain 13.4 kg over the year, mainly in summer and autumn. Positive but non-significant effects occurred in winter and spring. The response was least on the property where growth rate was highest, but was similar on the other properties.

The response to Co (9.0 kg), occurred in the winter only ($P < 0.05$) when liveweight gains were negative on all but one property.

There was no response to Cu in this and two earlier trials, and its use in this area does not appear justified.