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# Project reports

This issue of Surveillance introduces a new, regular feature: a summary of research and investigational projects carried out by officers of the Animal Health Division.

These project summaries were previously published in a separate annual booklet entitled "Projects and Publications". We believe Surveillance is a better medium for disseminating this information.

Publication in Surveillance will not preclude even-

tual publication of the material in the scientific literature, where more rigorous standards of presentation prevail. These reports are intended to "give notice" of the work AHD is doing and should be regarded as preliminary accounts only.

Some of the reported work arises from collaboration of AHD staff with staff of other Divisions and with other organisations.

As far as possible the project reports will be grouped according to subject.

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## *RUMINANT NUTRITION AND TRACE ELEMENTS*

The project reports which follow are concerned with the nutrition of ruminants and with the role of trace elements. The emphasis on trace element research reflects the continuing effort to provide veterinarians with diagnostic assistance in solving the complex problems which usually present as "ill-thrift".

The classical clinical signs of deficiency diseases are seen only occasionally these days and laboratory assistance is often called upon. The cost of providing this help is considerable and we must be satisfied that the benefits at least parallel the costs.

### **AH 316**

#### **A survey of trace element levels of beef cattle, lambs and pastures, from farms in the Cook, Waikohu, Wairoa and Waipua Counties.**

This project began in 1980 to establish the extent and distribution, in relation to soil types, of any deficiency of copper, cobalt, and selenium in cattle, lambs and pastures from farms in four East Coast counties.

In 1980 we collected pasture samples and serum samples, from beef cattle and lambs, from 66 properties. The pasture samples indicated a higher percentage of deficient or marginal farms, than did serum analysis.

Last year serum samples from beef cows and lambs from a further 34 properties were analysed for serum ferroxidase and vitamin B12, and whole blood samples for selenium.

Mean ferroxidase levels indicated that cattle from only 21 percent of the farms (60 percent the previous year) were deficient or marginal in copper status. Mean B12 levels indicated that cows from 33 percent of farms (18.5 percent the previous year) were deficient or marginal in cobalt status, as were lambs from 21 percent of farms (14 percent the previous year). All blood selenium levels were adequate.

Application of Suttle and McLauchlan's (1976) formula to pasture copper, molybdenum and selenium indicated that copper levels were below minimum requirements for cattle on 77 percent of farms and for sheep on 17 percent of farms. In contrast to blood level results, selenium levels were marginal on 28 percent of cattle pastures and 41 percent of sheep pastures. Nineteen percent of cattle pastures were marginal for cobalt and 46 percent of lamb pastures were deficient or marginal for cobalt.

The evidence of low copper and cobalt levels suggests a need for evaluation of the significance to production, of copper and cobalt supplementation.

This project has been completed.

*F J A Neilson, D E Lake, A J Fraser, P R Poole, D Haley, P Scott and M Roper.*