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Summary only

THE EFFECTS OF DECREASING LIVELWEIGHT AT MATING ON REPRODUCTION IN ROMNEY EWES

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The influence of liveweight loss on the reproductive performance of the Romney ewe was measured in two trials. In Trial 1, conducted in 1974 at Ruakura, 60 six-year-old Romney ewes, mean liveweight 49.9 kg, were randomized into two treatment groups. Nutritional restriction was applied to one group (restricted) on March 14, the second group remaining on a maintenance diet. Ewe groups were joined with two 2½-year-old Romney rams on March 21. The sires rotated between groups every second day until removed on May 7. Weekly liveweights were recorded from March 14 to June 6.

Trial 2 was conducted under drought conditions on a commercial farm in 1973. A sample of 412 ewes, mean weight 57.6 kg and balanced for age composition, were allocated to two groups one of which was dosed with 5 mg selenium on February 20. Liveweights were recorded on February 8, March 29 and May 4. Two ewes from each of the 5 age classes in both experimental groups were sampled for blood selenium analyses on February 8 and March 29. Each ewe group was joined with five 3½-year-old Romney rams on March 1—rams removed May 4. Mean liveweight loss from February 8 to May 4 was 4.2 kg range +0.25 to -17.2 kg.

In Trial 1 average liveweight loss in the restricted group was 1.25 kg per week. The maintenance group gained 0.25 kg per week. Liveweight differences on June 6 were highly significant. There were no significant differences in mating and lambing dates or in litter size and rates of barrenness.

In Trial 2 both groups of ewes had normal blood selenium levels. Initial levels before dosing were 0.151 and 0.139 mg/l for treatment and controls, and rose to 0.202 and 0.178 mg/l, respectively, between sampling dates. Differences were not significant. Selenium had no effect on liveweight change. Within each experimental group, differences in liveweight loss between age groups was significant with 4- and 5-year-old ewes showing a greater weight loss than the 1½-year-old ewes. Initial liveweights of ewes mated and conceiving in the first cycle were heavier than group means. Conception rates tended to decrease when liveweight loss exceeded 5.5 kg for the control and 10 kg for the selenium group. A significant number of control ewes failed to conceive before the end of the third mating cycle. More lambs were born per ewe lambing in the selenium than in the control group (1.35 v. 1.25).