

Sheep Disease Projects

Facial Eczema.—Fairly widespread outbreaks of facial eczema occurred during late February and March in the Waikato and a number of outbreaks were reported in Poverty Bay. A few flocks were affected in Hawkes Bay and Manawatu. In general only a small percentage of clinical cases occurred and many of those were not very severely affected. The experience of the last two years makes it obvious that the disease can follow a summer in which the pastures do not dry off. Some liver damage occurred on the experimental farm at Manutuke, but only two mild clinical cases developed. It is hoped that some of the pasture preserved this year may prove sufficiently toxic to be used for chemical fractionation. A spray irrigation plant has been installed at Manutuke with a view to determining the effect on the incidence of the disease of measured amounts of water applied at different times of the year. *Panicum miliaceum* (broom corn millet), which in three previous seasons has produced jaundice and photosensitization at Manutuke, this year proved non-toxic when it was sown later and on a different soil type.

Portal Streaming.—Brilliant green has been employed in a study of the streaming of blood from tributaries in the portal vein of sheep. A large degree of variation has been observed in the experiments so far conducted on twenty sheep.

Blood-poisoning in Sheep (Cl. chauvoei Infection).—The demand for vaccine for prevention of blood-poisoning in sheep has risen very considerably in the last two years, as shown by the following doses issued from Wallaceville :—

1945	..	..	27,000		1947	..	..	79,000
1946	..	..	29,000		1948	..	..	172,000

Although the results have generally been satisfactory, during the past two years there have been indications that in heavily-infected areas the vaccine did not always give complete protection. Experimental tests indicated that in the doses previously recommended the vaccine would not protect against heavy infection. Further investigations have shown that a vaccine prepared from cultures grown on a different medium (beef infusion cysteine H. Cl. broth) precipitated with alum is some 150 times as potent as the old vaccine. This new vaccine will be used in future and is expected to provide adequate protection.

In a preliminary experiment a group of ewes was vaccinated with the new vaccine three weeks before lambing. Lambs from these ewes proved to have a fairly satisfactory immunity against blood-poisoning up to the age of eight weeks. It is hoped that it may be possible by this method to reduce the losses from blood-poisoning which occur after lamb-marking in some flocks.

Hogget Mortalities on Turnips.—During the year investigations were initiated into the causes of hogget losses while feeding on turnips during late autumn, winter, and early spring in the South Otago and Southland districts. More precise information is being sought on the extent of these losses, their nature, the conditions associated with their incidence, and possible methods of control. The preliminary observations have suggested that *Cl. chauvoei* infection and enterotoxaemic conditions are responsible for a large proportion of these losses. Field and laboratory studies are being intensified and vaccination trials are in progress on selected properties.

Dairy Cattle Breeding Projects

Artificial Insemination at Ruakura.—Winter Mating Group: This group was again used for the training of technicians. Two hundred and eighty-two cows were inseminated in four herds and it was noted that there was a wide variation between herds in the conception rates, which were 45 per cent., 52 per cent., 59 per cent., and 87 per cent. for the individual herds. Opportunity was also taken to investigate whether storage in individual ampoules has any detrimental effect upon conception rate. In a small preliminary test with two groups of approximately 90 cows each, identical conception rates of 63 per cent. were obtained with semen stored in bulk and in ampoules.