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The expansion of export demand for sheep meats has led to a resurgence of interest by producers in short term **feedlot** systems of fattening for sheep and lambs. Apart from the cost of rations, the incidence of disease and metabolic disorders is an important determinant of profitability. This paper describes a **feedlot** experiment at Hamilton during which an outbreak of polioencephalomalacia (PEM) occurred.

Eighteen groups of eight 6-month old crossbred lambs were taken from pasture in March 1975 and confined to **feedlots** where they were fed rations of oat/barley grain, linseed meal and pasture hay *ad libitum* (Table 1). After a progressive 10-day introduction to their ration the lambs remained in the **feedlot** for 120 days until slaughter.

TABLE 1: Composition of rations, liveweight gain and incidence of PEM

Oats g day ⁻¹	Linseed g day ⁻¹	Lwt. gain g day ⁻¹	No. deaths	Barley g day ⁻¹	Linseed g day ⁻¹	Lwt. gain g day ⁻¹	No. deaths
150	0	35	3	150	0	25	2
150	75	71	2	150	75	62	3
150	150	66	3	150	150	42	1
300	0	57	2	300	0	58	1
300	75	59	1	300	75	75	2 [†]
300	150	81	0	300	150	91	0
450	0	63	0	450	0	63	0
450	75	75	0	450	75	76	0
450	150	73	0	450	150	87	0

† Two sheep recovered after treatment.

The first evidence of PEM occurred after 8 weeks in the **feedlot**. In the following 6 weeks, 11 lambs died between daily feedings without symptoms being observed. PEM was identified at post mortem as the source of death. Nine lambs observed at various stages of the disease before death were treated intravenously (200 mg) and intramuscularly (200 mg) with thiamine. Of these only two recovered. A total of 18 lambs died from PEM in this experiment.

It is not possible to determine whether the occurrence of PEM was related to the influence of dietary factors on the ruminal concentration of thiamine or to specific thiaminase activity. However, the occurrence of PEM in only those groups on low grain diets may be significant. Phillipson and Reid (1957) reported lower ruminal thiamine concentrations in animals on hay diets than in those on concentrate diets.

Severe economic losses may result from mortalities, impaired feed use efficiency, **prolongation** of fattening and cost of treatment, and producers contemplating a **feedlot** system of fattening should be aware of the disease, its recognizable symptoms and current methods of treatment.

PHILLIPSON, A.T. and REID, R.S. (1957). Br. J. Nutr. 11:27-41.

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