

# THE EFFECT OF IODINE ON THE PERFORMANCE OF LAMBING EWES GRAZING PASTURES OF DIFFERENT FORB CONTENT

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Iodine supplementation of ewes in late pregnancy and during lactation at Julia Creek apparently increased birth weight, survival, growth rate and secondary/primary follicle ratio of lambs particularly when ewes received a low plane of nutrition (Knights *et al.* 1979). In Mitchell grass pastures it is possible that one or more of the forb species contain low levels of a goitrogen which may induce subclinical hypothyroidism leading to reduced lamb survival. This goitrogenic effect would be exacerbated by a low level of iodine. Since clinical goitre has not been observed at Julia Creek, the potential goitrogenic effect could be marginal and possibly corrected by the provision of additional iodine. This study was designed to evaluate the effect of iodine supplementation of pregnant ewes grazing paddocks containing varying levels of forbs.

A group of **peppin** Merino ewes (242) (mean LW 40 kg) 3-10 weeks pregnant were divided into 10 groups which grazed either irrigated sorghum (1 replicate) (zero forb content) or paddocks containing a high (2 replicates) or low (2 replicates) proportion of forbs of total pasture dry matter. Approximately half the ewes in each paddock were supplemented with 1 mL s.c. of lipiodol (40% iodine given subcutaneously). The remaining ewes were unsupplemented. The experiment commenced in November 1988 with joining and finished in July 1989. Rainfall during this period was 352 mm. Total dry matter in the pasture paddocks ranged between 1110 and 1690 kg/ha. Zero, low, and plus forb paddocks had 0, < 10 and > 25% respectively of forbs making up the total DM yield.

Pre-treatment blood samples were collected (Jan. 1989) from a subsample (5) of ewes and the same ewes and their lambs were bled again 1 month post lambing and thyroxine (T4) levels were determined. Ewes were weighed on day 90 and 120 of gestation, and 1 and 2 months post lambing. Lambs were weighed at 1 and 2 months of age, and their survival determined at 2 months.

The supplement had no overall effect on liveweight change of ewes and lambs or T4 levels in ewes (Table 1). Levels of T4 in lambs at 1 month of age had no apparent effect on their survival at 2 months of age.

**Table 1. Number of ewes, lamb survival, liveweight change and thyroxine levels of sheep either unsupplemented (US) or injected with lipiodol (S) while grazing paddocks of varying forb content**

	Sorghum		Forbs plus		Forbs minus		Signif.	s.e.d. <sup>A</sup>
	US	S	US	S	US	S		
No. of ewes	22	35	50	49	43	43	—	—
Lamb survival (%) <sup>B</sup>	86a	103b	86a	92a	95a	81b	n.s.	—
Liveweight change (g/day)								
Ewes	28a	37b	47	49	20	14	P<0.05	22(8)
Lambs	259	255	216	226	131	129	n.s.	41(16)
Thyroxine (ng/dL)								
Ewes pre lambing	1.40	1.26	1.32	1.24	1.49	1.54	n.s.	0.21(0.16)
Ewes post lambing	1.61	1.66	2.20	2.20	2.08	1.95	n.s.	0.37(0.15)
Lambs <sup>C</sup>	2.56bc	2.80b	3.20a	2.78b	2.27c	2.37c	P<0.05	0.32

<sup>A</sup> Numbers are s.e.d. across or within (in parentheses) pasture types.

<sup>B</sup> Within pasture types parameters with different letters differ significantly ( $P<0.05$ ).

<sup>C</sup> Within rows parameters with different letters differ significantly ( $P<0.05$ ).

There was no evidence that the forb content of the pasture influenced circulating levels of thyroxine. Differences in lamb survival within pasture types did not appear to be associated with T4 levels in ewes or lambs at 1 month of age. However, because most lamb mortality occurs before 2-3 days of age hypothyroidism may not be evident in lambs which survived to 1 month of age.

KNIGHTS, G. I., O'ROURKE, P. K. and HOPKINS, P. S. (1979). *Aust. J. Exp. Agric. Anim. Husb.* **19**: 19-22.