

RESPONSES TO IODINE SUPPLEMENTATION IN LOW AND HIGH
FECUNDITY EWES GRAZING RYEGRASS/CLOVER PASTURE

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Dietary iodine (I) concentrations of 500 $\mu\text{g}/\text{kg}$ DM are required to maintain thyroxine (T4) output in ruminants, and 150 $\mu\text{g}/\text{kg}$ DM has been suggested as the minimum dietary concentration to maintain normal levels of animal production (ARC 1980). The present investigations studied responses to 1 ml intramuscular injections of iodised oil (475 mg I) given in mid pregnancy to ewes grazing ryegrass/clover pasture containing 100-200 μg I/kg DM, with non-injected ewes acting as controls. Five flocks of Romney and Booroola x Romney ewes with mean ovulation rates (OR) ranging from 1.5 - 5.2 were used, and productivity studied over two consecutive lambings. In both years, I supplementation had no effect upon lamb birth weight and either post-natal survival or subsequent growth rate. In the first year, I supplementation had no effect upon embryonic mortality (EM; OR - litter size). In the second year, EM of all control flocks and of I-treated flocks with low OR were as predicted (Hanrahan 1982), but were less than predicted in I-treated flocks where mean flock OR was 3.0 or greater (Fig. 1).

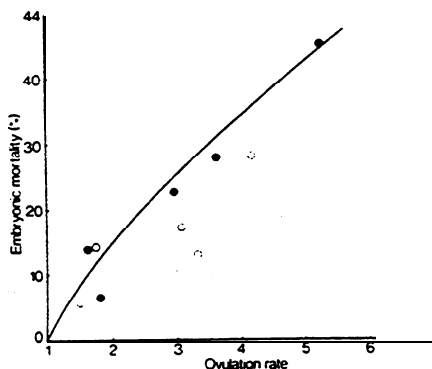


Fig. 1 Embryonic mortality in control (●) and I-supplemented (○) ewes. ——— predicted from mean flock OR by equation of Hanrahan (1982)

In the flock of control and I-treated ewes with OR of 3.6 and 3.3, plasma hormone concentrations were respectively 71 and 80 n m total T4/l, 52 and 60 p m free T4/l, and 4.1 and 4.6 μg placental lactogen/l ($P < 0.10$). It was concluded that I supplements given before mating reduce EM in ewes with high OR grazing herbage containing, 100-200 μg I/kg DM.

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