THE USE OF AN ORGANIC IODINE PREPARATION FOR CONTROLLING GOITRE IN LAMBS BORN IN WINTER, SPRING AND SUMMER

J. M. GEORGE*

Summary

The incidence of goitre in lambs born in spring and summer was reduced when ewes were given 0.4 g iodine intramuscularly as an organic iodine preparation approximately one month before lambing.

Treatment had no effect on the survival of lambs born in winter, spring or summer.

I. INTRODUCTION

A high incidence of goitre in summer born lambs in some flocks on the New England Tablelands of New South Wales was observed by George, Farleigh and Harris (1966). Both the incidence and the size of the goitre were greater in Dorset Horn than in Merino new born lambs.

Andrews and Sinclair (1962) reported from New Zealand that goitre in lambs born to ewes grazing brassica crops could be prevented by treating the ewes with an organic iodine preparation two months before lambing. The mortality of the lambs was also reduced. Treatment with iodised oil has been used in the present experiments in an attempt to prevent goitre in Dorset Horn lambs at three different times of the year.

II. MATERIALS AND METHODS

(a) Animals

Three groups of between 110 and 128 Dorset Horn ewes, mated to Dorset Horn rams, lambed in July and October 1964, and January 1965.

Ninety ewes from each group were injected intramuscularly approximately one month before they were due to lamb with 1 ml of iodinated poppy-seed oil (Neohydriol, May and Baker) that contained 40% iodine. The remainder of each group were not treated.

(b) Pastures

The pastures and stocking rates have been described by George, Farleigh and Harris (1966). No superphosphate was applied to the pastures during 1964.

(c) Collection of Glands

The thyroid glands of all lambs that died were excised and weighed. The thyroids of surviving lambs were palpated soon after birth when the weights of all lambs were recorded.

III. RESULTS

Intramuscular injection of iodised oil reduced the size of the thyroid glands of lambs born in October and January but did not reduce the mortality of new born lambs at any of the three times of lambing (Table 1).

*Division of Animal Physiology, C.S.I.R.O., Pastoral Research Laboratory, Armidale, N.S.W.
TABLE 1

Mean weight of thyroid glands (g) of non-surviving lambs, Armidale—1964/65

<table>
<thead>
<tr>
<th>Lambing Time</th>
<th>July/August</th>
<th>October/November</th>
<th>January/February</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment</td>
<td>Control</td>
<td>Neohydriol</td>
<td>Control</td>
</tr>
<tr>
<td>Ewes Joined</td>
<td>20</td>
<td>90</td>
<td>30</td>
</tr>
<tr>
<td>Lambs born % Ewes Joined</td>
<td>110</td>
<td>134</td>
<td>93</td>
</tr>
<tr>
<td>Lambs surviving % Lambs born</td>
<td>50</td>
<td>60</td>
<td>64</td>
</tr>
<tr>
<td>Thyroid Wt. (g) Non-surviving</td>
<td>3.29</td>
<td>3.27</td>
<td>14.81***</td>
</tr>
</tbody>
</table>

***Difference between group means significant at P < 0.001.

Fewer Dorset Horn lambs showed enlarged thyroids in this study than in January of the previous year (George, Farleigh and Harris 1966). Two lambs in the control group for the October/November lambing had thyroid glands weighing 36 and 56 g respectively. There were no enlarged thyroids in lambs surviving from July or October lambings, but five lambs with palpable thyroids survived at the January lambing.

IV. DISCUSSION

The use of an organic iodine preparation was effective in reducing the size of the thyroid gland of both spring and summer born lambs. Setchell et al. (1960) found that thyroid weight was the best single measurement of hypothyroidism and from the results obtained it is seen that goitre did not occur in winter born lambs. It seems that the thyroid iodine concentration was adequate for this group.

Although Andrews and Sinclair (1962) found the use of Neohydriol would reduce high mortality in lambs of kale fed sheep, its use in this experiment had no effect on lamb survival in winter, spring or summer born lambs. Setchell et al. (1960) suggested that although hypothyroidism may not have been the sole cause of losses it no doubt contributed to mortality if only by decreasing the lambs’ vigour and resistance to inclement weather.

White clover was present throughout pregnancy for all groups and a possible explanation for the small thyroid weights of the winter control group might be that, if a goitrogenic factor was involved, it was less active at this season of the year.

V. REFERENCES

