

THE EFFECTIVENESS OF MULESING IN FLYSTRIKE CONTROL
IN CORRIEDALE AND CROSSBRED SHEEP IN TASMANIA

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Summary

Radical and modified Mules operations were performed on Corriedale and Crossbred (Border Leicester-Corriedale) ewe lambs in each of three years. In both breeds, Mulesing resulted in a significant reduction in breech-strike with the radical Mules being more effective than the modified. Mulesing did not significantly affect live-weight or total dag free wool production.

These results illustrate the need, even in plain bodied sheep, to inhibit wool growth in the breech area. Despite developing interest in breeding an "easy care" Merino, it appears that selection could never avoid the need to inhibit breech wool growth by some artificial means.

I. INTRODUCTION

Blowfly strike constitutes a major economic and management problem on a high percentage of sheep properties throughout Australia (Bureau of Agricultural Economics 1972). Since the blowfly has developed a resistance to currently available insecticides (Shanahan and Roxburgh 1974), the importance of the Mules operation as a method of breech strike control has increased.

The value of **mulesing** in reducing the incidence of breech strike in the Merino has been indicated by Dun (1964) and Lightfoot (1964). With the increased emphasis on low **labour** requirement, easy care sheep, and high sheep numbers per man, **the effectiveness** of the Mules operation in controlling blowfly strike in plain bodied Corriedale and Crossbred sheep was investigated in this experiment at Cressy Research Station in Northern Tasmania.

II. MATERIALS AND METHODS

(a) Sheep

In each of the years 1971, 1972 and 1973, August drop Corriedale ewe lambs were randomised at lamb marking into three groups of 35 lambs - radical and modified Mules operation as described by Jones (1968) and an unmulesed control **group**. Three similar groups of Crossbred (Border Leicester-Corriedale) lambs were formed in each year.. **The mulesing was performed at marking.**

The twenty month experimental **period following mulesing** for each of the three years of introduction are subsequently called years in this paper.

The groups were run together on predominantly white clover (*Trifolium repens*) and perennial ryegrass (*Lolium perenne*) pastures. The groups were drenched at shearing in November, and in March of each year,

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(b) Measurements

Lambs were weighed at marking, 4 weeks after marking and at weaning, Liveweights were also recorded at the 8 and 20 month **crutchings**, but no significant differences were observed ($P < 0.05$).

For the twenty month period following treatment all sheep were observed regularly for flystrike, increasing to daily checks when flies were active. Struck sheep had a minimum quantity of wool removed from the affected area, and this area was then treated with **Diazinon^(R)**. Breech strikes in the crutch and tail area were recorded against the treatment. Body strikes were noted.

Individual fleece weights were recorded at lamb and hogget shearing, At each shearing and crutching all soiled (dags) and urine stained wool was separated, weighed and recorded for each sheep. As much wool as possible was removed from all dags.

III. RESULTS

(a) Flystrikes

The percentage of sheep struck in the breech was the highest in the control groups for both breeds in all years (Table 1).

TABLE 1

Percentage of introduced sheep with breech strike
over 20 month periods

Treatment	Corriedale			Crossbred		
	1971	1972	1973	1971	1972	1973
Radical Mules	2.9	5.7	2.9	0	2.9	0
Modified Mules	17.1	34.3	5.7	8.6	2.9	2.9
Control	85.7	57.1	40.0	22.9	31.4	37.1

The 1971 and 1972 Corriedale radical groups had significantly fewer sheep struck than their corresponding modified groups ($P < 0.05$). There was no significant difference between the Corriedale radical and modified treatment groups strikes in 1973. The radical and modified Crossbred groups had similar protection from flystrike in all years. In all treatments there were fewer strikes in the Crossbred group than in the Corriedale group.

(b) Dags and Stains

In all years in both breeds the radical groups had the lowest weight of dags and stains removed over the 20 month experimental period (Table 2). It was only the 1971 Corriedale radical Mules group that was significantly cleaner than the modified treatment ($P < 0.05$).

(R) Registered trade mark.

TABLE 2

Mean weight of dags and stains per sheep (gm)
(Includes two shearings and two crutchings)

Treatment	Corriedale			Crossbred		
	1971	1972	1973	1971	1972	1973
Radical Mules	116a	97a	123a	138a	128a	477a
Modified Mules	354b	208a	445a	303ab	227a	480a
Control	452b	571b	1087b	472b	431b	1215b
L.S.D. (P < 0.05)	133	205	363	172	162	483

Means in the same column with different letters differ significantly (P < 0.05).

(c) Wool Weight

There was a variable response to treatments in wool production (Table 3). However, any apparent differences in wool production between treatments were removed when the weight of dags was deducted from the total wool produced per head.

TABLE 3

Mean greasy wool weight per head (kg)
(Includes two shearings and two crutchings)

Breed	Treatment	1971		1972		1973	
		Total Wool	Total Wool less dags	Total Wool	Total Wool less dags	Total Wool	Total Wool less dags
Corriedale	Radical Mules	5.2	5.2	5.3a	5.2	5.5a	5.4
	Modified Mules	5.4	5.1	5.5ab	5.4	5.9b	5.6
	Control	5.5	5.2	5.8b	5.3	6.3c	5.4
	L.S.D. (P < 0.05)	ns	ns	0.4	ns	0.4	ns
Crossbred	Radical Mules	5.0	4.9	5.0	4.9	5.4a	5.0
	Modified Mules	5.1	4.8	5.0	4.8	5.4a	4.9
	Control	5.3	4.9	5.3	5.0	6.0b	4.8
	L.S.D. (P < 0.05)	ns	ns	ns	ns	0.6	ns

ns - not significant (P < 0.05)

Means in the same column with different letters differ significantly (P < 0.05) within breed.

IV. DISCUSSION

The lack of any significant reduction in liveweight or wool production due to mulesing supports the findings of Lightfoot (1964) and Dun and Donnelly (1965). Fear of a growth check is a frequent

barrier-to the industry acceptance of **mulesing** in Tasmania. The low acceptance of **mulesing** is reflected in the 7% of the Tasmanian sheep population being **mulesed**, compared with 31% of the national sheep population being **mulesed** in 1970 (Bureau of Agricultural Economics 1972).

The marked reduction in flystrike in both breeds due to **mulesing** reported here, demonstrates the value of the operation in Corriedale and Crossbred sheep. The majority of the breech strikes occurred in the period December to May, which is commonly the time of greatest blowfly activity in Tasmania. In the control groups in both breeds, some sheep were struck more than once over the twenty month period. The radical Mules provided the best protection in the Corriedale flocks, while both types of Mules operations gave good flystrike control in the Crossbred flocks. These results support the finding of reduced flystrike in **mulesed** Merino sheep reported by Lightfoot (1964), in which flystrike was reduced from 46% to 5% in lamb groups, by mulesing. The Corriedale and Crossbred are plainer bodied breeds than most strains of the Merino, but the results reported here indicate the need for **mulesing** in even plain bodied breeds.

Work at Trangie has shown that selection over six generations against skin fold, in a Merino flock, has significantly reduced the skin fold character (B.J. McGuirk, Personal communication 1975). Despite this **mulesing** is still practised in this flock. Therefore selection against skin fold is unlikely to be successful in achieving easy care characteristics in the absence of artificial wool inhibition in the breech.

The reduction in the prevalence of dags and stains reported here is in agreement with the results of Douglas (1965). Whilst this is undoubtedly a factor in the reduced incidence of breech strike (Watts 1975), it is also significant in directly facilitating shearing and skirting. The latter is of importance in an era of increasing interest in cost saving in clip preparation, and illustrates that flystrike control is only one of the-management advantages in **mulesed** sheep.

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