

Comparison of Programs For the Control of Blowfly-Strike in Mulesed and Un-Mulesed Merino Sheep in South-Eastern Australia

J.W.A Larsen, N. Anderson and L.D. Tyrell

The Mackinnon Project, University of Melbourne Faculty of Veterinary Science, 250 Princes Hwy, Werribee VIC., 3030

In high winter rainfall areas of south-eastern Australia, diarrhoea ('scouring') and breech soiling ('dag') occurs in Merino sheep each winter and spring (Larsen *et al.*, 1994). This predisposes them to breech strike from October to December, even in dry years. In this region the most profitable wool-production systems are those with spring-lambing, and shearing in either December or March. Treatment of sheep in early spring, to prevent attack by the first generation of flies derived from larvae that have over-wintered in a dormant state (McKenzie and Anderson, 1990), is a strategy that can be applied to both times of shearing.

This study is evaluating the early treatment strategy in unmulesed sheep in 3 spring-lambing flocks in southern Victoria. Three treatment groups have been established on each farm as follows:

- 1) mulesed, then treated with insecticides if needed (Group 1 – 'Mules + tactical treatment');
- 2) breech and tail clips applied, then treated with insecticides if needed (Group 2 – 'Clips + tactical treatment'), or
- 3) not mulesed, but given a strategic application of dicyclanil (Clik™) in Sep-Oct (Group 3 – 'Unmulesed + early season treatment').

Large treatment groups (300-400 lambs per group at marking) were established to account for the often variable prevalence of breech strike that can occur. Observations include indicator traits for susceptibility to breech strike (dag, urine stain, breech wrinkle and breech bare area scores), breech strike, time spent crutching and shearing, weight of crutchings, breech cuts at crutching, greasy fleece weight and liveweight. Dag score is assessed on a scale of 0-5 (Larsen *et al* 1994) and urine stain on a scale of 1-5, where the lowest score denotes no dag or stain and 5 the most. The study will conclude in March 2011.

As expected, breech strikes have been strongly associated with dag and urine stain. Very heavy breech soiling (dag) was present on Farm 3, located in East Gippsland, at early season treatment on 25 Sep 2009 and crutching in Nov 2009, when the average dag score of unmulesed ewe hoggets was 2.5 and 3.3, respectively. Despite this, no breech strike was recorded in the unmulesed group at shearing in Dec compared to 2.9% breech strikes in mulesed ewes and 7.7% in clipped ewes, neither of which received an early season treatment. This is an encouraging finding during such a heavy challenge. Reasonable populations of *L.cuprina* were being trapped, 60% of the unmulesed group had severe dag (a dag score ≥ 3) and 74% had severe urine staining (a score ≥ 3).

Less dag was present at the hogget crutching on Farm 1 (Coleraine, SW Vic.) in Dec 2009 (average dag score of the unmulesed group = 2.3, with 26% having severe dag). Clipped sheep again had significantly more breech strike than the mulesed group (11.3% vs. 0.7%; $P < 0.001$). On this farm 1.4% of the unmulesed group (4 of 281) had breech strike 10 weeks after the early season treatment with dicyclanil. These strikes were in animals with dag scores of 3 or 4. This suggests a reduced period of protection in unmulesed sheep following dicyclanil treatment, but further work is needed to investigate this observation.

On Farm 2 (Elaine, central-west Vic.), no breech strikes were detected until Jan-Feb 2010. No breech strike occurred in the unmulesed mob given early season treatment, but there was significantly more strike in the Clipped compared with Mulesed group (3.6% vs. 0.2%, $P < 0.001$). Additional critical observations on breech strike will occur on all 3 farms in Oct-Dec 2010 when these 2008-born maiden ewes have their first lamb.

Preliminary results show that unmulesed ewe weaners on each farm took an average of 12-18 seconds (34-119%) longer to crutch and had 84-170 g (42-141%) heavier crutchings than mulesed sheep. Clipped sheep were intermediate between the mulesed and unmulesed groups, taking from 5-7 seconds (10-38%) longer to crutch and having up to 64 g (57%) more crutchings (dags + wool) than mulesed sheep. This has obvious implications for the profitability of wool production if mulesing is not used, and data from this study will be used to prepare comprehensive partial budgets comparing the costs and returns of running un-mulesed, mulesed and clipped sheep.

Larsen J.W.A., Anderson N., Vizard A.L., Anderson G.A. and Hoste H. (1994). *Aust. Vet. J.* **71**, 365.
McKenzie J.A. and Anderson N. (1990). *Aust. Vet. J.* **67**, 385.

Email: j.larsen@unimelb.edu.au