



Non Mulesing Network

Newsletter of the Department of Agriculture and Food

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WELCOME

Welcome to the ninth edition of the Department of Agriculture and Food's newsletter on the transition from mulesing and managing breech strike.

Please pass this newsletter on to anyone who is interested and encourage them to register for future editions by emailing Julia Smith at the Department of Agriculture and Food, Albany
julia.smith@agric.wa.gov.au .

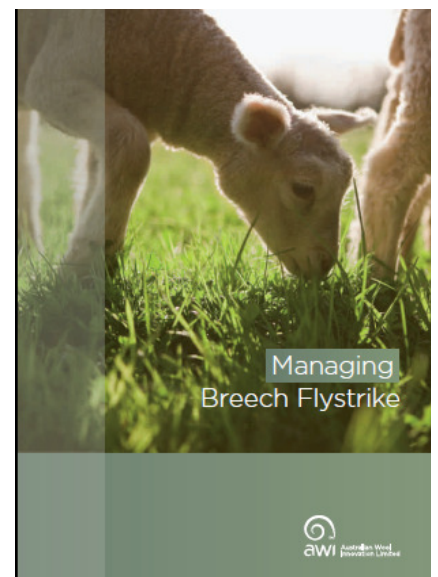
Have you recently stopped mulesing or are you thinking about it?

If you would like to share your experiences with other sheep producers who are in the same position and learn from other experiences, please email Julia Smith julia.smith@agric.wa.gov.au or phone 08 9892 8450.

In brief!

A new joint Department of Agriculture and Food (DAFWA) & AWI publication has been released on managing breech flystrike. This publication covers topics in depth on relative risks, alternatives, selective breeding and managing worms and dags.

To order your copy please contact Julia Smith on 9892 8450 or julia.smith@agric.wa.gov.au.



What are the consequences of selecting for low scores of the Indicator Traits?

John Karlsson, Johan Greeff, Tony Schlink, Nicola Stanwyck and Noreen Underwood
Mt Barker Research Station WA

Currently the Merino industry's genetic approach to reduce susceptibility to blowfly strike involves the use of indirect selection and some direct selection by culling struck sheep. Breeders tend to cull animals on various combinations of the so called indicator traits based on their experience and information gathered during the past decades.

These indicator traits have been identified since the first major reports of blowfly strikes in the early 1900s when breeders started to associate certain sheep types with higher susceptibility. With the advent of the Mulesing Operation in the late 1930s and the availability of a range of chemical blowfly treatments, the industry generally focused on the non-genetic control options for the next 70 years. However, with the recent focus on the phase out mulesing and clean and green production systems we are now focusing on the genetic options again.

Indirect selection based on the Indicator Traits

Currently the main indicator traits associated with susceptibility to breech strike are;

1. Wrinkles; breech and tail and by correlation also with body and neck wrinkles.
2. Wool coverage in the breech (the opposite to bare area) and correlated coverage in groin, bare legs and face cover.
3. Dags and dag moisture
4. Urine stain
5. Wool colour

These traits are scored on a 1 to 5 scale, where 1 is lowest or best and 5 is highest or less desirable and are available from www.wool.com.au.

There is a general agreement amongst breeders that dags, urine stain and wool colour should be reduced in sheep. However, there are divided opinions concerning the role of wrinkles and wool coverage. This basically stems from the notion that lower scores ('plain animals') are

associated with lower wool production. Overall there is a low to moderate positive correlation with these traits and greasy fleece weight.

Reproduction and Indicator Traits

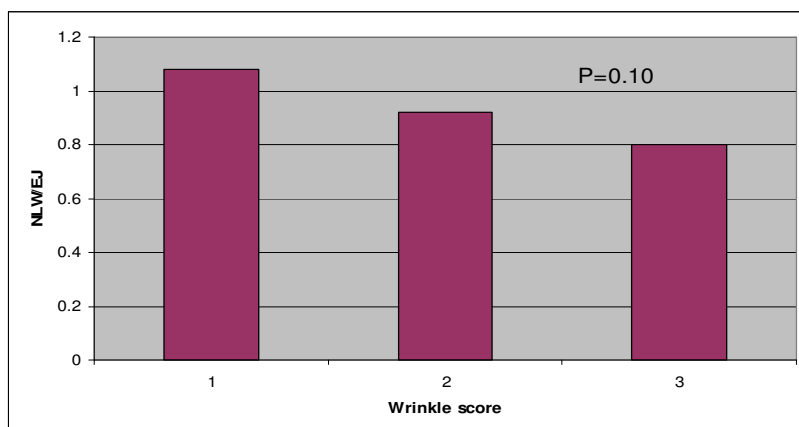
Reproduction rate is a composite trait consisting of ovulation rate, conception rate, fertility and survival rate of lambs to weaning. These traits determine lambing, marking and weaning percentages. In this example we will examine the effect of indicator traits on number of lambs weaned per ewe joined (NLW/EJ).

Wrinkle scores

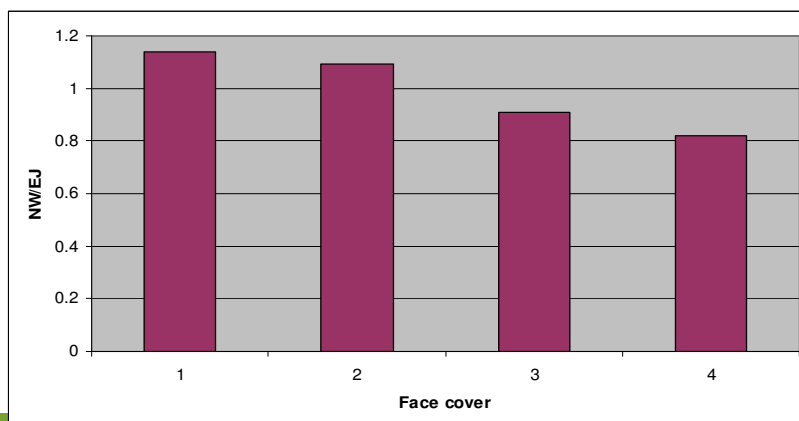
The following graphs show that NLW/EJ decreases as wrinkle, face cover and breech cover scores increase, fertility decreases.

Figures 1 2 and 3 show the relationship between wrinkle scores, face cover and breech cover with NLW/EJ

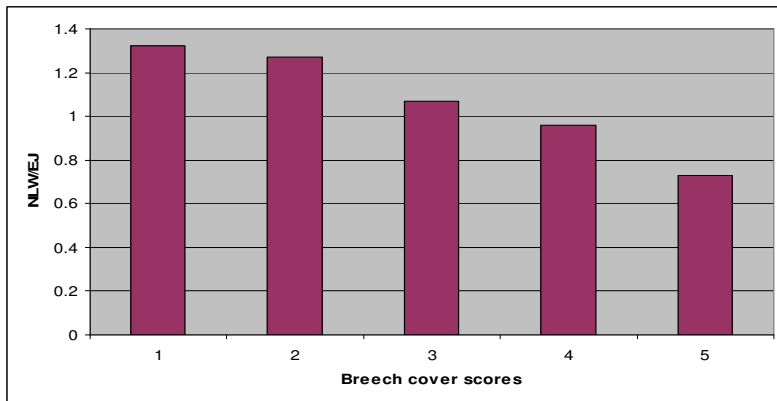
Wrinkle score



Face cover



Breech cover



These results show that there are additional benefits in having plainer sheep, with less breech and face cover apart from improving resistance to breech strike.

Evaluation

The results above can be incorporated into an economic model applicable to local conditions. In the final section of this evaluation we will examine how they actually expressed in the three lines of the Breech Strike Resistance (BSR) flock at Mt Barker WA.

Briefly the three lines were selected as follows:-

1. Selected A; both rams and ewes are selected on the indicator traits as well as

culled for actual breech strike. They are also selected on production traits as much as possible especially in the rams.

2. Selected B (or commercial) uses rams selected for resistance, the ewes are selected as in a commercial flock.
3. Control (or Selected C) no selection for breech strike resistance but in other respects matched to the other two lines.

The production and reproduction data generated in this study for the different lines was used to compare gross income. The gross returns at various price points for meat and wool are shown in Figure 4.

It is clear that the Select A line which produced about 0.5kg less wool than the unselected control, was the most profitable for a range of price scenarios. The differences between lines increased as the ratio between meat and wool prices decreased. This was mainly the result of increased reproduction rates which cancelled out the loss in wool production. The loss in wool production was not only due to plain bodiedness which was actually relatively minor, but was mainly due to the higher reproduction rates which obviously must have impacted on the wool production of these more fertile ewes.

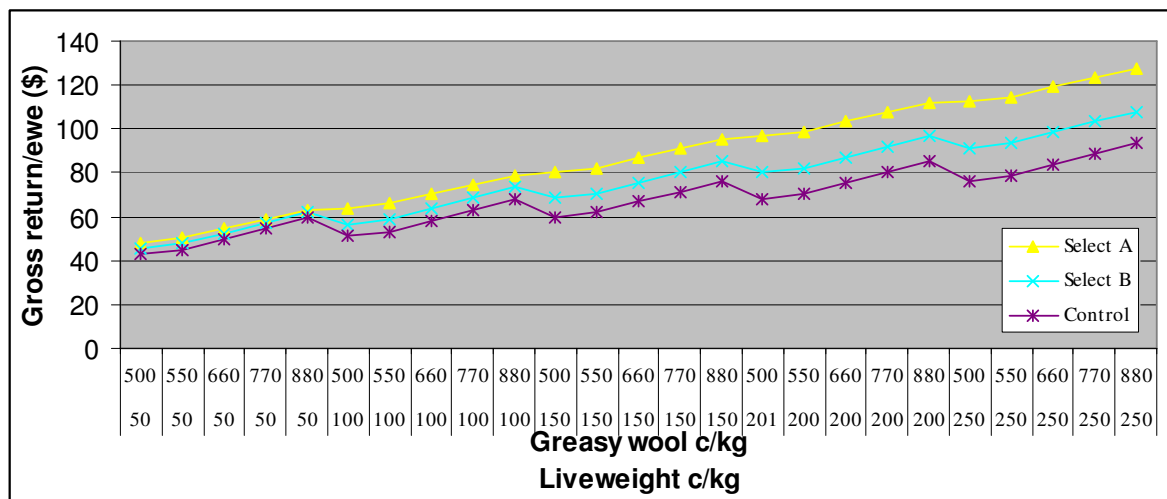


Figure 4. Returns from meat (c/kg live weight) and wool (c/kg greasy) per ewe from the three selection lines based on production data from the 2005 to 2007 born ewes

Managing unmulesed sheep – an evolution, not a revolution.

Michael and Helen Palmer

Michael & Helen Palmer of Jerdacuttup WA made the decision in 2008 to cease mulesing. They run a 1250 ha mixed cropping and livestock property, located approximately 10km from the south coast.

The 800 head self replacing ewe flock is the product of 20 years selective breeding in an environment conducive to flystrike. All lambs, except ewe lambs that are retained for breeding, are fed and sold as prime lamb at 11-12 months of age. The flock is plain bodied, and has a very low incidence of body strike with less than 1% requiring treatment. Prior to ceasing mulesing, breech strike was managed with mulesing, crutching, worm management and tactical chemical treatment with Vetrazin.

The decision to cease mulesing was primarily based on the 2010 phase out of mulesing and the view that it would be better to evolve a flystrike management system that did not involve mulesing, so that the welfare of their sheep and the profitability of their sheep enterprise could not be harmed by any controversy surrounding the issue.

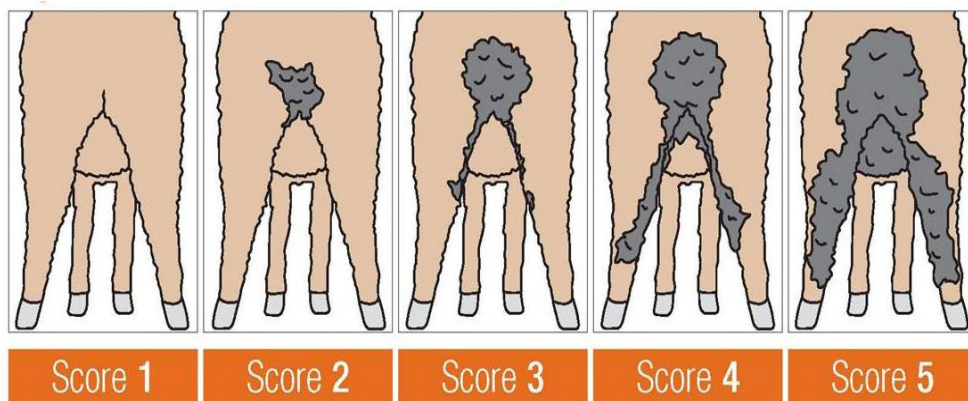
Michael and Helen have managed the transition by carefully planning and integrating available management tools, such as timing of shearing/crutching, worm management,

preventative chemical treatment and selective breeding in order to minimise breech flystrike.

They have found that staying on top of worms by having a sound worm management plan is crucial for minimising dag accumulation. A dag score four animal (figure below) can be up to seven times more susceptible to breech strike than a dag score one animal in the same mob.

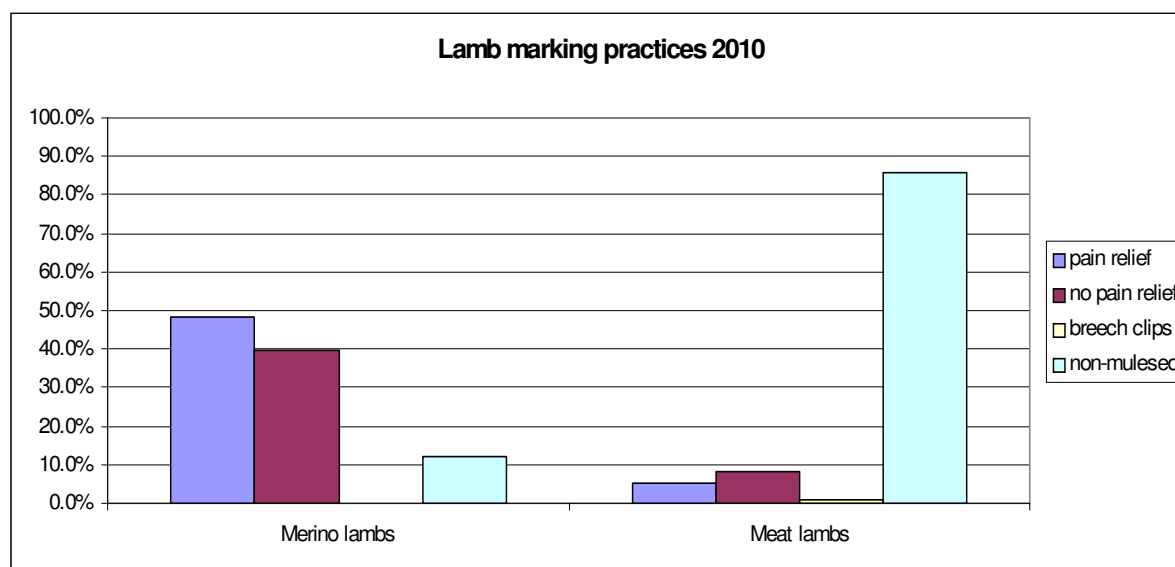
They also use the preventative breech chemical treatment Clik on all sheep post shearing in September and post-crutching in March. If needed, dags are now also controlled by a second crutching in August. They select on dags when selecting hogget rams and ewes for breeding, by culling the ones with dag scores 4 and 5.

Michael and Helen are now achieving a breech flystrike rate equivalent to their previous mulesed flock management system, at an estimated additional cost of \$4 per adult sheep per annum. Now that they have established this baseline, they are keen to incrementally lower their breech flystrike rate and associated management costs through continued selective breeding and fine tuning their management system.



Joint sheep Survey

A recent survey jointly funded by the Sheep CRC and DAFWA surveyed approximately 350 wool and sheep meat producers in the high rainfall and cereal sheep zone across Australia. This survey included a range of questions, including lamb marking practises and information on the National Wool Declaration (NWD). Over 90% of lambs across Australia bred for meat purposes are not mulesed, with approximately half of the mulesed lambs having pain relief applied to them at the time of mulesing. Approximately 88% of all merino lambs are mulesed, with 40% of these lambs having pain relief applied to them at the time of mulesing. 91% of producers surveyed had heard of the NWD, and 85% of those producers that have filled one out with in the past two years have filled in the mulesing status on the document.



The latest version of the NWD is available to download by [clicking here](#). A combined Classer's Specification and NWD has been developed to help align the declared mob information with the lines of wool produced at shearing. A separate page NWD is still available for brokers who do not wish to change their Classer's Specification.

A comprehensive question and answer publication on the NWD is also available by [clicking here](#).

Perfect time for strikes!

The recent warm weather, followed by heavy rainfall has meant optimum conditions for strikes. There are reports of up to 15% percent of flocks becoming body struck, with the majority of strikes not being picked up unless animals are yarded and inspected individually.

It can be very difficult to pick up smaller body strikes, especially in sheep with long wool, from just a quick inspection whilst driving through a paddock. Individual inspection is essential in areas where animals are at high risk, such as those that are wrinkly, have long wool and have fleece rot. If a strike is picked up in the mob, the entire mob should be yarded and sheep individually inspected. Body strikes can develop very quickly so sheep that have not been preventatively treated should be inspected thoroughly at regular intervals.

Producers who will not have time to check sheep during harvest are urged to preventatively treat their sheep. A list of registered chemicals, their wool, meat and export withholding periods, approximate protection period and cost is available on the following page.

Blowflies Chemical Table

Time of application	Application method	Chemical group	Examples of Registered products	Protective period	Wool Withholding period/Harvest Interval	Meat Withholding period	Export Slaughter Interval (ESI)	Cost/hd (50 kg sheep)*	Resistance reported
Off-shears	Spray-on	IGR	Clik Clik Plus	18–24 wks	3 mths 6 mths	28 days 21 days	120 days 70 days	52¢-\$1.04 \$1.87	None
Short wool	Spray-on	IGR	Clik	18–24 wks	3 mths	28 days	120 days	\$1.04	None
Long wool (6 wks – 6 mths wool)	Spray-on	IGR	Cyrazin Vetrazin Venus Virbazine Clik	11 wks 18–24 wks	2 mths 3 mths	7 days 28 days	28 days 120 days	30¢-\$1.04	None
	Jet	IGR	Vetrazin Venus Virbazine Cyro-fly	14 wks	2 mths	7 days	21 days	33¢- 73¢	None
	Jet	ML Spinosyn	Coopers Blowfly and Lice, Zinjet Extinosad Eliminator1	12 wks 4–6 wks	6 wks Nil	7 days Nil	7 days Nil	37 -41¢ 54¢	None
Long wool (6–9 mths)	Spray-on	IGR	Clik Vetrazin ,Virbazine	18–24 wks 11 wks	3 mths 2 mths	28 days 7 days	120 days 28 days	52¢-\$1.04 30-90¢	None
(6–10 mths)	Jet	IGR	Vetrazin, Venus, Virbazine, Cyro-fly	14 wks	2 mths	7 days	21 days	31-90¢	None
		Spinosyn ML	Extinosad Eliminator1 Coopers Blowfly and Lice Jetting Fluid, Zinjet	4–6 wks 12 wks	Nil 6 wks	Nil 7 days	Nil 7 days	72¢ 37 -41¢	None
(10–10½ mths)	Jet	Spinosyn ML	Extinosad Eliminator 1 Coopers Blowfly and Lice, Zinjet	4–6 wks 12 wks	Nil 6 wks	Nil 7 days	Nil 7 days	37 -90¢	None
(After 10½ mths)		Spinosyn	Extinosad Eliminator 1	4–6 wks	Nil	Nil	Nil	91¢	None

1 Protective period reduced on lambs due to open fleece and less lanolin.

* Prices as of 13 January 2011 & are estimates only. Two prices indicate an application for breech & breech and body.

IGR – Insect Growth Regulator ML – Macrocyclic Lactone