

A comparative study on the impact of the Breeching Process, on merino lambs.

J Brady[^], J Steinfort*

Objective To determine the impact of the Breeching Process (BP), applied to the tail and perineal breech of merino lambs at lamb marking, as measured by their average body weight gain (AWG), and average fleece weight, in the period following the cryogenic process.

Design The three groups of lambs in the trial are as follows: **Breeching Process (BP)** (now known as “Sheep Freeze Branding”) group, a **Surgically Mulesed (SM)** group, and **Lamb Mark Only (LMO)** group. The results for the **BP** and **SM** groups will be compared to each other, with the **LMO** group acting as a control. The trial was conducted at lamb marking and in conjunction with the other procedures listed.

Results The BP group had a 1.3 kg higher AWG in the first 36 days of the trial, and a 1.1 kg higher AWG up to day 267 of the trial, compared to the SM group. The fleece weights of the BP group were 0.1 kg heavier than the SM group. The BP group had the same AWG in the first 36 days, and had a 0.1 kg lower AWG, up to day 267, compared to the LMO group. The fleece weights of the BP and LMO groups were the same.

Conclusion There was no evidence of a negative impact on the lambs that had the BP process.

[^]Independent Trial supervisor; Dr. Joe Brady BVSc.

*Steinfort Agvet; Dr. John Steinfort BVSc.

Introduction

Mulesing is the removal of wool-bearing skin from around the tail and breech of a sheep using mulesing shears. The wool around the tail and breech can retain faeces and urine, which attracts flies. Mulesing is a common practice in Australia, particularly on highly wrinkled merino sheep. There are animal welfare concerns associated with the mulesing procedure.

The Breeching Process aims to reduce the excess skin on the tail and excess breech skin and or wrinkles adjacent the perineum, and to tauten the skin in these areas to allow ease of shearing and crutching. This in effect, will reduce dag accumulation and by correlation reduces the risk of breech fly strike.

Referring to the Breeching Process, wool-bearing skin from sides of the tail and adjacent to the perineal breech is tented upwards and clamped in between the applicator jaws, each being a length of 75mm on lambs. The liquid nitrogen is released from these jaws onto the base of the tented clamped skin. The cryogenic liquid freezes the clamped skin fold. As liquid nitrogen is applied to the base of the tented skin, the effective freeze ascends the clamped skin fold. This ensures a complete cryogenic freeze to the area of skin targeted. The gathering, tenting and clamping at the base of the targeted skin ensures the subcutaneous tissues and underlying muscles are protected.

There is some immediate discomfort experienced with the release of liquid nitrogen onto the tented skin. After release from the cradles, the lambs are noted to be moving around quite freely immediately and are actively moving and mothering up within the holding paddock.

The skin that has been cryogenically targeted goes through an initially swelling then contraction process, over the next 6 to 8 weeks. The process results in scab formation which covers the targeted skin area. When the underlying skin is fully healed, the scab lifts off as a narrow banded eschar with the associated wool. The adjacent skin tautens during the healing process and the junctional area has a fine lineal scar.

The cryogenic action is to freeze the full skin thickness of the targeted area. When the skin freezes, ice crystals are formed within the cells and the interstitial area. Intracellular components are structurally changed and results in a strategic degenerative and regenerative physiological process.

Joe Brady, a veterinarian, was the trial supervisor and Chris Parker was the livestock contractor and certified livestock weigher.

The trial was conducted with the assistance of Richard McShane, the manager of the property, "Mokanger", at Cavendish, Vic. Richard commented that they had a very good spring in 2016. The ewes and lambs were on a phalaris and subterranean clover pasture, and the lambs were later weaned onto a crop of Winifred brassica, and supplemented with a ration of oats and lupins.

All of the ewes included in this mob of 550 ewes had been pregnancy tested by ultrasound, and were diagnosed with single lamb pregnancies. The ewes were run as one mob prior to and after lambing. The age of the lambs in this trial ranged from 11 weeks down to 4 weeks of age, at the start of the trial.

Method

On the trial start day, on the 10.11.2016, three lambs at a time were loaded from a catching pen onto a five cradle rotary sheep handler, by the manager, Richard McShane. The first lamb loaded was allocated to the SM group, the second lamb loaded was allocated to the BP group, and the third lamb loaded was allocated to the LMO group. If a lamb had a very low body condition score, it was not included in the trial.

The SM group was tail docked with a gas knife, castrated with a ring if they were a ram lamb, and surgically mulesed. Tri-Solfen was applied to the mules wound, and the tail end wound. The BP group was tail docked with a Steinfort Agvet gas knife, and castrated with a ring if they were a ram lamb. The BP process was applied to the tail and breech of this group, and Tri-Solfen was applied to the tail end wound. The LMO group was tail docked with a Steinfort Agvet gas knife, castrated with a ring if they were a ram lamb, and Tri-Solfen was applied to the tail end wound.

All the lambs were identified with an Enduro Tags EID tag, with the back of the tag a different colour for each group. All the lambs had Click applied as a precaution to prevent fly strike, and were vaccinated with Gudair, Scabby Scratch, and 6 in 1 vaccines.

All the lambs had their EID tag read, and were weighed.

There were 536 lambs included in the trial. There were 188 in the SM group, 177 in the BP group, and 171 in the LMO group. The average weight for each group at the start of the trial was, 18.1 kg for the SM group, 18.9 kg for the BP group, 19.0 kg for the LMO group.

The first revisit was on the 16.12.2016, at day 36 into the trial. There were 534 lambs presented and their EID tags scanned, and each lamb was weighed. The second revisit was on the 30.1.2017, at day 81 into the trial. There were 534 lambs presented, and their EID tags scanned, and each lamb was weighed. The third revisit was on the 18.4.2017, at day 159 into the trial. There were 526 lambs presented, and their EID tags scanned, and each lamb was weighed.

All the lambs were then shorn, and each lambs fleece was weighed.

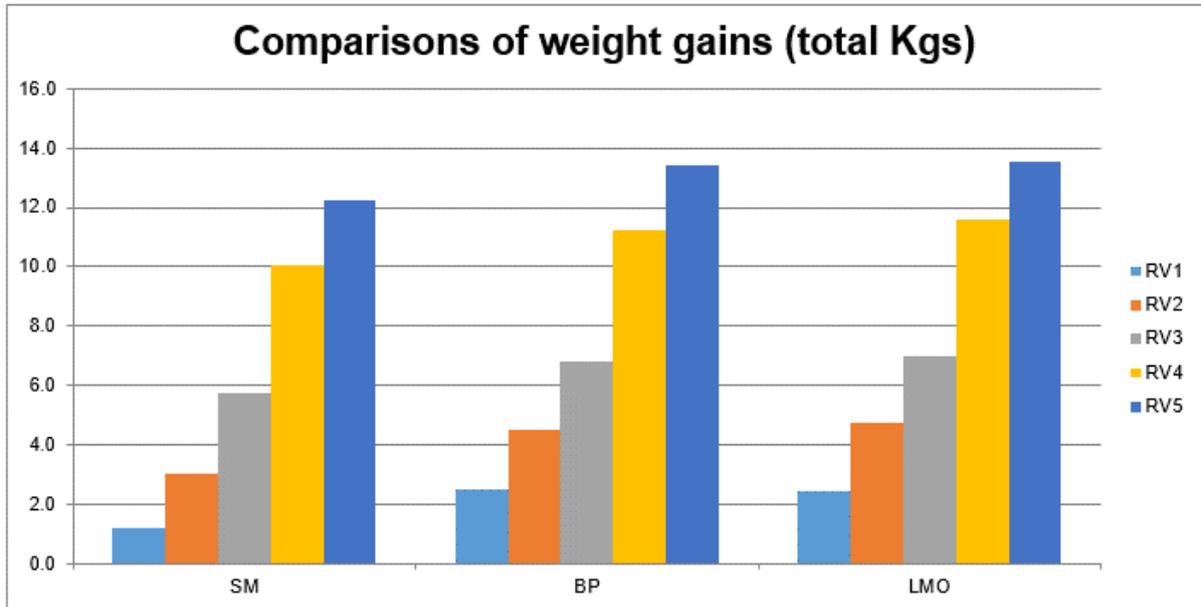
The fourth revisit was on the 21.6.2017, at day 223 into the trial. There were 525 lambs presented, and their EID tags scanned, and each lamb was weighed. The fifth revisit was on the 4.8.2017, and 520 lambs were presented, and their EID tags scanned, and each lamb was weighed.

Results

The average body weight gains for each group, in the interval between each weighing of the lambs, are displayed in the following table and graph.

Comparison of average interval weight gains (Kgs)

Process	Day 36 (RV1)	Day 81 (RV2)	Day 159 (RV3)	Day 223 (RV4)	Day 267 (RV5)	RV2 - RV1	RV3 - RV2	RV4 - RV3	RV5 - RV4
SM	1.2	3.0	5.7	10.1	12.3	1.8	2.7	4.3	2.2
BP	2.5	4.5	6.8	11.2	13.4	2.0	2.3	4.5	2.2
LMO	2.5	4.7	7.0	11.6	13.5	2.3	2.3	4.6	1.9



For the first trial weight interval, the AWG for lambs in the SM group was 1.2 kg, for the BP group it was 2.5 kg, and for the LMO group it was 2.5 kg. For the second trial weight interval, the AWG for lambs in the SM group was 1.8 kg, for the BP group it was 2 kg, and for the LMO group it was 2.3kg.

For the third trial weight interval, the AWG for lambs in the SM group was 2.7 kg, for the BP group it was 2.3 kg, and for the LMO group it was 2.3 kg. For the fourth trial weight period, the AWG for lambs in the SM group was 4.3 kg, for the BP group it was 4.5 kg, and for the LMO group it was 4.6 kg. For the fifth trial weight interval, the AWG for lambs in the SM group was 2.2 kg, for the BP group it was 2.2 kg, and for the LMO group it was 1.9 kg. The AWG over the whole trial period in the SM group was 12.3 kg, in the BP group it was 13.4 kg, and in the LMO group it was 13.5 kg.

Fleece Weights

Average Fleece Weight (Kgs)	RV3
SM	1.70
BP	1.80
LMO	1.80

The average fleece weight for SM group was 1.7 kg, for the BP group it was 1.8 kg, and for the LMO group it was 1.8 kg

Discussion

The SM group had a lower AWG compared to the BP group, in both the first and second weight interval periods. This lower AWG was particularly noticeable in the first weight interval period, where the AWG for the SM group was 50% below that of the BP group.

There was no AWG difference between the BP group and the LMO group in the first weight interval period.

The AWG over all periods, totaling 267 days, was 1.1 Kg lower in the SM group compared to the BP group. The initial difference between these two groups in the first revisit period was 1.3 Kg. The AWG over all periods, totaling 267 days was 0.1 kg lower in the BP group compared to the LMO group.

There was only a small difference in the fleece weights between the groups, with the SM group fleeces 0.1 Kg lighter than those of the BP and LMO group.

Conclusions

The SM group received an initial setback due to the surgical mulesing procedure, that was quite marked compared to that of the BP group. This was evident at the first revisit, where there was a 50% reduced AWG.

After 267 days of the trial, the SM group had an AWG that was still less than the AWG of the BP group. This is evidence that the impact of the surgical mulesing procedure was having a prolonged effect on AWG for the lambs that were mulesed.

As there was no AWG difference between the BP and LMO groups at the first revisit, it is evident by the AWG comparisons that the BP process did not provide a negative impact on the lambs.