CASE STUDY

PARKDALE SRS®

Bridging innovation and profit: Don Mudford and family's successful journey towards ending mulesing and tail docking through good breeding

Meet Don Mudford, a wool grower from the Central West of New South Wales, Australia. Don's family has a rich history of farming and grazing in the Gilgandra and Dubbo regions, dating back over a century since 1912. Their dedication to the land and farming runs deep in their veins.

In 1990, Don and his wife, Pam, established the Parkdale Merino Stud after years of breeding rams for their family properties. With around 25,000 sheep under their care, their mission lies in promoting overall healthy sheep and minimising mutilations. They have a commitment to higher welfare practices, and their sheep are naturally resistant to flystrike and mulesing isn't required. Notably, 1,000 of their sheep have been bred for shorter tails, negating the need for tail docking. Don and his family showcase that breeding healthier and happier sheep is not only an innovative choice but a profitable one. FOUR PAWS visited the Parkdale Merino Stud and asked Don Mudford about his transition towards breeding flystrike resistant sheep and away from mutilation procedures such as mulesing and tail docking.


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> "Breeders need to show leadership towards better merino sheep welfare outcomes while maintaining profitability."
>
> — Don Mudford

FOUR PAWS: What was your motivation to phase out mulesing, and what challenges and benefits did you encounter?

Don Mudford: The tipping point for me was over 20 years ago when my son brought school friends home from town that hadn't witnessed mulesing before. They just couldn't believe it. Their reaction opened my eyes. We had already started breeding differently at that time; however, we didn't think of mulesing when changing our breeding method. It was about flystrike prevention, and we didn't think that mulesing was cruel. Everyone did it. But the shock of these two youngsters changed my perspective. Our aim is to look after the sheep. We are thankful for the them and their wool. They are our livelihood.

Also, we knew that no amount of mulesing stops all tail flystrike or flystrike along the body (bodystrike). Mulesing is no full-body solution. Chemicals and good management practices are still required.

Eventually, we started to phase out mulesing and in a very dry 2002, we didn't mules the wethers[a] as we didn't want to set them back, and we noticed that even though we hadn't mulesed, we had very little flystrike. We did this again in 2003 with a portion of the ewes[b] as well, and then in 2004, we completely

a. Wethers are adult male sheep that have been castrated so they cannot breed.

b. Ewes are adult female sheep (over one year).

stopped mulesing. This was achieved because of using the SRS® breeding principles focusing on smooth and loose skin types with smaller sweat and wax glands[c]. We had no problems with the ewe lambs as they matured, and we were surprised how well the lambs grew. It took us five breeding cycles to phase out mulesing since we had to breed the sheep from scratch. Mulesing-free genetics like SRS® (Soft Rolling Skin) genetics are available now, and when you introduce them to your flock, you can end mulesing within only one breeding cycle. We haven't mulesed for over 20 years now. It is actually so simple that I can't believe that the industry hasn't made more progress.

FOUR PAWS: What is the key to breeding 'plain-bodied' sheep that do not require mulesing, and what would you recommend to other wool growers?

Mudford: The key is the right ratio between smooth and loose skin and body fat. If you get that right, it is simple to breed non-mulesed sheep with little to no chemicals. Wrinkly or flat-skin sheep have thicker skin. Thick skin is a burden for the animal who must carry the amount of skin which can amount to many kilos. A lot of energy goes towards the maintenance of the heavy skin, and thick skin attracts blowflies who cause flystrike. It is the large sweat[c] and wax glands in a thick skin sheep that produces lots of sweat and wax. When sweat gets wet, it sends off an odour and the wax keeps it wet longer, causing the odour to remain with the sheep longer after rain. If blowflies are active, they hone in on the odour, bite the sheep, lay their eggs, the eggs hatch into maggots and the maggots eat the flesh of the sheep.

I recommend growers to actively select for a thin loose skin that has small sweat and wax glands that do not attract blowflies. A thin skin also has better blood flow throughout the skin to promote faster growth of fibres. The fibres are more cylindrical and have less breakage when processing. Also, the fibres grow straight and more even, but also longer around 140mm per year in 18–20-micron wool compared to 90mm, which is the industry norm. Most processing machines require the industry norm. Therefore, we shear twice a year or every 7 to 10 months. While wrinkly sheep have more surface space, SRS® plain-bodied sheep have longer and faster growing fibres. Hence, there is no disadvantage when it comes to the amount of wool from plain-bodied sheep. Frankly, since we have switched to SRS® breeding principals and flystrike resistant sheep, we produce 11% more wool.

On the one side, longer wool from plain-bodied sheep has to be shorn more often to fit the current wool processing machines. That means higher shearing

c. There are two glands in the sheep's skin: The sebaceous or wax glands, which secrete wool fat or grease onto the fibres, and the sweat glands, which produce suint, or sheep sweat.

PLAIN-BODIED SHEEP BREEDING

- The SRS® (Soft Rolling Skin) technology for breeding Merino sheep was developed by the late Dr Jim Watts and applied to flocks in Australia since 1998[2].
- While the term and technique are trademarked for protection, breeding plain-bodied sheep can be achieved also without SRS® genetics.
- Breeding plain-bodied sheep types comes down to breeding an overall healthier sheep with a balanced ration between smooth and loose skin and body fat. Wrinkly and thick skin is resource intensive to maintain for the animal and can enable flystrike.
- Other traits of plain-bodied sheep besides less wrinkles are low primary fibre diameter, high fibre density, and high fibre length.
- Breeding naturally flystrike-resistant sheep alongside adequate animal husbandry eliminates flystrike AND mulesing.

costs or a discount if you directly sell the longer fibres. On the other side, you save money and time through not having to mules and you get premiums for your non-mulesed wool (around 25% more for mulesing-free with a certification).

I actually don't believe that I get premiums. I think I am getting the right price for the right method used and other growers are getting a discount or penalty for their mulesed wool. It is about how you frame it. If people understood that they are getting a penalty they might think differently about mulesing.

FOUR PAWS: What are the biggest drivers to increase lamb survival rates, and what would you recommend to other wool growers?

Mudford: By selecting for SRS® plain-bodied sheep with a balanced smooth skin and body fat ratio, we have achieved high fertility with higher lamb survival, faster weight gains in lambs, not oversized adult ewes, adult ewes gaining weight faster after weaning their lambs and more efficient feed converters of pasture to weight gain and wool growth. Our sheep overall require less energy and eat less feed to produce the same amount of meat and wool because of their feed conversion which is also better for the environment.

At our Parkdale Merino Stud, we specifically select for higher lamb survival and less flystrike problems, and now **40% more lambs survive**. By selecting for a thin loose skin, growers can maintain fleece weight on their Merino sheep while achieving higher lamb survival.

To tackle the issue of lamb mortality, we scan our ewes for pregnancies (twins, singles and dry). Based on that knowledge, we separate them in smaller groups and adapt their feed to their needs (pregnant ewes need more feed, pregnant with twins even more). That way, we make sure that our ewes get the care they need. When the ewes are ready to start lambing, we spread the ewes out into all available paddocks to minimise mob size. We also try to not disturb ewes when lambing and we plan to plant more trees and continue to plant saltbush so that the animals have more protection from wind and weather. If an ewe moves more than five metres from the birth site within the first five hours, there is around 85% chance of mismothering.

In comparison to our previous wrinkly sheep, back then we had a lambing rate of 95%, now we are at 135%. We have witnessed on our farm that a higher genetic fat positively contributes to lamb survival. What we have found on our farm is that if we depart from the industry norm, the average genetic fat expressed as and ASBV[d] is around 0, ewes that have +1mm genetic fat resulted in an 18% higher lamb survival. An extra +2mm results usually in 36% higher lamb survival. A healthy genetic body fat is the key and a crucial part of the genetic solution to end mulesing, increase lamb survival and many more benefits.

According to a survey conducted by the Australian Wool Innovation and Meat & Livestock Australia, too many sheep producers are docking sheep tails too short[3].

While tail docking is practiced to reduce the susceptibility to flystrike, it can have the opposite effect if the tail is cut too short. Other potential health risks are:

- **slower rate of healing after docking**
- **greater susceptibility to infection and arthritis**
- **increased risk of rectal and uterine prolapse**
- **higher susceptibility to tail cancer (squamous cell carcinoma).**

A study conducted by CSIRO already in the 1930s found out that no tail docking is better than docking too short (medium or short tails)[4].

FOUR PAWS: What experience have you had with breeding for shorter tails instead of docking them, and what benefits did you encounter?

Mudford: We have some 1,000 sheep we have bred with shorter tails instead of docking their tails. We did this by measuring and selecting shorter tails. We have found that the tail length is 75% heritable, that these sheep have more lambs and are generally heathier. While we have clients who look specifically for the short tail merinos, some clients that are in geographically difficult areas (i.e. high blowfly risk, densely populated) still request tails to be docked. Breeding for shorter tails is, unfortunately, still an exception in the Australian wool industry and is met with scepticism and reluctance to change a long-standing tradition. Stud breeders need to show leadership towards better merino sheep welfare outcomes while maintaining profitability.

d. ASBV = Australian Sheep Breeding Values

FOUR PAWS: Is there anything you would like to share with fashion brands on how they can support efforts to increase animal welfare at the farm level?

Mudford: Brands need to encourage growers to stop mulesing and voice their concerns more actively in rural media, as growers are not always getting the information. Most sheep-growing industry bodies are pro mulesing and may not facilitate the free flow of information.

Brands should be saying they are paying a penalty (discount rate) for wool from mulesed sheep. The current language in the media is that there is a premium for non-mulesed wool. I feel if this was turned around and growers thought they were getting a penalty (discount rate), they might actively change their breeding focus.

Don Mudford and family are proving that an animal welfare driven approach in the wool and sheep meat production is possible and a good business choice too. Their journey inspires others to embrace the path of compassion and respect for the sentient beings in their care.

What is needed now are more retail brands who share these examples with their supply chains and to commit to only source the best available certified wool. Mutilation procedures such as mulesing or tail docking are obsolete with the right breeding methods and farm management. The time is better than ever for brands to select more sustainable techniques and to protect the most vulnerable in their supply chains.

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The FOUR PAWS Case Study series are designed to shine a spotlight on brands or producers that have overcome particular challenges and to share their learnings with others. The inclusion of a producer as a case study subject does not mean FOUR PAWS endorses the overall performance of the producer in relation to animal welfare.

For more information for developing an animal welfare policy, please refer to the FOUR PAWS Policy Guidelines for Fashion Brands and Retailers.

1. Rogers G. 1. Skin Structure and Function. The Australian Wool Education Trust licensee for educational activities University of New England. 2009.

2. 2021 SRS Genetics – Quality and Humane Australian Merino Wool. [accessed 2023 Aug 31]. https://srsgenetics.com.au/

3. Survey revealed too many sheep producers docking tails too short - Seedstock Central. SeedstockCentral. 2023 May 7 [accessed 2023 Aug 31]. https://seedstockcentral.com.au/2023/05/07/survey-revealed-too-many-sheep-producers-docking-tails-too-short/

4. Are you docking to the right length? | Meat & Livestock Australia. [accessed 2023 Aug 31]. https://www.mla.com.au/news-and-events/industry-news/are-you-docking-to-the-right-length