

LIVESTOCK

Breeding for shorter tails

BY HELEN DE COSTA

THE sheep industry has heard plenty about bare breech and shedding breeds to cut maintenance costs and improve welfare, but what about sheep with short tails?

A handful of breeders and researchers have been looking into and selecting for the trait.

Among them is Victorian sheep producer, John Keiller, Cashmore, who has developed a shedding composite strain he calls Nudies and short tails is one of the traits for which he selects.

Throughout Australia Mr Keiller has found there are five different types of sheep tail.

"We've got thin-tailed sheep with short tails, we've got thin-tailed sheep with long tails and that's mostly what we have in Australia," he said.

"If you go further, we've got fat-tailed sheep with short tails and fat-tailed sheep with long tails. Then the last one is you've actually got fat-rumped sheep, which is a separate characteristic again.

"I guess the animals we would like to have are the thin-tailed sheep with short tails."

He said the process essentially involved the selection of fewer caudal vertebrae (bones in the tail).

"So some of the world's sheep have about 12 bones in their tail and some of the shorter-tailed sheep are about eight to 10," he said.

His process includes measuring the length of the tail relative to the hock of the animal.

"That gives us some relative between tail length and skeletal size," Mr Keiller said.

The ability to apply selection pressure arose from the existing variation in tail length, which occurred largely between breeds.

Mr Keiller said throughout the breeds there was good variation of tail length, but within individual breeds there wasn't as much.

"We've got Scandinavian animals like Finnsheep, East Friesian, Gotland Pelts that have all a lot less bones in their tails," he said.

"On the other end of the spectrum we find something like Wiltshire horns with, you know, like 16 or 18 bones in their quite long tails."

The trait was also highly heritable.

"The literature says that it's from 37 per cent to 80pc heritable, but it seems to be around 60pc," Mr Keiller said.

"It's probably the most strongly inherited characteristic we deal with apart from four legs and the head and a tail on a sheep."

Mr Keiller has found there were numerous benefits in having a shorter tail length especially from a welfare perspective, one being the producer has no need to dock the tail, as well as having less dags.

Animal Genetics Breeding Unit principal scientist, Dr



John Keiller, Cashmore Nudies, Cashmore, Vic, has been selecting for short tails within his Nudie sheep flock for the past 10 years. Photo supplied.

Daniel Brown, Armidale, said the unit had done early analysis of the topic which showed the trait was highly heritable.

"We have amassed a fair bit of data from our research flocks and there has been some work done to show that it is consistently easy to measure and heritable in a range of breeds," he said.

Don Mudford, Parkdale Merinos, Dubbo, is another producer that has his sheep by the tail, measuring the

trait since 2010.

"In a traditional Merino ewe the length is half way from the hocks to the ground," he said.

"In our flock, all our 10,000 ewes would be hock length or shorter.

"In our more targeted short-tailed ewes, it would be half that length again."

The program reached a short tail size within the flock quickly, with Mr Mudford planning to start a new selection phase with a sire

from another breed, such as Finnsheep, with a short tail to cross with the Merino to reinforce the short tail trait while also retaining high wool quality and skeletal integrity.

This wouldn't be the first time the stud has used the Finn breed to modify its flock's characteristics, after having used the breed to reduce wrinkles in its Merinos 20 years ago.

However, Dr Brown said due to limited studies,

researchers were yet to ascertain whether there were other antagonistic traits and the department planned to investigate further.

"We'd like to study it more before we make too many conclusions about how to breed for short-tailed sheep," Dr Brown said.

"We, from a research perspective, would like to do more analysis and really understand how tail length is correlated to other important traits."



University of Queensland senior lecturer Dr Sarah Meale will help lead a goat emissions project. Picture supplied

Goat emissions put into the spotlight

GOAT producers are set to benefit from a three-year project which aims to quantify greenhouse gas emissions from goats and assess carbon balance.

University of Queensland senior lecturer Sarah Meale and a team of meat scientists, parasite and heat experts, as well as methane researchers, will lead the project.

Dr Meale has recently focused on feed efficiency and environmental sustainable ruminant production systems, with much of this work based on reducing methane emissions and enhancing production.

The Goat Sustainability Credentials project will help understand "what is happening" within the Australian goat industry, according to Dr Meale.

"Purely from an emissions

perspective, we want to look at methane emissions and carbon sequestration," she said.

Meat goats are the target of the project and identifying quantified emissions from a range of production systems is the goal.

"Right now, we do not have a baseline measurement with what is going on," Dr Meale said.

"We want to look at all different eco-types, not just in a feedlot setting or rangeland environment.

"But, we are focusing on the rangeland environment in that ecosystem because it is so vast."

Dr Meale hoped the project would highlight system approaches from an economic perspective - a cost and benefit management strategy.

"We will look at different systems, including herd rotation and management strategies, which play into those emissions," she said.

The project will estimate what methane emissions are coming out of goats, and not just at one age-point, across both sexes and different reproductive statuses.

It will also include management recommendations for goat systems.

Possible recommendations could include reducing the herd age because smaller animals might produce less methane, breed in a different season, aim for different genetic goals and nutrition and parasite control. Researchers will undertake a range of assessments and an on-farm methane measurement will also be conducted.

- VANESSA BINKS