GENOMICS

Corriedales seek superior taste traits

University of Adelaide honours student Hannah Gordon and Professor Wayne Pitchford (seated) collecting data with seedstock producers Legh Jenkin, Brenton Lush, Peter Blackwood and John Manchester.

Corriedale ram breeders are one step closer to being able to use genomic tools to select for superior eating quality traits.

The Corriedale Eating Quality Genomics project, funded by MLA Donor Company (MDC) and the University of Adelaide, is the brainchild of a group of like-minded Corriedale seedstock producers from Tasmania, NSW, Victoria and SA.

The breeders formed the Performance Corriedale Group in 2006 (see story on page 29), with a shared focus on selecting for performance using LAMBPLAN and working together to promote their breed.

The group currently has eight members and works closely with Sheep Genetics staff to optimise their breeding programs.

Backing up 'good eating' claim

Group founding member Peter Blackwood said the genomics project grew out of a desire to quantify anecdotal accounts of the superior eating quality of Corriedales.

"As a group, we've always said Corriedale meat ate well and we've seen lambs do well in taste-test competitions," Peter said.

"But, as Corriedales are one of the minor breeds, we weren't going to get enough research through the MLA Resource Flock to allow us to benchmark our sires against the other breeds, or quantify our eating quality claims.

"At one of our group meetings we said 'how can we do this?' In six months we had a progeny trial up and running."

Dataset building

The progeny-testing trial is being led by Professor of Animal Breeding and Genetics, Wayne Pitchford, from the University of Adelaide.

The aim of the trial is to test the progeny of 45 Corriedale rams and 900 Corriedale ewes over three years, resulting in DNA testing of 900 lambs (genotyping) with their physical traits recorded (phenotyping).

"There have been minimal numbers of Corriedales included in industry-supported reference population flocks to date, with the eating quality traits of only 218 progeny measured so far," Wayne said.

"We aim to have about 2,000 records for a breed included in the multi-breed data set to be confident of the genomic predictions for that breed, so clearly the Corriedales had insufficient records for the genomic tests to be of value.

"In this project, we're aiming to add data from an extra 900 Corriedales – it won't quite take us to 2,000 but it will get us halfway towards it.

"We're also using purebred Corriedale progeny which will give us more information about genetic variation within the Corriedale breed."

Results so far

Progeny were slaughtered in April 2018 and 2019 and, according to Wayne, early results appear to back breeders' claims about eating quality.

"The carcases were highly regarded by the processor," Wayne said.

"They hung up well, displayed adequate muscle and none were over-fat.

"In terms of intramuscular fat (IMF) and shear force of the 2018 lambs, IMF was up to 10%, which was fantastic, and the majority of shear force results were in a range that was highly acceptable to a consumer."

Meat samples taken from the progeny processed in 2019 will be tested for IMF and shear force in the next few months.

A lesson in collaboration

Wayne said he was impressed by the cooperative culture of the Performance Corriedale Group.

"People are sharing semen between studs so there's good genetic linkage, which makes their data more valuable, and there's been tremendous support in supplying sires for the trial" he said.

Producers leading the way

The group's cooperative and proactive attitude had also contributed to MDC's support of the project, according to Caris Jones, MLA Project Manager – Genetics.

"This is one of the first projects we've seen in which producers are directly involved in creating their own reference population for eating quality traits," Caris said. ■

Caris Jones
E: cjones@mla.com.au
Peter Blackwood
E: peter.claire@harlandrise.com.au
Wayne Pitchford
E: wayne.pitchford@adelaide.edu.au