



Producers embrace sheep DNA testing

AUSTRALIA'S sheep producers are queuing up to adopt new DNA technology, with the latest Sheep Genomics Pilot Project fully subscribed.

The DNA testing program, conducted by the Co-operative Research Centre for Sheep Industry Innovation (Sheep CRC), was booked out within days of its opening in August.

The Genomics Pilot Project offers three DNA testing programs: a SNP test for parentage at \$17/test; a SNP test for Merino poll/horn for \$17/test; and the 50k SNP test for prediction of genomic breeding values for sires at a cost of \$50/test. Merinos tested for parentage, or with the 50k SNP, are receiving the poll test results at no additional cost.

"The 1500 genotyping tests available as part of Pilot Project III have been fully subscribed, and a further 1500 tests allocated for commercial scale trials has also been over-subscribed," Sheep CRC chief executive James Rowe said.

"With the use of DNA analysis and genomic breeding values being a very new technology, R&D is occurring in parallel with the Genomics Pilot Projects in order to define the most effective use of the new technologies in practical breeding programs.

"For this reason, the CRC's genetics research team will be working closely with a group of nine commercial-scale breeders who have submitted expressions of interest.

"This is a resounding vote of confidence in the commercial value of genomics technology for sheep breeding programs."

The Sheep CRC has conducted a Genomics Pilot Project yearly since 2010, with the number of rams tested each year increasing dramatically, from approximately 450 rams in 2010, to 860 rams in 2011 and now 3000 rams in 2012.

This year's project will build on the earlier trials, which provided genomic predictions for new traits including dressing percentage and lean meat yield, together with traits for meat eating quality such as intramuscular fat and shear force that are difficult and expensive to measure.

It is expected that the accuracy levels of research breeding values (RBVs) and Australian Sheep Breeding Values (ASBVs) will further improve as a result of the additional data collected during the Genomics Pilot Project and through the Information Nucleus program.

Ian Gillett, of Wunnamurra Poll Dorset Stud, Jerilderie, NSW, is a repeat participant in the pilot projects, which have delivered him with powerful data to breed superior rams and turn off lambs to market quicker than before.

Last year Mr Gillett had six ram lambs genotyped, and from the results he selected three eight-month-old rams for use at joining.

"The RBVs from last year's project really showed where we can go with our breeding programs and how quickly we can access the feedback we need to make better ram selection decisions," he said.

"From the results of the DNA tests you can improve your flock more quickly by using younger sires, rather than having to wait for 12 months for the feedback provided by their first drop of lambs.

"I do my first selection of rams at six months of age, and the DNA tests give me a valuable second



AWGA - News Update

opinion about rams which are the best ones to keep for breeding.”

Following scanning this spring, he will submit blood cards for 20 ram lambs to be genotyping tested. The combination of real-time growth data from scanning, and the DNA profiling will then be used to select which rams are used over his ewe flock.

As a producer of both commercial prime lambs and a breeder of 150 stud rams for sale to other sheepmeat producers, Mr Gillett particularly focuses on estimated breeding values for growth rates and post weaning weights, as well as eating quality, lean meat yield and fat levels.

“The lamb available today is just brilliant to eat and we don’t want to lose that by giving customers a bad experience,” he said.

“Genotyping has given us the power to ensure we breed animals with the right genes for a good eating experience.”

Prof. Rowe said it was encouraging to see that 28 breeders were participating in the pilot projects for a second time, including 17 who had participated in all three years.

“There are clearly a number of breeders who are gaining confidence in the use of DNA testing to produce genomic breeding values and are submitting greater numbers of rams each year,” he said.

“However, there are others still working out how to best use the tests as part of their breeding programs and many of these are watching closely for future developments.

“The main questions that each breeder needs to review are: which animals will give most valuable information from genotyping analysis; how many animals should be genotyped as a proportion of young rams under selection; and what are the traits targeted for improvement using the genomic testing?”

“Optimising breeding designs to account for these three questions is complex and is still a job for the research team working closely with leading breeders.”

With the cost of DNA testing continuing to fall, the Sheep CRC is working with Sheep Genetics to develop details for commercialisation of genomic technologies in the sheep industry.

More information on the Sheep CRC’s Genomics Pilot Project is available at www.sheepcrc.org.au



<http://theland.farmonline.com.au/news/nationalrural/livestock/sheep/producers-embrace-sheep-dna-testing/2628187.aspx?storypage=0>