

Supercharging genetic knowledge

“The participating studs are hugely supportive of the project and standing by waiting for the information to come through.”

While the introduction of DNA testing for sheep has been a huge breakthrough, a group of ram breeders are working on speeding up the rate of genetic gain by boosting it with phenotype information.

The Superwhites ram breeding group, comprising White Suffolk breeders from around Australia, is participating in the MLA Donor Company Producer Innovation Fast-Track program on a project to improve the rate of genetic gain in hard to measure traits, like eating quality and lean meat yield.

Established 22 years ago, the group fosters co-operation and progress by assessing a collective 4,000 rams a year to create a shortlist of 10 superior rams, whose genetics are progeny tested each year across the member flocks. It's estimated sires from the group influence almost one million lambs/year.

Back story:

While ram breeders have been quick to embrace DNA testing, the Superwhites Ram Breeding Group felt the power of DNA-driven information could be turbo-charged with the addition of phenotype testing of eating quality traits on slaughtered animals.

The project:

Seventeen flocks across Australia are participating with more than 2,000 young males being DNA tested and then a percentage of cull animals (300 in total) being slaughtered for phenotype measurement of carcass and eating quality traits using technologies and measurements such as DEXA, shear force and intramuscular fat.

Superwhites group member and project co-ordinator Troy Fischer said while this is initially a short term project, it will accelerate innovation for the entire White Suffolk breed by speeding up the rate of genetic gain in improved eating quality and lean meat yield.

“If we continued on our path of selection for faster growth and more meat yield without any selection pressure on marbling and tenderness we would steadily erode the eating quality of lamb,” he said.

Outcomes to date:

To collect phenotypes for shear force and intramuscular fat are expensive – around \$200 a lamb, so the Producer Innovation Fast-Track program is really assisting us to collect this data that would be somewhat cost prohibitive on our own. According to Troy this project could impact commercial sheep production within five years through continued improvement on these traits during that time.

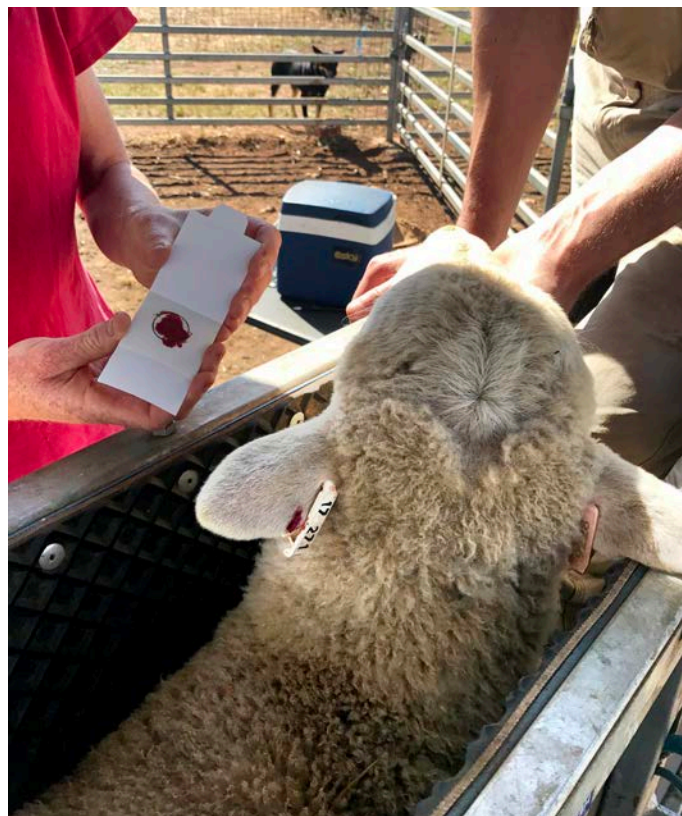
“We want to ensure our rates of genetic progress are the best they can possibly be and this project is enabling us to utilise measurements which can be applied for a direct commercial outcome – that is breeding rams that will produce lambs with the best eating quality,” he said.

Already, Troy said, the group expect to see the slaughter data provide significant additional accuracy than just stand alone DNA testing,

“While DNA testing is valuable, combining it with slaughter data makes it really powerful,” he said.



Taking carcass measurements to establish meat eating qualities.
Image courtesy Emma Winslow, SARDI



Superwhites producers Troy and Nette Fischer taking DNA tests on sheep participating in the project.

“The participating studs are hugely supportive of the project and standing by waiting for the information to come through.

“We organised a teleconference with 24 hours notice the other day and 16 out of 17 participants joined in. I’ve never seen that level of engagement before.”

Sheep CRC researchers and Sheep Genetics staff have been involved in group teleconferences, which has opened a two-way line of communication.

“Every time we talk to the researchers we learn something new. A common view amongst the breeders was that we would need large numbers of progeny with slaughter phenotypes to get a significant lift in accuracy,” Troy said.

“During one of the first teleconferences it was explained to us by researchers that you can have a few as five progeny slaughtered and measured for marbling (percentage of IMF) and we will get a large lift in accuracy in the IMF ASBV of that sire.

“We will know how much accuracy increases once our slaughter trials are complete and the data goes into the Sheep Genetics analysis.

“This is a great example of a project looking to speed up the rate of genetic progress for the benefit of the lamb industry using all the genetic tools that are available. In effect, with the assistance of the MDC, the Superwhites Group is helping build the reference flocks that the CRC and MLA created a decade ago,” Troy said.

About Producer Innovation Fast-Track

Producer Innovation Fast-Track is an initiative developed by MLA Donor Company (MDC) to enable producers to be actively involved in driving the innovation agenda. This program identifies the industry trailblazers and provides the support and expertise required to build their innovation capability.

An evolving pilot program, Producer Innovation Fast-Track is designed to accelerate the development and adoption of innovation and capability that have the potential to significantly improve farm and value chain performance. It provides the expertise, co-funding and support to producers who are innovators, early adopters, AgTech entrepreneurs or future value chain leaders.

Further information

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