



Validating Effects on Retail Yield by DNA Typing Muscle Genes

Local experience is validating work from NZ which indicates that Myostatin single carriers have 5% more meat in the leg and loin and 7% less fat, double carriers are twice this and Carwell carriers have 10% more muscle in the loin when compared to non carriers.

During 2006 we were approached by sheepGENOMICS to assist with commercial progeny testing of animals with known DNA markers for muscling and fatness traits.



This is a critical step in validating DNA markers before they are used by the Australian industry. It is important that the size of effect of DNA markers on commercial traits such as yield and fatness are known before they are released to industry and so that they can be incorporated into appropriate ASBV's.

We had a known mating group of 7 high muscle terminal rams which when DNA typed were found to be 4 Myostatin and 1 Carwell heterozygote single gene carriers. These were mated to 550 commercial ewes, which produced 780 lambs in spring '06 and on blood typing contained 369 Myostatin carriers and 162 Carwell carriers.

These carrier lambs were compared to non-carrier lambs to calculate the impact of each DNA marker on retail yield. **Graham Sudholz**, a specialist lamb finisher at Kotupna purchased these at 35 kg live weight lambs and entered them into his feedlot and has grown them out to slaughter weights with 3 lots totalling 468 lambs, killed at Castricums on 27/04/2007.

# lambs	dress weight	Ave yield%	% above 55.1%
91	25.2	56.2	80%
176	24.8	55.6	62%
201	25.2	56.1	71%
<i>Castricums Averages</i>		52.8	18%

The draft of 91 lambs (a subset) was sent to DPI Werribee, where DXA measurements were taken. On completion of the final kill sheepGENOMICS will have validation from ultra sound measurements, VIA Scan, DXA and what size effects are seen if an animal carries a Myostatin or Carwell gene.

Sheep Genomics

The Sheep Genomics research project based at the Falkiner Research Station in NSW is the largest sheep research project ever carried out in the world.

The 5 year project is a joint initiative of AWI and MLA who have contributed \$30 million and are being assisted by various agriculture departments and universities from Australia and NZ.

We are very excited to be a part of this project with Oaklea 69-01 being one of three rams selected for the reproduction programme and in the muscle subprogram, carcass results from more than 450 progeny, bred under commercial conditions at Cashmore Park, these lambs are known carriers of DNA markers for either Carwell or Myostatin muscling genes.

The project has 4 subprograms being muscle, parasites, wool and reproduction.

The objectives are to deliver gene markers for various traits and diagnostics, vaccines and therapeutics to best express these genes.

In unravelling the sheep genome we will have the tools to help us better increase the production of our sheep in the areas of meat quality, maternal traits, growth rates, wool and parasite resistance. We will also be able to more rapidly identify and cull sheep that carry bad genes.

It is important to note that genomics will not overtake our present performance improvement and management practices but rather be another tool for us to better improve our selection practices.

At Cashmore Park and Oaklea we have a combined data set of close to 30,000 animals with a very large genetic diversity and this will put us in a great position to embrace and make the best of new technology as it becomes available.

Feeder Lambs

Another Cashmore/Oaklea clients' draft of performance maternal wether lambs containing 40 % high fertility Poll Dorset blood, were sold by the breeder to a specialist lamb finisher, who grew them on high input ryegrass pastures to 22.7 kg carcass weight. At this weight they were 92% 2 score, 7% 3 score and 1% 4 score, indicating that they had further growth potential before laying down fat. A number of clients in the South East of SA have taken Maternal wether lambs to 25 kg and reported excellent carcasses.



Reminders

Oct 11th Thurs. Open Day at Cashmore Park
 Oct 26th Fri. Cashmore Park/Oaklea Genetics
 Annual Ram Sale – Hamilton

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