

weekender.

MELTING MOMENT

BUSINESS FEATURE

THE Gilmore family has always been known for its determination to excel. But now its Tattykeel sheep stud is taking it one step further, and reaching new and impressive heights.

The Poll Dorset and Australian Whites stud, Oberon, NSW, has launched a scientific study into its Tattykeel Australian White meat, and according to principal Graham Gilmore, even they are gobsmacked by the results.

Mr Gilmore said after his family publicly released the Australian White sheep from their Tattykeel farms in 2012, they started to notice some unique eating qualities picked up in the early crossbreeding programs in certain lines of the sheep.

"In 2016, we made the move to look for the science behind some of these qualities: in particular, the low melting point of the fat," he said.

The Gilmore family engaged a researcher to begin testing on their meat. Mr Gilmore said the University of Tasmania's Associate Professor Aduli Malau-Aduli, at the time, had 26 years' research experience studying eating qualities in sheep meat of many breeds. Testing began on commercial Australian White carcasses from the Temora area from the Sinclair and Derrick farms, who use Tattykeel bloodlines.

The lambs were tested for intramuscular fat (IMF), fat melting points (FMP) and healthy long-chain PUFA Omega-3s.

"These tests are very similar to those conducted in Aduli's time at the University of Adelaide and with the Wagyu Beef Cattle QTL Mapping Research Project at the National Institute of Livestock and Grassland Science, National Agricultural Research Organisation in Tsukuba City, Ibaraki, Japan, where Aduli had also spent two years working under the supervision of Professor Masanori Komatsu, an expert on Wagyu cattle and head of genetics, breeding and reproduction."

Mr Gilmore said in the first series of tests, Aduli found significantly lower melting points of the IMF than he had ever encountered before.

"These lambs, at 75 per cent Tattykeel Australian White or F2, had an average FMP of 37 degrees celcius. Aduli's previous experience was that lambs of other breeds



RED HOT RESULTS: Graham Sinclair with the first F2 Tattykeel Australian Whites tested with Matt Pollard from Breakout River Meats.

generally melt between 42-48 degrees celcius," he said. "Basically, the lower melting point means that you don't have that fat taste in your mouth. It means a cleaner taste, and the tenderness is also affected.

"Our pure-bred lambs' melting points are showing a range between 28 and 39 degrees, with an average of 34 degrees."

With these results in mind, Mr Gilmore said Tattykeel then made the move to start testing their stud animals.

"The test involves muscle biopsy sampling of five grams of the eye muscle from elite rams and selected ewes by a veterinarian," he said. "The testing of live animals was done to fast-track the accuracy and precision of genetic gain with actual performance figures on each animal, and allowed us to follow the tested animals through multi generations quickly.

"There is no estimation on the figures because they are actual laboratory analysis data, which takes the guesswork out of any selection index for particular traits."

Mr Gilmore said they tested only lambs raised on grass. "We believes the focus on grain feeding lambs is a negative to the

industry. As much as possible, lambs should finish on grass," he said.

Mr Gilmore said the long-chain omega-3 tests were done as wet chemistry laboratory lipid tests and GC-MS (Gas Chromatography-Mass Spectrophotometer) testing for 36 different fatty acids.

"While IMF is an important part of our testing, we consider the low fat melting point to be even more important for taste and the added health benefits from the less saturated fats," he said. "Long-chain omega-3s EPA+DHA are now averaging 33 milligrams per 100 grams of meat (30mgs is an omega source level)."

Blood samples were also taken at the same time as the biopsy and the DNA was then cross-tested using MI-SEQ Next Generation Sequencing of three key lipogenic genes (SCD, FAPB4 and FASN).

Mr Gilmore said his family was thrilled with the results. "The Tattykeel team is excited about their future generations of Australian Whites selected on these results."

■ The first of several papers on the Tattykeel Australian White genetics of omega-3 long chain polyunsaturated fatty acid



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Graham Gilmore, Tattykeel Australian Whites stud, Oberon

metabolism and meat-eating quality was published in the international peer-reviewed open access journal Genes (Impact Factor of 3.331) www.mdpi.com/2073-4425/11/5/587. The paper was compiled by a team of researchers led by Associate Professor Malau-Aduli at JCU Townsville, QLD, in conjunction with Michelle Henry, Gundagai Meat Processors and Innovation Connections.