

PO Box 1385, Griffith NSW 2680
T 02 6964 6600 F 02 6964 1605
E enquiries@nuffield.com.au W www.nuffield.com.au
A.B.N. 33 092 327 396

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“Breed for commercial yield, not the show-ring”: Nuffield Scholar

By Melissa Branagh

Kangaroo Island seedstock breeder and prime lamb producer Andrew Heinrich no longer subscribes to the Texan philosophy that ‘bigger is better’.

After scouring America to investigate how efficient use of genetics can improve carcase yield and growth rate, the Nuffield Scholar is urging Australian producers to dismiss the widely embraced correlation between size and quality, and to breed for more important traits. “The benchmark should be fast growing, early maturing rams – not necessarily the biggest,” he says.

Similarly, while the Parndana farmer’s recent Nuffield tour, sponsored by Meat & Livestock Australia, bolstered his confidence in MLA’s LAMBPLAN model, he is concerned that the prime lamb industry is placing too much emphasis on the Carcase Plus index at the expense of eating quality.

The Carcase Plus index, produced under the LAMBPLAN initiative, is based on the weight, fat and eye muscle depth Australian Sheep Breeding Values (ASBVs) at post-weaning age, with a relative emphasis on 60 per cent growth, 20 per cent fat and 20 per cent eye muscle.

The tool is designed to be used in conjunction with LAMBPLAN ASBVs for individual traits that influence lamb performance and market suitability, such as birth weight, growth rate, carcase characteristics and disease resistance.

However Mr Heinrich says too many commercial producers are buying terminal sires based solely on the Carcase Plus index.

“The Carcase Plus index favours large lean rams that are acceptable to certain lamb export markets but are not suitable for trade lamb production or burgeoning overseas markets that demand high-flavour products. If we go too lean, we will lose taste and forfeit lucrative opportunities.

“We need to focus on a balance of traits and maybe we need to look at other indexes, such as the Trade Index, for scoring that reflects this balance – the Trade Index actually downgrades scores for rams which are too lean, whereas Carcase Plus is weighted to give the leanest rams the highest scores. Seed stock producers in particular need to be careful not to chase leanness just to achieve high scores on this index.

Mr Heinrich’s reservations about the use of the market-focused index prompted the South Australian’s interest in how meat industries overseas estimate genetic value and motivated his application for a 2006 Nuffield Australia Farming Scholarship.

For information

Penny Fannin, Coretext Communications
03 9670 1168
E pfannin@coretext.com.au

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Mr Heinrich runs 5000 grown sheep on his 800-hectare property, two-thirds mated to Merino rams for wool production and one-third joined to White Suffolk rams to produce prime lambs. He also manages a closed White Suffolk stud of 300 ewes which he inherited from his father – one of Australia’s founding White Suffolk breeders.

LAMBPLAN PROVIDES RESULTS

Since Mr Heinrich turned to LAMBPLAN in 1999 to select trait leaders for artificial insemination, carcass yield has increased to almost double that of the average terminal breeder. His faith in LAMBPLAN was reinforced four years ago when the Australian White Suffolk Association received a Producer Initiated Research and Development (PIRD) grant from MLA to trial the tool on his property.

“We looked at the effects of various sire traits over 400 ewes and an analysis of the lamb carcasses confirmed LAMBPLAN is a highly accurate way to calculate the probability of achieving desired characteristics. There were significant visual improvements in some progeny,” he says.

“These developments excited me, but I didn’t want to compromise on eating quality by going too lean. The Nuffield Scholarship provided an opportunity to look at how LAMBPLAN could be used to improve yield and growth rate while maintaining flavour.”

Visits to the United States, Canada, Britain, Europe and South America revealed that overseas, LAMBPLAN is regarded as one of the pre-eminent sheepmeat industry models for estimating genetic merit.

However the beef and pork industries, which were forerunners in the use of genetic measurement, presented some valuable lessons.

“The lamb industry in particular can learn from mistakes made in the pork and beef industries. We have to stop trying to produce the biggest rams and aim to breed rams which have good early growth, and whose lambs will finish for market as quickly as possible.

“Energy and water markets are changing our production. Farmers are being asked to grow crops for energy, which will keep grain prices high. And with Australia’s water crisis, I don’t think we can afford the luxury of finishing lambs on irrigated pastures or grain. It’s just a waste of water.

“Genetic improvement increases animal growth efficiency and is critical to secure long-term profitability, but it is also a valuable way to meet rising consumer expectations in terms of premium quality – predominantly eating quality – and value for money.”

The Nuffield Scholar cited the Gardner Angus Ranch in Ashland, Kansas, as a leader in this approach.

COMMERCIAL BALANCE

“Henry Gardner started using genetic measurement to select animals for artificial insemination and embryo transplant 20 years ago, and his ranch has evolved as one of the United States’ leading studs.

“But while Gardner’s operation is huge, the livestock are not. He does not breed for the show ring – he breeds for commercial carcass yield by balancing size, birth rate and flavour traits – a methodology that produces medium-sized cows.”

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Penny Fannin, Coretext Communications
03 9670 1168
E pfannin@coretext.com.au

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Mr Heinrich observed the downside of the opposite approach in Berlin, where pushing genetics too hard has cost the Belgian Blue breed its natural capacity to reproduce effectively.

“I visited a commercial herd where the bulls couldn’t serve the cows, the cows had to be artificially inseminated and could only give birth via caesarean section, and the calves had to be bucket fed,” he says. “This is the price for an impressive visual carcass on a breed produced solely for yield and leanness, and the eating experience was very disappointing.

“By comparison, the British Longhorn – a rare suckler breed – has a low carcass yield but a distinctive flavour and the emphasis on eating quality has attracted a premium. We need to strike the balance between size, birth rate and flavour traits.”

Kangaroo Island’s first Nuffield Scholar is also adamant that Australian producers should be breeding lamb for particular markets rather than concentrating exclusively on volume.

TARGET MARKETS

“The Pig Improvement Company – an international outfit with headquarters in Tennessee – breeds superior breeding stock to maximise genetic potential and meet diverse global pork demands,” he says. “This facilitates production of marbled meat for Asia, for example, and leaner product for the European market.”

With Japan emerging as Australia’s second largest lamb export market behind the US, Mr Heinrich is keen to explore the use of LAMBPLAN to measure traits suitable for various meat products. These range from large lean carcasses preferred by Americans, to boneless product with high intra-muscular fat – a quality associated with flavour and juiciness that is valued by Japanese consumers.

“An international market-specific approach driven by a greater focus on the balance of genetic values would give Australia an edge over its major competitor – New Zealand,” Mr Heinrich says.

After visiting New Zealand in December, Mr Heinrich is excited about the potential of using molecular markers to identify desired genetic traits to improve breeding efficiency.

“Australia and New Zealand are working together a bit on this and I think it’s going to be great for stud breeders. We’re not quite there yet, but it will give us another tool to use and will give us more confidence in selecting young rams for breeding.”

Mr Heinrich says New Zealand’s lamb breeding program has focused on increasing the number of lambs weaned at the expense of other traits including carcass weight, wool quality and volume and skin quality.

“They send a lot of lambs to the EU and they’re missing out with smaller carcass. Where we aim for 22 to 24kgs, they’re getting 16kgs. They’re also getting terrible prices for their wool and virtually nothing for skins.

“The skins and wool might only be a small part of the lamb price, but they’re still important. It’s brought home to me the need to make sure these traits aren’t forgotten,” he says.

Contact: Andrew Heinrich, (08) 8559 6107, or 0427 596 108, email ellamatta@bigpond.com

A photograph of Andrew is available from www.coretext.com.au/communications/images.html.

For information

Penny Fannin, Coretext Communications
03 9670 1168
E pfannin@coretext.com.au