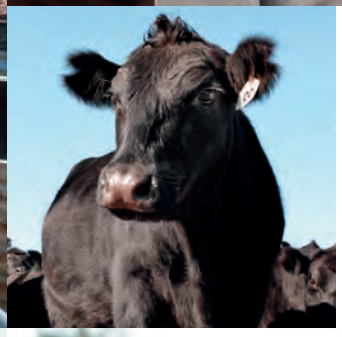
ACCELERATE

YOUR PRODUCTIVITY WITH GENETICS

SPECIAL FEATURE



Welcome to this special genetics feature. In the the coming months you'll see increased MLA communications on the value of red meat producers investing in breeding values.

Why?

For one, there's an inextricable link between genetics and profitability. Though not claimed to be a 'silver bullet', genetic improvement can help address the key drivers of profit, including improved market compliance, eating quality, fertility, reproduction and productivity.

Secondly, adoption of the use of breeding values in Australia could be higher. We tend to trust what we see. In the case of selecting a good sire, it's natural to go about this by visually appraising a bull or ram. But an important step is to look beyond appearance to also 'look under the hood'. This is what breeding values allows producers to do.

Breeding values can tell producers about the fertility of a sire's daughters, the carcase weights of his progeny and the likelihood of worm egg counts in his sons and daughters.

Of course, genetics on its own doesn't guarantee a good outcome. Ensuring good structural soundness and then providing good nutrition and management are essential.

This feature gives you a taste of why incorporating breeding values into your sire selection decision is worthwhile.

Here, we talk to commercial producers about why they've adopted breeding values and the benefits it's brought their business.

If this feature has whet your appetite, we have plenty more for you to discover at MLA's new genetics hub: **genetics.mla.com.au**

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Not using breeding values? Here's what you're missing

If you're not aggressively accelerating the performance of your herd or flock by using better breeding values, you're fighting a losing battle.

That's the message from Dr Rob Banks, Director of the Animal Genetics and Breeding Unit at the University of New England.

"It's a message no producer can afford to ignore," Rob said.

"Constant genetic improvement goes a long way to offsetting the cost–price squeeze, and complements the productivity gains available through pasture and animal management."

Many producers are tapping into the benefits of better genetics by buying bulls or rams from breeders using BREEDPLAN, LAMBPLAN or MERINOSELECT. Producers who pursue genetic progress find themselves accelerating the performance of their herds and flocks in such a way that their initial investment more than pays for itself.

"On average, the current rate of genetic progress in British breeds is just over $4 per cow joined per year," he said.

Rob said for northern Australia the rate of genetic progress for the past five years has been $1 per cow joined per year.

"The lower number in the north reflects the fact that fertility has been an important component of the index but, to date, few bull-breeding herds have had good data on it," he said.

"However, the research and industry data for fertility now becoming available underpins genomic Estimated Breeding Values, and we're seeing early signs of a lift in the rate of genetic progress. There's lots of upside potential."

But there are still some commercial producers who aren't harnessing the power of good genetic traits – even when they're widely available and identified as essential to sustained profitability.

More sires backed

Many seedstock producers have embraced genetic data.

Rob said the southern beef industry has pioneered the adoption of genetic information in Australia, with more than 70% of southern bulls offered for sale backed by breeding values data.

In the north, the numbers aren't so impressive, with around 15% of sale bulls accompanied by breeding values data.

"This probably reflects the challenges of collecting accurate pedigree and date of birth in extensive northern breeding enterprises, coupled with a general perception that genetics data doesn't have as much relevance in the environmental conditions of the north," said Rob.

"That perception is wrong.

"DNA tools are helping overcome the recording challenge. Genetics data relating to fertility in the north is now becoming available, and it reveals massive genetic ranges in lifetime weaning rate and profitability in northern breeds."

Australian Sheep Breeding Values have transformed the wool and sheepmeat industries. They have given producers the power to influence traits such as eating quality, lean meat yield, reproductive rate, growth and fibre characteristics.

Rob said 70–75% of terminal meat breed sires are offered for sale with data, and around 60% of maternal meat breed sires and 35–40% of Merino sires are sold with relevant data.

"Quite a bit of artificial insemination (AI) is being used in Merinos by enterprises large enough to breed their own rams," he said.

"Producers are increasingly using semen from breeders in the MERINOSELECT program, so the impact at a flock level means about 50% of rams used across industry have some genetic information available."

Commercial uptake

While the adoption of breeding values data in the north has been challenging, its uptake by commercial livestock producers is increasing, particularly in the southern cattle and prime lamb industries.

"Many commercial producers of temperate cattle, prime lamb and Merino breeds have got on board with breeding values over the last 10–20 years," Rob said.

"They've seen the value in not just relying on visually assessing potential sires; they've also leaned on breeding values to allow them to see into the animal's genetic makeup and make more informed decisions.

"More and more producers are seeing that sires with better breeding values produce better progeny, and that means a better-performing herd or flock."

But, there is still room for improvement.

"Just because sires are increasingly sold with breeding values doesn't mean commercial producers are necessarily using that information. And those who use breeding values can always strive to find sires with better breeding values," Rob said.

"The genetic improvement journey doesn't end – it's a never-ending good story.

"The secret is to keep moving forward. Standing still means you're actually slipping behind." ■

See over for Rob's top five tips on finding the right genetics for your breeding objectives.

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Visit MLA's new genetics hub, a one-stop-shop full of resources, case studies and tutorial videos to get started with genetics: genetics.mla.com.au

Five tips to help you take off

Dr Rob Banks, Director of the Animal Genetics and Breeding Unit at the University of New England, shares his advice to getting started with breeding values:

1. Write down a clear breeding objective but ensure a balanced approach – a focus on one trait will have implications for other traits.
2. Your breeding objective should focus on where you want to be in five years so you can pick the genetics today that will help you get there.
3. Choose an index that suits your production system to help narrow down a large number of animals into a smaller group of potential sires.
4. Spend time on your research before a sale. Remember the sire will impact your flock or herd for the next 10–20 years.
5. Select structurally sound, fertile sires with above-average index and breeding values for traits that meet your breeding objective.

Can you pick the performer?

Just as you can't judge a book by its cover, neither can you judge a bull or ram by looks alone.

When two sires look similar (they're both from the same breed, both have the same weight and both are structurally sound), how do you tell which one will produce the most fertile daughters or progeny with the best marbling?

The truth is you can't tell by looks alone.

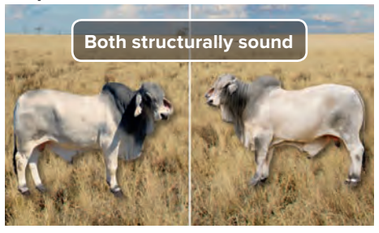
But that's why producers have access to breeding values. They allow producers to see 'under the hood' and know, with a high degree of confidence, a sire's genetics. It takes the guesswork out of picking a high-performing sire.

MLA has produced four short 'pick the performer' videos to demonstrate that looks on their own don't tell the full story. Rather, a fuller and clearer picture can be built by incorporating breeding values into ram and bull buying. ■

genetics.mla.com.au

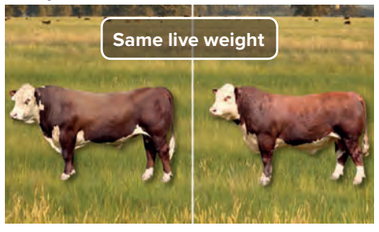
Can you pick the performer?

Tropical cattle



Prime lamb

Temperate cattle



Merino

TROPICAL CATTLE

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The basics of bull buying

Tropical Beef Technology Services' Tim Emery believes developing breeding objectives for your business is fundamental and can drive your genetic direction, productivity and profitability.

"When developing breeding objectives, it's important to have a clear understanding of how your herd is currently performing, where you want to go, what markets you're targeting and the environmental constraints at play," he said.

"Having the objectives actually written down can assist with having all those involved in the business on the same page.

"And, just because you write them down once, doesn't mean they can't change. Reviewing and refining them over time with all parties involved in the business is a key step."

Tim (pictured) recommends focusing on Estimated Breeding Values (EBVs) and understanding what they mean and how they work.

"EBVs are a free tool, they're available for anyone to use and they can assist producers make an informed, objective decision about their future genetic direction," he said.

"They shouldn't be used in isolation, but instead in conjunction with fertility, structural soundness and temperament."

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To help northern beef producers fine-tune their approach to buying new genetics and the bull buying process, Tim suggests:

1. Developing breeding objectives and knowing what traits are important for your own operation.
2. Determine the selection index and individual EBVs of most relevance to you. This involves knowing exactly what you want to use the bulls for, e.g. using over heifers or cows, terminal use, producing replacement females or producing progeny for a target market.
3. Do your homework. Most of the genetics planning should take place in the office. Use the BREEDPLAN website to sort available options based on selection index and individual EBVs relevant to your business.
4. The reproductive performance of dams can be investigated, along with genetic conditions in some instances.
5. Talk at length with seedstock producers and obtain data prior to the sale – ask about their breeding objectives and joining window, seek BULLCHECK certificates and ask about their vaccination, biosecurity and feeding programs.
6. Go to the sale with a list of bulls you are confident in (based on EBVs and BULLCHECK certificates) and then spend the majority of your time assessing temperament and structure. Put a line through those that aren't suitable. ■

GENETICS

The genetic pay off

Imagine if someone told you they were able to lift their weaning rates by more than one-third, reduce breeder mortality to 0.5% and improve turn-off weights by 15%.

That's exactly what Russell and Donna Lethbridge have done.

And to further prove it's not just theory, the couple's Werrington Cattle Company operates in a harsh environment where any system is put to the test.

The herd operates at 20% above the district average for reproduction efficiency and its weaning rate is 25% above the industry average for northern Queensland.

The Lethbridges attribute the improved performance of their enterprise to:

- investing in sires with above-average traits for reproduction from a performance-recorded herd with similar breeding objectives
- applying selection pressure on the breeder herd for reproductive performance.

Russell (pictured) said, in their region, breeder mortality rates are typically high and reproduction rates are low. This is a result of native pasture nutrition levels below that required for animal maintenance for up to nine months each year.

The couple have proven that:

- selecting for fertility is indirectly selecting for adaptability and 'doing' ability
- removing non-performing females (for reproduction) improves entire herd performance
- weaning rates can be lifted (in their case from 45% to 72%)
- breeder mortality can be reduced to 0.5%.

Breeding objectives

Where did they start? The first step was to identify a breeding objective – they wanted an early-maturing, highly fertile Brahman herd whose progeny would comply with a broad range of markets.

Their approach was simple – select for reproduction and the rest will follow.

"I breed to produce a marketable animal – one that is fleshy and early maturing, will put muscle on bones at any time after 12 months and will lay down fat before it's three years old," Russell said.

To achieve this, Donna and Russell cull non-productive females and only buy bulls with above-average BREEDPLAN 'days to calving' values and whose dams are proven reproductive performers.

"The reliability of the mother is very important," Russell said.

"If she's had nine calves in 10 years, it's her genetics I want."

All females are pregnancy tested after a four-month controlled-mating period, and all empties become part of the cull-cow income stream.

Heifers, on the other hand, face their biggest fertility challenge first up – a 10-week joining.

However, pregnancy test results are regularly above 90%, a vast improvement on the 40–50% rate the Lethbridges accepted 25 years ago.

"Where it really pays off is with the first-calvers," Russell said.

"We know we can successfully rejoin about 75% on no rain and in challenging conditions."

This approach means the 3,000 head breeding herd is young, with about one-third of the annual calf drop out of maiden heifers.

Recent benchmarking has shown these young heifers hold their own.

Choosing the right bulls

"When they are selecting bulls, I think people are too obsessed with growth traits and don't pay enough attention to fertility indicators such as moderate frame size, days to calving, calving ease and scrotal circumference," Russell said.

"Our most progressive move was finding a seedstock producer who had the same commercial trait objectives as us. Clearly, making the demands on our females was only improving us so far."

Russell does not consider growth traits directly when buying bulls, but has found that selection using breeding values and indexes has helped improve carcase weights (taking them to 220–240kg carcase weight).

He believes improved female reproduction also translates to improved adaptation to the environment, with their breeder mortality rate having fallen from 5% to 0.5% over 25 years. ■

More information

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Watch Russell tell the story of genetic progress in his herd
genetics.mla.com.au/tropical

SNAPSHOT:

Russell and Donna Lethbridge,
'Werrington', Townsville and 'Rainmore', Alpha, Queensland

Area:
Werrington 19,500ha;
Rainmore 27,500ha

Enterprise:
Brahman steers for the Japanese feeder market and heifers for the domestic feeder market

Livestock:
Werrington – 3,000 adult equivalent (AE); Rainmore – 4,500 AE; up to 10,000 depending on agistment availability

Pasture:
Werrington – natives, stylos, open forest; Rainmore – buffel, stylos, natives

Soil:
Werrington – light alluvial to heavy clay, light granite; Rainmore – heavy brigalow scrub, red loamy soil, lighter eucalypt country

Rainfall:
Werrington – 700mm;
Rainmore – 525mm

TEMPERATE CATTLE

Selection in the south

Be clear on what drives profit in your business and match your bull selection to those profit drivers.

According to MLA's Genetics Program Manager Hamish Chandler, this should underpin how every producer uses genetic selection tools such as Estimated Breeding Values (EBVs) and indexes.

"What drives profitability in your business should be naturally linked to your breeding objective," he said.

"Traditionally, producers consider a whole range of traits and attributes when buying bulls, but we need to make sure those attributes clearly relate back to what producers want to achieve in their business.

"It's important we join the dots between what we want to improve and what traits we need when selecting replacement bulls."

Hamish said EBVs are an essential part of the selection process.

"There are things, other than the genes a bull carries, that influence what he looks like on sale day," he said.

"Breeding values are important because we can rank bulls on their genetic attributes rather than on how good a season they have had."

Hamish said in southern production systems, where good reproduction rates are generally achieved, producers should consider other profit drivers.

"If you're selling lighter-weight calves to restockers, fast early growth and moderate cow size will be considerations, whereas suppliers to feedlots and the Japanese ox market will require more emphasis on eating quality traits such as intramuscular fat," he said.

Before attending a bull sale, Hamish recommends looking at breeding values and indexes first, and then assessing bulls that fit the criteria for structure and other attributes at the sale.

"Indexes are useful for ranking bulls in terms of value in achieving a breeding objective," he said.

"If you have several candidates of similar index value, then you need to consider individual breeding values – such as birth weight, scrotal circumference and intramuscular fat – and weigh up their worth to you, as well as considering other traits not in the index such as structure and temperament." ■

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It's second nature

Andrew Carruthers can't remember a time when he didn't use genetic selection tools in his business.

"Dad was a seedstock producer, so appreciating the value of genetic selection, and using industry tools such as BREEDPLAN and Australian Sheep Breeding Values (ASBVs) to improve production, have always been the way we've worked," he said.

"Use of genetic selection tools combined with good management has seen us lift our flock and herd performance in terms of kilograms per hectare.

"Our breeding program is a balancing act between production goals and longevity, and we use genetic selection and visual appraisal to try and stay on what we think is the right path."

Andrew (pictured) and his wife Sarah run 2,632ha from Wollomombi to Baldersleigh in NSW and focus on breeding Angus feeder steers for Jack's Creek Feedlot, Wagyu females for Japan's live cattle market and lambs for the domestic market.

The Carruthers are focused on customer satisfaction, and genetic selection decisions are market-driven, tempered by the need for structurally sound, productive animals that have longevity.

Sheep selection

"In our composite, self-replacing sheep flock, our main concern is twinning. We want ewes that will produce twins as many times as possible, so phenotype – what the ewe *looks* like – is really important," Andrew said.

Rams are always selected on breeding values and phenotype.

"Fertility and positive fat are important," Andrew said.

"We want high-performance mothers that turn off lambs inside four months, and that have good milk and udder structure.

"It snows here and can get down to minus 15 degrees in winter so selecting rams with positive ASBVs for fat helps our ewes to lay down fat. It's like carrying a lunch box with them during winter."

Selecting strictly for these traits for the past four years has seen the number of lambs weaned increase by more than 30%.

More recently, the focus has spread to moderating mature ewe weight.

"At 16 months old, our ewes are 75kg with 35kg twins on them, " he said.

Cattle tactics

Their approach to Angus breeding is equally measured.

"Again, the first thing I look at is phenotype; a breeder needs to look good, have a good udder and be structurally sound so that when our calves go into feedlots for 300–400 days, they're structurally sound as well," Andrew said.

A moderate parental birth weight is non-negotiable. "It's directly related to live calves," Andrew said.

"I won't buy a bull over a birth weight Estimated Breeding Value (EBV) of +5.5kg.

"Even if you join, for example, a bull with a birth weight EBV of +7kg, that heavier birth weight can still be expressed through the heifers, and that's something we want to avoid."

To ensure herd efficiency, Andrew has strict parameters on cow size.

"We want a moderate cow size; we won't go over a mature cow weight EBV of +110kg, which is sometimes hard to balance with growth rates," he said.

"Larger cows are more expensive to run.

"We keep an eye on milk; it must be above breed average, then we look at what the client wants, which is good 400 and 600-day weights and marbling for eating quality."

Andrew won't go below 2 on IMF (intramuscular fat; the EBV for marbling).

"We work closely with customers and end users. They're open in telling us what they need," he said.

"For example, the Japanese market wants a 500kg carcase with as much marbling as possible so, in terms of EBVs, that's 400 and 600 days and IMF.

"In selecting on all these traits, we've seen our end product over the past four years go up one whole AUS-MEAT score (for marbling) across the Angus program.

"In our F1 beef program, we've been able to increase and maintain weaning weights, improve our heifer conception to 92%, keep our cow conceptions over 90% and use our bulls at a ratio of 1:70." ■

More information

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Watch Andrew tell the story of genetic progress in his herd

genetics.mla.com.au/temperate

SNAPSHOT:

Andrew and Sarah Carruthers, New England, NSW

Area:
2,632ha (across four properties from Wollomombi to Baldersleigh)

Enterprise:
Angus beef for domestic market, F1 Wagyu for livestock exports to Japan, Lambpro prime lambs for domestic trade

Livestock:
1,000 Angus breeders; 50 F1 Wagyu breeders; 2,000 Lambpro ewes

Pasture:
Natives and improved, ryegrass, fescues, clovers

Soil:
Fine granite, trap and basalt

Rainfall:
850–1,000mm

A prime lamb breeding plan

Having a clear picture of a breeding objective should be every prime lamb producer's priority before investing in new genetics.

According to MLA Sheep Genetics Senior Development Officer Peta Bradley, a breeding objective will help producers identify traits, expressed as Australian Sheep Breeding Values (ASBVs), to improve profitability and/or reduce costs of production.

"Before you turn up to a ram sale, it's really important to know your breeding objective and which traits will drive profit (e.g. weaning weight and eye muscle depth) and which traits are costs in your production system (e.g. worm egg count)," she said.

"Other important ASBVs that prime lamb producers may wish to select on or monitor when purchasing a sire may include birth weight and eating quality traits such as intramuscular fat and shear force.

"These traits give producers the ability to make more informed decisions when investing in improving genetics."

Peta said while genetic merit should be the first criteria on which rams are selected, physical appearance and structural soundness are also important elements for breeding success.

"Rams need to be structurally sound and suit your environment," she said. ■

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The 2018 Pocket Guide to ASBVs: sheepgenetics.org.au/Resources/Brochures-and-fact-sheets

genetics.mla.com.au/prime-lambs

Genetics drive business growth

Victorian prime lamb producers Philip and Maz Gough have transformed their business using genetic selection tools and harnessing the benefits of hybrid vigour.

The business has evolved from running five different enterprises in the 1990s to, today, focusing on producing prime lambs for the supermarket trade and using their knowledge of genetics and best practice farm management to achieve their goals.

"Our interest in lamb started in 1995 when we began selling lambs finished on summer crops," Philip said.

"We became more interested when we realised the potential to fast-track our productivity improvement through genetic selection."

Philip set about breeding a ewe that could wean 150% of lambs annually to suit the supermarket trade (fat score 3, 18–24kg carcase weight) at 130 days of age.

To do this, some production goals were set that would improve their viability:

- maintaining hybrid vigour
- lifting kilograms of lamb produced/hectare from under 300 to more than 400
- improving wool cuts from 4kg to above 5kg/head
- making as much money from as few animals as possible to achieve labour efficiencies
- producing efficient, environmentally fit animals.

From this, a crossbreeding program, based on Corriedale and Coopworth, was born that utilised the LAMBPLAN database to select high genetic merit animals on breeding values that the family could manage easily.

"We felt these breeds complemented each other but differed enough to deliver a good dose of hybrid vigour," Philip said.

Other management strategies Philip put in place to support the genetic selection decisions include:

- using LAMBPLAN data on rams to aggressively select for high fertility in maternal ewes
- selecting rams on their breed purity for hybrid vigour maximisation
- only breeding self-replacers from ewes that were conceived as a multiple and produce multiple conceptions each year
- tagging ewes which need assistance during lambing, for future culling
- pregnancy scanning to measure losses and to segregate ewes carrying singles, twins and triplets for lambing
- vaccinating for campylobacter
- reducing paddock and mob sizes.

In the past 10 years, Philip has seen his lambing percentage per ewes joined climb from 127 to 154 – the goal was an average of 150. The amount of lamb produced per hectare has also jumped, from 363 to 440kg.

Since he started selecting on ASBVs for high early growth rates, coupled with better flock management, Philip has also achieved higher lamb weaning weights. ■

SNAPSHOT:

Philip and Maz Gough,
Hotspur and Branxholme, Victoria

Area:
1,100ha

Enterprise:
Prime lambs – targeting supermarket trade 18–26kg and fat score 3

Livestock:
5,400 crossbred ewes (self-replacing flock)

Pasture:
Perennial ryegrass, sub-clover, summer forage brassica

Soil:
Hotspur (light sandy loams)
Branxholme (heavy clay loams)

Rainfall:
700–800mm

More information

sheepgenetics.org.au/LAMBPLAN

Watch Philip tell the story of genetic progress in his flock

genetics.mla.com.au/prime-lambs

MERINOS

Tools aplenty for Merinos

Merino producers have more help than ever to lift profitability of their flock, while improving animal health and welfare outcomes.

MLA Sheep Genetics Senior Development Officer Peta Bradley said Australian Sheep Breeding Values (ASBVs) allow producers to simultaneously select for key production traits such as fleece weight, carcase characteristics and number of lambs weaned, while putting pressure on breech cover and/or breech wrinkle and other health traits such as worm egg count.

"It's important that commercial ram buyers identify seedstock breeders who are recording in MERINOSELECT and selecting for traits they have identified in their breeding objective," she said.

Peta said there are industry indexes in MERINOSELECT that commercial breeders can use to make a balanced selection of animals. It is important that commercial producers use the index that best suits their production system.

"An index combines many traits and helps breeders rank animals so they can draft out the top picks. These top picks can then be researched further by looking at individual ASBVs and by visual appraisal on sale day," Peta said.

"The benefits of buying rams of higher genetic merit is multiplied at each joining in a self-replacing flock, as the daughters of rams with high genetic merit are retained and bred from in the flock, compounding the benefit over time." ■

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On the trait track

Victorian sheep and wool producer Ricky Luhrs has come a long way in eight years.

From new kid on the block in the family business to progressive producer embracing genetic technologies and best practice, Ricky's inquiring mind has driven gains in flock performance and profit.

Early on Ricky, who runs the property with his father, Russell, focused on how to cope with challenging seasons, particularly poor springs and late breaks, and how to improve lamb weaning percentages.

"Our approach has been a mixture of improved genetic selection and adopting management strategies to better utilise pasture and preserve ground cover," he said.

"Containment feeding of all our sheep during late summer–autumn each year helps preserve pasture and build a winter feed wedge for lambing.

"The challenge is early assessment of the stock we want to carry over, and having enough supplementary feed and cash flow to get through the containment feeding period to ensure ewes are kept in good condition from joining right through."

Genetics have also played a significant role, enabling Ricky to increase lambing percentages, lamb growth, and carcase and fleece weights.

"By selecting rams based on Australian Sheep Breeding Values (ASBVs), we've worked on getting more fat and muscle into our ewes so they have more of a fuel tank on their back for tough times which has, in turn, helped lamb survival," Ricky said.

Today, their operation is focused on improving their rate of genetic gain, particularly in traits for early growth (YWT* and PWT*), fat and muscle (PFAT* and PEMD*), fleece weight (YCFW*) and plain bodies (YSL* working with YCFW* – to prevent mulesing and working towards six-month shearing).

This, combined with improved breeder and ram management, has catapulted their operation into becoming more efficient, profitable and sustainable.

"Genetic selection is an important tool, but it is one of many on the farm," Ricky said.

"The important management strategies that help us make the most of our flock's genetic potential are early weaning, condition scoring ewes at weaning to ensure they get back up to target weights, pregnancy testing, foetal ageing, good nutritional management of twins and singles, not shearing within six weeks of joining and good ram nutrition."

Ricky first learnt about genetics and sire selection through Australian Wool Innovation's Lifetime Ewe Management and MLA's Bred Well Fed Well programs, and by attending a Best Wool Best Lamb conference.

"I really enjoyed the learning curve," he said.

"It was a great way of combining my youthful enthusiasm for wanting results with Dad's (Russell Luhrs') knowledge and passion for Merino sheep. We had the same breeding objectives so it worked well."

Ricky said interpreting ASBVs in a sale catalogue was easy, but he found it more challenging to understand the balance and heritability of traits "so you don't end up single-trait heavy."

To convince themselves that buying rams with ASBVs improved their flock, father and son set about designing their own on-farm trial.

"We bought rams from performance-recorded studs, new to us but high on our radar for traits we wanted, and measured raw data on all the progeny from the different bloodline groups," Ricky said.

"We measured early growth (marking to weaning), fleece weight at first full-fleece shearing and the percentage that joined as ewe lambs."

The new bloodlines, selected using ASBVs, outshone their traditional bloodlines in average growth rate, marking weight, weaning weight, fleece weight and lamb survival. ■

**YWT – yearling weight; PWT – post-weaning weight; PFAT – post-weaning fat depth (mm); PEMD – post-weaning eye muscle depth (mm); YCFW – yearling clean fleece weight; YSL – yearling staple length.*

SNAPSHOT:

Ricky Luhrs,
Cavendish, Victoria

Area:
1,000ha

Enterprise:
Wool and prime lamb production

Livestock:
5,500 18.5 micron Merino ewes (3,000 joined to Merinos, remainder joined to terminal sires). Joining 500–800 yearling ewes each year.

Pasture:
Ryegrass and clover

Soil:
Clay and sandy loam

Rainfall:
500–550mm

More information

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Watch Ricky tell the story of genetic progress in his flock

genetics.mla.com.au/merino

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Not convinced about breeding values? Producers respond

Before breeding values came along, producers had no choice but to pick sires purely on the basis of visual appraisal and gut instinct. The art of judging 'a good sire' was generationally passed on with an emphasis on staying true to tradition.

Today, with scientific advances in genetics and genomics, producers can 'see under the hood' and select sires that fit the bill phenotypically, but also deliver profit-driving traits such as growth, fertility and calving and lambing ease.

Here's how some of Australia's leading commercial producers respond to commonly cited statements about genetic selection.

I'm not convinced that using breeding values will ultimately deliver me a net financial return.

"The most obvious payback is being able to control important variables. For example, birth weight is directly related to live calves, 400 and 600-day growth figures are directly related to kilograms out the gate. Explain to me how that's not a payback. Those are two major production gauges without taking into account fertility and calving ease." Andrew Carruthers, beef and prime lamb producer, NSW

I've been buying rams/bulls for years. I know what a good ram/bull looks like.

"Phenotypically you might, but you don't know what's under the hood. Estimated Breeding Values (EBVs), Australian Sheep Breeding Values (ASBVs) and genomics – all this data takes out risk and variability." Andrew Carruthers, beef and prime lamb producer, NSW

"What a good ram looks like is completely different to how he breeds. For example, it's impossible to know how his daughters milk, or how the birth weights of his progeny compare to the next ram. Personally, over the years, we've made huge gains in lambing percentage to ewes joined. Without a selection program such as LAMBPLAN, that would be impossible on such a lowly heritable trait. Rams that I like are the ones that make the most money for the least amount of work, and LAMBPLAN identifies these for me." Philip Gough, prime lamb producer, Victoria

"That's good. ASBVs are just another tool in the kit. You still need to know what a good ram is on the outside but do you know how he'll perform on the inside and what (traits) he will pass on to his lambs?" Ricky Luhrs, Merino sheep producer, Victoria

I don't understand breeding values and BREEDPLAN/ LAMBPLAN/MERINOSELECT. It's just complex language designed for studs and scientists.

"We're absolutely certain this selection system works and, given that we operate in a sector where often we have little control over outcomes, it's important to capitalise on the areas that we can control. My recommendation to producers that currently don't understand, and who want to get the best genetics affordable to them, is to educate themselves, find someone who is familiar with the information or follow industry guides." Philip Gough, prime lamb producer, Victoria

Most studs don't sell sires that have breeding values and they tell me it's just for academics who don't know cattle.

"It's my belief that seedstock producers who haven't adopted ASBVs to date have a limited time left in the industry. As with the dairy, southern beef, pig and poultry industries, the big players all come from a common standpoint of implementing and using objective measurement." Philip Gough, prime lamb producer, Victoria

There's no value in genetics; or it takes too long to see a return.

"Once you have introduced superior genetics they don't just disappear, the benefit compounds, like interest." Philip Gough, prime lamb producer, Victoria

Putting together the shopping list

Before attending a ram or bull sale, producers can follow this simple checklist:

- ☐ Identify the traits and corresponding ASBVs and EBVs that are important to your breeding objective.
- ☐ Find the breeding index that best suits this goal.
- ☐ Do your homework. This includes ranking animals on your index of choice; then, of the top animals, look at the individual ASBVs and EBVs with the percentile table to identify where animals are ranked for individual traits compared to all other rams or bulls.
- ☐ Take this shortlist to the sale and do a visual assessment on the shortlisted animals for structural and physical attributes.

MLA's genetics hub contains videos on how to shop for a high-performing sire.

Visit genetics.mla.com.au, choose your livestock type then scroll to 'How do I get started with genetics'.

Check out MLA's new genetics hub

MLA has launched a new website, genetics.mla.com.au, to help commercial cattle and sheep producers grow their understanding of how breeding values can benefit livestock businesses.

MLA's National Adoption Manager Genetics Clara Bradford said MLA identified the gap in resources for commercial producers as a limiting factor to the adoption of genetic selection tools.

"This new site offers a ground-floor introduction to the benefits of genetics, showcasing on-farm case studies of producers using breeding values in their businesses to improve productivity and profitability," she said.

"Genetics has the reputation of being complicated and difficult. This site takes the mystery out of genetics and takes producers back to basics, talking them through the value of using genetics and how to use breeding values."

The site contains four main sections: tropical cattle, temperate cattle, Merinos and prime lambs.

"Producers can quickly get their hands on the resources that are relevant to their own herds and flocks; they don't have to wade through irrelevant information," Clara said.

"The site takes producers on a step-by-step journey in understanding genetics and using genetic selection tools such as BREEDPLAN and Australian Sheep Breeding Values (ASBVs)," she said.

"Producers need less than seven minutes to learn more about improving genetic progress with one of the 10 introductory sheep and beef videos that are featured on this unique site – the first central resource of its kind for the industry."

"We're really excited about the videos. We have another series of videos to launch after this and we'll keep adding to the library as the site progresses," she said.

Some of the topics in the videos include:

- What is an ASBV or EBV (Estimated Breeding Value)?
- What is a breeding objective?
- What is an index?
- How to shop for a high-performing sire (rams and bulls)
- How to navigate BREEDPLAN and Sheep Genetics websites to search for sires.

Clara said genetics.mla.com.au also includes links to other valuable online resources such as BREEDPLAN, MERINOSELECT, LAMBPLAN, Southern Beef Technology Services, Tropical Beef Technology Services and Sheep Genetics websites.

The site also provides information on other useful resources and courses such as Breeding EDGE and Bred Well Fed Well workshops.

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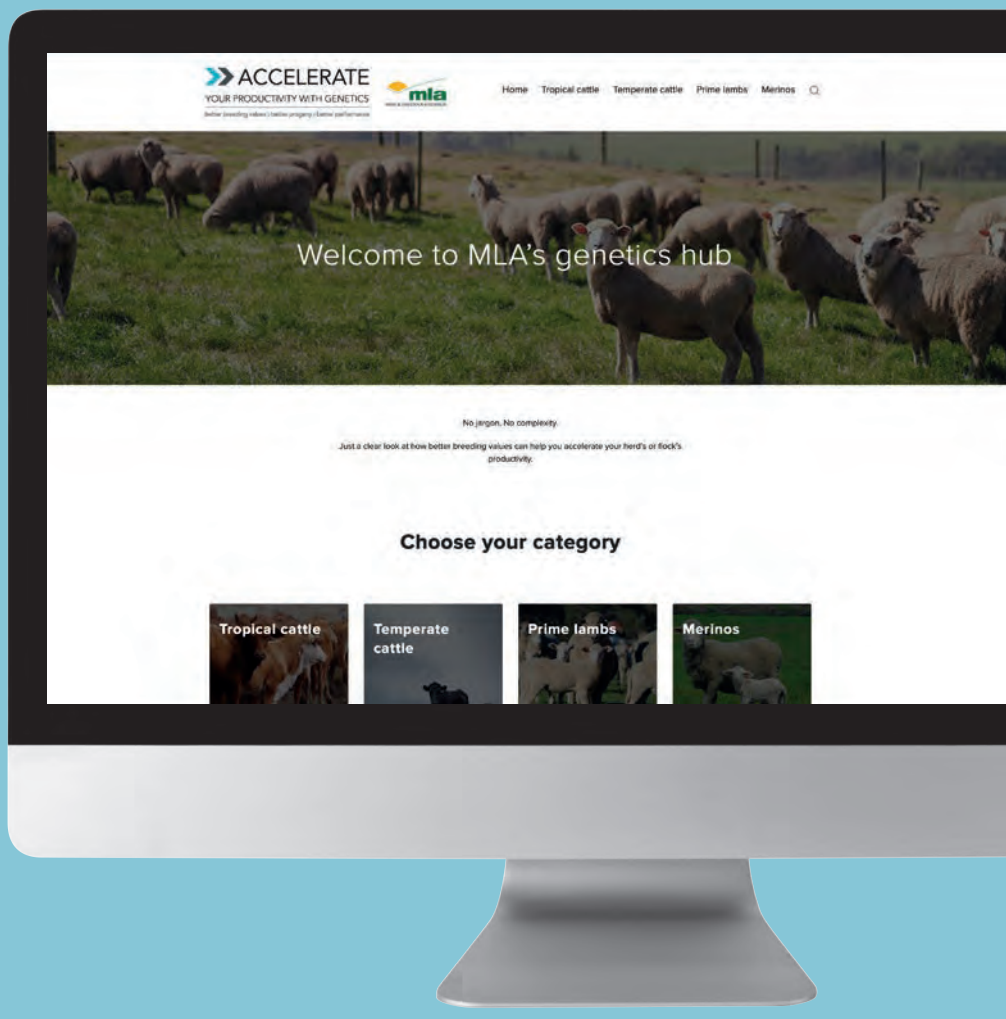

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