

GENETICS FOR PROFIT



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Welcome to the first of our “Genetics for Profit” updates for farmers. As the first, we felt it would be useful to focus on the broad principles behind applying genetics to a farm business.

I'm Mark Young, Senior Geneticist with Beef + Lamb New Zealand Genetics (B+LNZ Genetics). Our team's goal couldn't be much more straightforward – it's to help you make animals better profit generators. Hence Genetics for Profit.

For anything to be more profitable, it also has to be more ‘do-able’. Although the underlying science of genetics can be complex, we want to make applying genetics principles on-farm for non stud-breeders as straightforward as possible. We will have achieved a big part of our goal if we encourage you to pause, think and question.

A QUESTION

The first practical step is to think about your animals' potential relative to every aspect of your farm's development.

We find it is useful to begin with a startlingly simple question: Has my breeding strategy kept pace with the broader changes in my farm management?

It can then be useful to ask:

1. Do I want more from my animals' performance, and what areas in particular?
2. When did I last make a significant decision to change the genetic merit of my herd or flock?
3. Did that decision reflect or complement changes to my broader farm management strategy?
4. Are other external developments affecting what I need to achieve from my animals?
5. In light of the above, have I developed a breeding strategy with my current ram or bull breeder?

Few farmers can ask themselves all these questions and say, “sorted!” Apart from anything else, there's seldom a finite end-point to the game of genetic gain. Below are what we believe to be the four foundation ‘genetic cornerstones’ for farmers.



INTRODUCING THE FOUR GENETIC CORNERSTONES



CORNERSTONE 1
Focus on heritable performance



CORNERSTONE 2
Work with a breeder who uses SIL or Breedplan



CORNERSTONE 3
Align breeding values to your farm management and goals



CORNERSTONE 4
Achieve and monitor ongoing genetic gain



Let me take you through the first cornerstone. We will cover the other cornerstones in subsequent Genetics for Profit updates. If you want to know more now, you will find full explanations on all four cornerstones at www.blznzgenetics.com

CORNERSTONE 1

FOCUS ON HERITABLE PERFORMANCE

Non-genetic factors have a bad habit of skewing decision-making away from the most important factor in ram or bull selection – the potential of offspring. A highly rated ram for genetic potential for lambing percentage, for example, might have been born a single. Or an animal highly rated for growth might have had a slow start as a triplet. Or, a bull could have great genes yet its productivity is permanently compromised by adverse events early in life. Favourable rearing and feeding can inflate an animal's own performance but won't affect its progeny's potential. These are all non-genetic biases and we need to be very wary of them!

Non-genetic effects also vary between farms, between years and between animals within a flock within a year. When estimating genetic potential we need to see past non-genetic effects as much as possible – hence the importance of breeding values (BV).

OUR THREE TOP TIPS:

1. Buy rams or bulls based on the best estimates of the potential of their offspring using breeding values (BVs). You may have to assess some traits yourself where there isn't an BV, e.g. structural soundness.
2. Check that the genetic evaluations behind the BVs are based on all relevant and available information (across flock evaluation carries more power than simple within flock evaluation, for example).
3. Be aware that the biggest animal on offer may not carry the best genes for growth. He may, for example, be the offspring of a mature mother with plenty of milk, born early in the season that experienced less disease challenge than other animals.

B+LNZ GENETICS NEWS Visit www.blznzgenetics.com to read stories in full.

Putting a dollar value on quality beef genetics

A dairy-beef progeny test has been launched by B+LNZ Genetics to put a dollar value against what good beef genetics can add to the dairy-beef supply chain. At its core, the four-year test will calculate the additional value that can be added by using high-genetic-merit beef bulls, versus the unrecorded bulls traditionally used as “follow-on bulls” in most New Zealand dairy systems. What are the financial advantages for the dairy farmer, calf rearer and beef finisher?

New role encourages home-grown talent

Dr Phillip Wilcox has been appointed as B+LNZ Genetics' inaugural senior lecturer in quantitative genetics at the University of Otago. Dr Wilcox's main focus in the B+LNZ Genetics funded role will be establishing a two-year Master of Applied Sciences in Quantitative Genetics at the university. Quantitative genetics is central to most of B+LNZ Genetics research activities and underpins its world-leading sheep genetics system, SIL.

Meet B+LNZ Genetics' extension managers

B+LNZ Genetics has appointed Dr Annie O'Connell as its first South Island Genetics Extension Officer. Annie most recently worked for Blue River Dairy as its farm operations manager. She started her career at AgResearch as a technician progressing to scientist in reproductive physiology and sheep genetics.

Her PhD looked at embryo survival in prolific ewes. Annie has considerable experience in performance data systems and communicating with farmers. Based in Dunedin, her role will focus on helping commercial farmers and breeders apply genetics to their business objectives. Max Tweedie has been appointed as the North Island Genetics Extension Officer. He joins the team in November and will be based in Hastings.

Beef progeny test aims for even playing field

The Beef Progeny Test compares bulls under New Zealand commercial farming conditions on five large properties. It involves more than 50 AI bulls, 50 follow-up bulls, 1600 cows and 600 heifers. The test is a first for New Zealand because we have traditionally piggy-backed on Australian beef breeding assessments. Ultimately, the test will determine how bulls of different types perform under local commercial conditions. The test is a partnership between B+LNZ Genetics, participating herds (Focus Genetics, Whangara Farms, Mendip Hills, Caberfeidh, Tautane Station) and meat processors.

Data Drives Dollars

B+LNZ Genetics is adding its weight to a joint project between Massey University and Focus Genetics. “Data Drives Dollars” aims to understand the relative advantage of buying

rams with high genetic merit in terms of performance and financial returns. The project is being run at two properties; Simon Wilson's Mt Herbert Station in Waipukurau and Taratahi's Glenside Station in Gladstone. There are working groups with 25 farmers associated with each property.

2015 Sheep Breeder Forum drills into the detail

The annual B+LNZ Genetics Sheep Breeder forum provides an opportunity for sheep breeders to spend time together, exchange ideas and discuss common goals. About 100 breeders attended the 2015 forum on 23 and 24 July in Napier. It was a chance for ram breeders to talk directly with B+LNZ Genetics and researchers working on sheep genetics projects relevant to their own breeding programmes.

Beef Expo underlines increasing NZ-focused research

Beef breeders attending the recent Beef Expo reported they were pleased to see the increasing focus on New Zealand-centric beef breeding research. The feedback came during a B+LNZ Genetics breakfast at the Beef Expo in Feilding in May. The breakfast was to bring breeders up-to-speed with B+LNZ Genetics' activity since launching last year, and to discuss planned activity.

MEET THE B+LNZ GENETICS TEAM



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CASE STUDY

Colin Campbell
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I've had an unusual path to sheep breeding, which means I've had very few preconceptions!

On the way to farming one of my jobs was to help launch SIL. This meant that when I began stud breeding I knew there was a valuable ‘truth broker’ at our disposal. The value of our on-farm decisions could be measured directly by the results on SIL, and we could tell the difference between genetic-based and non genetic-based gain.

Visit www.blznzgenetics.com to read more about Colin's opinions on the value of objective information, including how he works with Peter Tod to balance genotype and phenotype evaluation.

Pictured: Peter Tod (left) and Colin Campbell