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New Zealand

DNA-marker assisted management: Putting results into practice

GeneSTAR® MVP™s (Molecular Value Predictions) offer producers new insight into the genetic makeup of key animals in their herd so more precise selection decisions can be made for traits of economic importance. GeneSTAR MVPs now utilise a 56-marker panel to predict the genetic potential of an individual animal for feed efficiency, marbling and tenderness with an associated reliability value.

Results into action

"In today's economic environment having as much useful information as possible to make well-informed breeding decisions is crucial for success," says Sharl Liebergreen, regional manager – technical services with Pfizer Animal Genetics. "GeneSTAR MVPs provide an additional tool that complements the genetic selection tools already in use. To adequately implement DNA-marker technology results, it's imperative producers fully understand the information MVPs provide so they can apply results."

Implementing marker-assisted selection

MVPs allow producers to make selection decisions when the animal is very young on traits that are difficult or costly to measure, or that can only be collected much later in life. Producers can make better-informed decisions at

all levels of the beef supply chain using a combination of existing selection tools, management information and GeneSTAR MVPs. For example, MVPs can help identify which young bulls are suitable for progeny testing, and which heifers to keep as replacements when all other factors appear to be equal.

Selection further along the supply chain

Increasingly, the MVP technology will enhance profitability in the backgrounding and feedlot phases of production. The MVP for tenderness will allow producers to participate in a branded programme that uses tenderness as a selling point. The MVP can be part of selection criteria used early in the animal's life to determine if it will fit the branded programme guidelines. While still early, Pfizer Animal Genetics R & D is clearly focused on delivering the right products right to the consumer.

Committed to MVP results

"We're committed to help producers make sense of and fully implement GeneSTAR MVP results derived through marker-assisted technologies," adds Liebergreen. "This is a great opportunity for producers to make decisions regarding the grouping of animals according to management needs or the selection of genetically superior animals to serve as parents for the next generation."

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From the Expert

DR RONNIE GREEN
PFIZER ANIMAL GENETICS



How can I best utilise GeneSTAR MVP results in designing and improving the management of my herd?

GeneSTAR MVPs provide more information about individual animals, and more information means greater opportunity to enhance genetic progress. MVPs can help make decisions when all other selection criteria are equal, or when little information is available. For example, animals can be tested at a very young age for marbling and tenderness to determine if they qualify for a branded programme.

DNAdvocate: Gene marker's exciting prospect for Meadowslea

DNA markers will offer the next revolution of genetic improvement at Meadowslea, and owner David Giddings is excited about the potential the technology can unlock. Meadowslea is home to 1300 recorded ewes—700 Romneys, 500 Kelso Rangers and 100 Kelso Maternals—as well as 300 stud Angus cows. Meadowslea annually hosts two bull sales and two ram sales.

Meadowslea prides itself on being at the forefront of genetic improvement by utilising available technologies.

Flock decisions with MyoMAX

While the cattle technology is still in its infancy for the Angus herd, Giddings has no doubt about the value of MyoMAX® in his sheep flock. MyoMAX is a genetic test for a gene that influences carcass weight and yield on the leg and rump of an animal.

MyoMAX test results identify animals with increased dressing percentage and reduced fat. A lamb with one copy of the MyoMAX gene will have five percent more muscle in

the leg and loin and seven percent less carcass fat. An animal with two copies of the gene—denoted as MyoMAX^{GOLD}® in the test results—will have up to 10 percent more muscling and 14 percent less carcass fat.

Infusing the MyoMAX gene into Meadowslea's Romney base has enabled a quantum leap in producing rams that will help his clients reap the benefits of yield grade payments.

"Since using MyoMAX^{GOLD} rams we have seen more meat across the whole line of lambs, but they retain the important maternal traits we have bred into the Romneys for many years," shares Giddings.

Giddings is also starting to put selection pressure for the MyoMAX gene in female replacements with the aim of increasing the frequency of this gene throughout the flock.

"The MyoMAX gene has made a huge difference in lamb finishing and ease of do-ability," says Giddings. "We knew we were putting the right gene in to enhance the muscling in

**"Since using MyoMAX^{GOLD} rams we have seen more meat across the whole line of lambs and retention of important maternal traits."
– David Giddings**

the Romney and now we can test to ensure we carry it through."

A tailored Angus breeding program

Listening to his clients has led Giddings to create tailored information on his bulls.

The majority of Meadowslea's bull clients' farms are located in high country environments. Giddings felt indexes calculated from Estimated Breeding Values (EBVs)—such as the self-replacing index—were not providing his customers with the appropriate information to select the right bulls for their environment.

To make the process easier for his clients, Giddings developed his own High Country Indexes—a High Country Weaner Index and a High Country Finishing Index. Not all bulls are given a High Country Weaner Index because Giddings believes to produce weaners in the high country bulls must have positive fats, lower growth and lower milk figures.

"Any bulls with below average fats, above average growth or above average milk compared to the breed average do not get this index but they all get a High Country Finishing index and a rank," says Giddings. "In our sort of country those animals with high growth or high milk are too hungry. We are focused on breeding medium size, easy-doing cattle."



His index identifies animals that will thrive in the high country and will be feed efficient. Giddings is looking to identify animals that will fit a system of wintering more medium-framed cows on the same feed as compared to running fewer cows and producing weaners that are 10 percent bigger.

“The index takes into account days to calving and scrotal size, which are linked to fertility. Days to calving is important because every extra day for growth is money,” he says.

The future of genomics at Meadowslea

Giddings has used GeneSTAR® technology for the past two years.

Because he is interested in feed efficiency Giddings uses GeneSTAR MVP™, which are based on an expanded panel of 56 DNA-markers for the traits of feed efficiency, marbling and tenderness.

In the future, Giddings is looking to even larger panels with more traits to drive his programme forward.

“The ideal situation would allow us to incorporate markers for traits like feed efficiency, fats and longevity into our High Country index,” shares Giddings. “This would give us marker-assisted breeding values that would improve the accuracy of what we are already doing.”

Steak of Origin: The highest accolade in New Zealand beef

Identifying superior quality beef is the aim of The Steak of Origin, an annual contest sponsored by Pfizer Animal Genetics that rewards beef producers for producing high-quality meat. More than 350 entries were received for the 2009 contest, all vying for Grand Champion.

Each of the 350 entries provided a whole sirloin for analysis at Lincoln University where they were measured for marbling, pH and percent cooking loss. Semifinalists were then selected by a tenderometer, a mechanical “tooth” that bites down on the steak to measure tenderness.

Semifinal steaks were tasted by a panel of judges and consumers in a public supermarket. The semifinal group was narrowed to four entries in each of five categories for final judging at Beef Expo in Manfeild Park, Feilding.

At the Beef Expo a steak from a Piedmontese/Fresian cross, raised by



Catherine Withers, took home Grand Champion Honors.

Pfizer Animal Genetics General Manager of Sales in Australia and New Zealand Sarah Adams says the competition encourages farmers to connect the beef they produce to the end-consumer.

“The Steak of Origin really focuses farmers on producing quality beef and draws together the whole experience from paddock to plate.”

Sarah Adams promoted to General Manager of Sales in New Zealand and Australia



Sarah Adams has been promoted to General Manager of Sales for New Zealand and Australia and is now responsible for overseeing and spearheading sales of the current product offerings.

Adams has an extensive background in genomics, including five years working with Ovita. Adams’ background includes time as a Romney and Poll Dorset Stud owner, a journalist, General Manager of Simmental New Zealand and CEO of Ultrafine Merino Company.



Tim Sandbrook joins Pfizer Animal Genetics

Pfizer Animal Genetics welcomes Tim Sandbrook as Technical Sales Representative. Tim brings plenty of experience and enthusiasm along with three years laboratory experience and a diploma in Dairy Technology from Massey University. Tim spent ten years sharemilking in the Wairarapa, then ten years working as an Area Manager in the A.I. industry for Ambreed. More recently Tim spent four years working in farm automation for Protrack (part of LIC).

Tim says he looks forward to providing the latest technology to customers.



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“DNA-marker technology will play a role in the future of the beef industry and we’re just at the beginning,” says Liebergreen. “The earlier adopters of genomic technology have the opportunity to gain a head start on their competitors and improve genetic progress at a faster pace.”

The Pfizer Animal Genetics Technical Services Team is dedicated to helping you incorporate the latest in genomic technology and effectively manage each animal. To learn more about GeneSTAR MVPs visit our Web site at www.pfizeranimalgenetics.co.nz or contact us on 0800 228 278.

An update on genetic defect testing

Pfizer Animal Genetics is now accepting samples for testing for the genetic defect Neuropathic Hydrocephalus (NH) in addition to Arthrogryposis Multiplex (AM or Curly Calf). A diagnostic test for NH was created through industry collaboration, and our testing procedures have been validated by Dr Jon Beaver, confirming they result in identical, accurate outcomes.

NH is a lethal genetic defect caused by a recessive mutation that affects Angus and Angus-influenced cattle. Affected calves are born dead with an extremely large cranium with little or no brain material or spinal cord.

Please visit www.pfizeranimalgenetics.co.nz for ongoing updates, details about sample submission, or to download order forms and answers to frequently asked questions. For additional information, please contact Customer Service on 0800 228 278.