

News Release  
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**‘Single step’ is a big leap forward for profitable sheep production in New Zealand**

Genomics is revolutionising sheep production in New Zealand providing a new level of accuracy on breeding traits that allow farmers to select for greater productivity and, importantly, tailored to their farming environment.

In the sixth and final podcast in QMS’ international series, Sharon McIntyre, Technical Manager at Sheep Improvement Ltd, a performance recording service and New Zealand’s genetic database for sheep, explains how they have developed a ‘single step’ genetic evaluation system that uses a fuller DNA picture to accurately predict the merits of an animal.

“We started by integrating genomic data with pedigree information but we’ve moved onto a single step that puts greater emphasis on the genomics. This is because, generally, we work on the basis that we inherit 25% of genes from our parents, but genomics has taught us that the actual contribution can vary from 15% to 37% between siblings. Being able to tease apart those relationships means we can more accurately predict the merit of an animal, particularly for traits that aren’t measured until later in life such as milking ability and disease resistance. We can also take that information and spread it over near relatives. The power of the computer and numbers really does add a lot of value to progressing these traits and with more accurate measures, breeders are making better decisions and faster gains.”

Mostly funded by sheep levies, Sheep Improvement Ltd uses genetic data submitted by breeders across New Zealand. The findings from the data are shared with breeders to allow them to select traits that suit their farming environment and needs.

“It’s about having the right size genetics for your production system rather than the highest value of everything. Here in New Zealand, for example, farmers in drought areas don’t want too many multiples as they struggle to get them all away before the summer dry, whereas in areas where they are summer safe with rainfall, farmers are looking for a higher lambing percentage. We’re also seeing top performing breeders casting the net wider, looking at welfare traits such as body condition score to deal with adverse weather conditions, parasite or disease resistance.”

On a more advanced level, genomics is beginning to be used to improve eating quality and methane emissions. Eating quality, which can be impacted by intra-muscular fat, tenderness and pH levels, obviously has to be calibrated after slaughter but the findings are then spread across alive relatives using pedigree and genomics.

Similarly to the UK, New Zealand farmers are being challenged to meet environmental targets. To reduce the need for the sometimes practical challenges of planting trees, adding seaweed to feed and reduced stocking rates, AgResearch, the leading research base with whom Sheep Improvement works, has developed mobile methane recording technology and is implementing breeding solutions for methane emissions to help farmers meet the New Zealand government requirements. To date, it is seeing an 11% difference in methane output between the highest and lowest breeding lines. This technology is now starting to be used on some farms.

QMS podcast producer, Beth Alexander said:

“New Zealand is not dissimilar to us as an island nation with different climates, disease pressures and large acreages with minimal labour that need productive sheep with little intervention. This podcast shows us the power of genetic recording and genomics and how they can influence flock performance at a much more advanced level. The RamCompare programme in Scotland shows that the decision you make when you buy a ram can impact your farm performance for 10 years or more, and you can spend money to stand still or move ahead. The latter is made possible with a level of knowledge that goes beyond the initial physical and heritable traits.”

**ENDS**

**Notes to editors:**

This press release was issued by Jane Craigie Marketing on behalf of Quality Meat Scotland. For additional press information, please contact Alana on 07596 122184 or [alana@janecraigie.com](mailto:alana@janecraigie.com).

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QMS is the public body responsible for promoting the PGI labelled Scotch Beef and Scotch Lamb brands in the UK and abroad and also promoting Scottish pork products under the Specially Selected Pork logo.

Please note that the use of the word Scotch in the Scotch Beef PGI and Scotch Lamb PGI brands is correct and should not be substituted for an alternative such as Scots or Scottish. The history of the use of the word Scotch in this way, traces back to the 18th century.

QMS also helps the Scottish red meat sector improve its sustainability, efficiency and profitability and maximise its contribution to Scotland's economy.

The quality assurance schemes run by QMS cover more than 90% of livestock farmed for red meat in Scotland. They offer consumers in the UK and overseas the legal guarantee that the meat they buy has come from animals that have spent their whole lives being raised to some of the world’s strictest welfare standards.

Scotland’s beef, lamb and pork producers make an important contribution to the country’s economic, social and environmental sustainability, contributing over £2 billion to the annual GDP of Scotland and supporting around 50,000 jobs (many in fragile rural areas) in the farming, agricultural supply and processing sectors.

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