



TRANSFORMING THE ROMNEY BREED

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FULL OF PROMISE: Jon Hickford says the romney has the potential to improve its carcass yield further.

Stewart Morton sees he and his fellow romney breeders as a team of racing cyclists. "We're cycling in a race, but by working together as a team we feed off each others energies so we can go faster and further.

"It's better than slogging along by yourself," the northern Manawatu hill country farmer says.

His cycling team is made up of 10 North Island ram breeders, members of the breed's management and promotional body, Romney New Zealand. There's a similar team in the South Island.

They are carrying out research, now in its seventh year, aimed at finding which rams produce the meatiest and fastest-growing lambs.

Helping them – their cycling coach – is Lincoln University associate professor Jon Hickford. "It's working well," he says. "We can track down through the lineages and place a pretty impressive increase in meat yield at the foot of some key rams. We're seeing rams that have really transformed the romney breed."

Morton and fellow romney breeder Rick Pettigrew have been in the team since it was formed in 2007. In that time 140 rams have been progeny-tested – an exacting examination of the 10,000 lambs the rams have produced.

Two lines of research are involved. In one, each year each breeder picks one of their top-performing rams and takes it to a farm near Ashhurst, Manawatu. The South Island group

goes to Oxford, Canterbury.

There, the 10 rams are each mated to 60 ewes chosen at random. The breeders' work begins when the lambs are born.

They weigh and tag each male lamb as soon as it is born, taking note of its sire, and come back at regular intervals to dock their tails and weigh them, first at weaning, when those that have reached market weights are drafted to be slaughtered, and again at successive drafts till all are gone. Usually, two drafts are enough, but this year's drought slowed growth and three were needed.

Under the deals with farmers Kerry Osborne at Ashhurst and Hugh Taylor at Oxford, the female lambs are theirs to keep.

The male lambs are taken to the Alliance works at Dannevirke and Timaru, where their carcasses pass through the VIAscan system and the meat on the shoulder, loin and rump, the source of the most valuable cuts, is measured.

Alliance uses VIAscan to reward farmers for a high meat yield and Morton says the research is so the breeders can be sure they are selling top quality rams to their commercial farmer clients.

"That's a responsibility we take seriously." Pettigrew agrees. "There has to be a measureable improvement in economic traits. It's about putting money in our clients' pockets."

The VIAscan measuring throws up big variations, but over the years a noticeable improvement in muscle size has been registered as the breeders' use the information to lift the quality of each generation of rams. Likewise, the weight recording is showing an increase in growth rate.

Hickford says the average carcass yield – the ratio of meat to fat and bone - of the trial lambs has improved to 54-55 per cent, compared with a 50 per cent average across the romney breed.

"It's still not up there with the 60 per cent from the texel, but that is a terminal sire [all progeny slaughtered] meat breed, whereas the romney is a dual purpose breed [meat and fertility]."

However, some recent romney lamb carcasses have a 60 per cent yield, showing the breed's potential to lift its average further, Hickford says.

Morton says the feedback from clients has been positive. "I ask and they say, 'Just keep doing what you're doing'. There was a noticeable move to using composite rams a few years back but that's not happening anymore. The retention of clients is excellent."

On the Ashhurst trial farm, Osborne says he can't say with accuracy what difference the group's rams have made to his flock because he doesn't record weights or growth in the

female lambs. "But they certainly look better as they grow from hoggets to two-tooths. They're healthy and fat, with the meat in the right places."

Another benefit comes from talking to the breeders. "I'm learning from them and sharing their passion."

The other line of research is aimed at lifting the knowledge each breeder has of their rams' abilities.

The breeders bring their best two rams to a meeting each year where they choose which of the others' two rams they want to use over 20 selected ewes.

Morton says this is designed to improve the accuracy of data each stud has of its rams.

"The biggest risk factor for any breeder is what we call wastage. That's when you use a ram that doesn't perform to expectations."

By swapping rams with other farmers any anomalies are exposed. Each ram is used by two breeders and then by its owner. Their progeny's survival, growth, meat yield, wool yield and, for those ewe lambs that are kept to breed from, fertility are recorded and entered into Sheep Improvement Ltd (SIL) database, the industry's primary breeding information system, where the rams are given a commercial value.

This allows the breeders to analyse their flocks to identify the top-performing sires purely on their genetic merit.

The testing doesn't stop there. Each year, the top ram from the North and South Island groups is put into the Central Progeny Test, the country's most rigorous test of sheep breeding quality.

It measures the performance of the progeny of rams of a wide variety of breeds across a range of traits – fertility, meat value, growth, pH (an indication of tenderness), meat colour, fat colour, facial eczema tolerance, parasite resistance and fleece weight – and the top 25 are published. The Romney groups' rams usually make this top bracket.

Improving taste and tenderness will be worked on in the future, using the new ovine SNP (single nucleotide polymorphism) chip technology to chart small genetic differences that produce a variety of commercially important traits in sheep.

However, the South Island group has already received some indication it is on the right track with a lamb from its trials winning the Mint Lamb taste competition at last year's Canterbury A & P Show.

Using SNP chips to add to their knowledge of their rams' capabilities is where the breeders want to take their research next.

Facial eczema tolerance is an obvious selling point to commercial farmers, but Hickford is looking beyond them to the supermarket shopper.

Working with AgResearch, he is looking at genes linked to fat deposits. "The fat under the skin is of no value to anyone," he says. "We want to know how to get the fat where we want it, to provide the juiciness and taste in the meat, and not get a whole lot stuck on the outside of a carcass."

Financing the trials is expensive and the groups in both islands are grateful for sponsorship from animal health company Merial Ancare and tag maker Allflex. They also appreciate the work done by Hickford and Tricia Johnson, of AgResearch.

Hickford says they have already added more bulk to romney's genetic data available on SIL. "Despite the fact the romney is the biggest breed and that most flocks are based on romneys or their crosses, it hasn't been strongly linked genetically and that has meant we couldn't be precise in any genetic evaluation of the breed."

Fertility dropped during the 80s subsidy years and then came competition from imported breeds and composites.

But the work by the two Romney New Zealand groups in each island is having a big impact, Hickford says. "Their aim was to regain the moral high ground of being the elite breed and they've done that pretty quickly."

Asked why breeders who compete with each other to sell rams to farmers would want to share data, Morton brings up the cycling team analogy. "It's not a competition amongst us. We're all working toward the same goal of lifting the overall performance of the sheep industry."

He says the testing is about improving the breed as a whole, not picking winners. The groups do not want to reveal which breeder has the top ram each year and he says that in fact over the years no one bloodline has stood out. "That's because we're not all trying to breed the same type of sheep."

It's a far cry from the days when performance data was not kept and rams were chosen solely on their looks – straight back, deep chest, meaty hindquarters, good fleece cover, proud bearing and the size of their testicles.

Morton says this is still important to some farmers, but these days results count for more. "Are our rams as pretty as they used to be? Probably not, but they're meatier and they grow faster."

For Pettigrew, the big advantage of being in the group is being able to "benchmark" his rams' performance against others. "I'm also able to use other breeders' genetics and use them with confidence. That's exciting."

Morton says being able to talk frequently to like-minded breeders about breeding and to analyse each ram's results are the main benefits for him. "I'm on my bike pedalling flat-out and I can look around and see others alongside me working just as hard. It's a great feeling."