Data accuracy underpins successful Highlander Genetics ram breeding business

Farm Facts

Ram sales farm owners: Norm Alderson and Dani van der Linden
Area: 75ha
Location: Cheltenham, Manawatu
Annual ram sales: 530 Waipuna Highlander Maternals and 290 Terminals
Breeding farm partners: Polson family
Location: Mangamahu Valley, east of Whanganui
Flock: 1200 Waipuna Highlander ewes and 900 ewe hoggets
Preferred tag: RapID
Preferred applicator: RapIDMatic

When buyers arrive at the Manawatu property of genetics consultancy ALLIN Solutions, they can confidently tap into a deep well of accurate genetic data on every ram put in front of them.

ALLIN Solutions partners Dr Dani van der Linden and Norm Alderson are pioneering a novel approach to selling Waipuna Highlander Maternal and Terminal rams from their 75ha farm near Cheltenham, north west of Feilding.

Electronic identification (EID) is an essential enabling technology for them. It means they can accurately tailor a pre-selected group of rams using a set of priority traits supplied in advance for each buyer.

"EID is a cornerstone to our business. It's how we record our animals and that data and intellectual property is what our business is. We couldn't do without EID," Dani says.

They like to work closely with their ram clients by finding out what traits are important to them and which ones they want to improve.

"Once we have that information, I can filter my spreadsheet of data on all our sale rams and flag any animals that would fit the genetic requirements for each client.

"If a ram client wants 10 rams, we would put up 30 or so that genetically fit their criteria, and they can confidently select the ones that appeal to them on phenotype, knowing they already have the right genetics too," she says.

The rams are bred in a partnership with Liz and Donald Polson who own the Waipuna Highlander Maternal and Terminal stud flocks, and run them on one of their family's large hill country properties in the Mangamahu Valley north of Whanganui.

The Highlander breed is a Finn, Texel, Romney composite, first bred in the early-1990s by Breedline Technology which later became Rissington Breedline before being acquired by Landcorp and merged into Focus Genetics.

The rams produced by the Polsons were previously marketed through Focus Genetics where Dani had managed the genetics programme for their flocks and Norm handled the ram sales.

When the Focus Genetics arrangement ended about five years ago, the Polsons asked Dani and Norm to partner with them to breed and sell Waipuna Highlander rams.

"Dani has always been passionate about Highlander genetics, while Norm was focused on marketing and servicing our ram clients. By partnering with ALLIN Solutions, we can be nimble, innovative and in the best position to meet the expectations of our ram clients," Donald says.

All 1200 recorded Waipuna Highlander Maternal ewes and 900 recorded ewe hoggets, are EID tagged and all their progeny are tagged at docking.

At weaning, all the maternal ram lambs are trucked to the Cheltenham property where they are monitored and recorded for a range of traits, including growth rate, facial eczema and worm tolerance, to build on the data set of each ram before it is offered for sale.

"We take about a thousand of the maternal ram lambs at weaning, depending on the season, to our place, and in March, the terminal ram lambs arrive here as well," Norm says.

Sales are dominated by a regular central North Island group of farms, but they have customers from Northland to Southland and total sales are building each year.

In March each year, they aim to sell about 150 Highlander Terminal hoggets and 70-80 Highlander Maternal ram hoggets. This year, they aim to sell 450 two-tooth Highlander Maternal rams and about 140 two-tooth Terminals in November and December.

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Dani says the EID tags enable them to record information about an individual animal with almost 100% accuracy, vital to ensuring genetic progress and transparency for ram buyers seeking particular traits in their ram selections.

“With EID tags in place, there are no reading errors, it speeds up the job of reading tags, and we can take individual measurements for liveweight, facial eczema tolerance, sampling for worm tolerance using the CARLA* test, eye muscle scanning, the list goes on and on and on,” she says.

“Instead of having to read a small tag, we just scan it and have all the information on the screen of our tag readers, and it’s just super easy to access for us and for our clients at ram sales time.

They use a DNA sample from each lamb to determine its dam and sire as well as genomic information of each lamb. The tiny sample is taken from the ear of each lamb with an Allflex tissue sampling unit (TSU), at docking.

Dani says the TSUs provide a quick and easy DNA sampling method that is user-friendly, reliable, easy to transport, and an efficient way to process DNA samples in a laboratory.

“What is very valuable to us is the accuracy around parentage. Nothing’s 100%, but it’s as close to 100% as you can get. And that’s important for us,” Dani says.

It means they can use mob mating with several sires in each group of ewes, reducing the number of mating mobs down from about 16 to six or less. They use Animate, developed by AbacusBio, to help with sorting mobs and sires ahead of mating so they minimise inbreeding and optimise genetic gain.

“Importantly, using DNA to match parentage also means we can still run our elite flock more commercially. And then at lambing time, we actually don’t have to disturb, we don’t tag at birth, we don’t interfere, so they’re all lambed like a commercial flock would be managed.”

Dani completed her PhD in animal breeding at Massey University and works up to three days each week for Beef + Lamb New Zealand where she is a member of the team responsible for producing the breeding values from the data supplied by sheep studs across the country.

“I’m a scientist at heart and a real data nerd, so I love this kind of stuff, the technology and everything that goes with it,” she says.

The team recently rolled out a new genetic evaluation update for maternal and terminal sheep breeds. This is available on nProve (visit nprove.nz for more information), a website where farmers can view and compare any breed, animal and stud in one place.

Importantly, for the first time, the latest update includes all the genomic evaluation data for the Waipuna Highlander Maternal flock, dating back to 2017.

“For us personally as stud breeders, we want to compare our genomically enhanced ram data with other studs using genomics, so this is a big breakthrough for us,” Dani says.

“Previously, all the data from our full flock genomic recording was just sitting in the background. But now it is being utilised in the latest update and that has given us a massive lift, and we are really reaping the rewards from that now,” she says.

Norm says the result means they have hit their own ambitious five-year goal of having the best performing maternal flock in the country.

“As far as data goes, it was one of our goals a few years ago to be the best and we can safely say we have the best flock in New Zealand now, without question.” Norm says.

Their 2024-born lamb crop has the highest average of any flock for NZ Maternal Worth Index on nProve.

“Our rams are used also in the Central Progeny Test, so our offspring gets measured in those environments, and they are able to be compared on nProve,” Dani says.

“The comparative analysis is how we measure where we are against other breeders,” she says.

Norm says a big focus for the Waipuna Highlander Maternal breeding programme will be further improvements in worm tolerance, plus new traits like intramuscular fat and meat-eating quality.

“IMF and meat-eating quality have been more of a focus in terminal ram breeding, but we see it as an opportunity because a lot of straight maternal progeny still go to the works, so why not see what we can do in that space too?”

They are both excited by the challenge of ram breeding, particularly helping commercial farmers to build profitability, and capitalising on the data which comes from genomic testing.

“Genomics is really just reading the DNA makeup of each animal in a flock,” Dani says.

“Some very clever people have aligned certain markers on the DNA with certain traits like for example reproduction, facial eczema or worm tolerance, and their ability to grow well.”

“You can look for the presence of those markers and it gives you a crystal ball. It helps to give you a view into the future because you don’t have to wait for the ram or the ewe to actually reproduce and look at the progeny to see their performance.

“You can get more accurate predictions of an animal’s potential performance through breeding values which are much more accurate thanks to the information from their genomic profile. So, more and more accurate predictions of future potential for a variety of traits,” she says.

For commercial farmers, this could take their flock (or herd) performance to a new level much quicker than through traditional ram selection techniques.

Dani says it will allow commercial flock owners to make better ewe lamb replacement decisions by being able to have a sneak peek into how good each one is for reproduction or any other traits that are important to a flock owner, like resistance to worms or facial eczema.

“To be able to select for those traits instead of only being able to look at each ewe lamb and ask how big she is.”

“Or, if I take it through to hogget stage, will she have a lamb or not?”

Dani says cost is the biggest barrier to greater use of genomic-based selection, especially for commercial flock owners. Genomic profiling costs up to $30/head, out of reach even for many stud flock owners.

“But if we can make it a value proposition for commercial farms to see what the value is and then get the labs that provide the genomic testing down in price to where it becomes adoptable, then it’s a game changer I think,” she says.

She believes more commercial flock owners will soon start to see the value they can generate from EID tagging their ewes and genomic testing.

“The Allflex TSUs are easy to use, and they are going to be crucial if commercial flock owners adopt genomics. Mark my words, it is going to happen.

“We’ve got a couple of clients very interested in doing genomics on a commercial sheep now. They have EID tags in all their sheep already,” she says.

Norm points to the massive productivity gains made by sheep farmers since the mid-nineties when the ewe numbers began to slide.

“We have a lot less ewes on farms now than in 1995, yet our production of sheep meat is very similar to what it was back then.”

“Some of that is better management but a big percentage of the improvement in meat production is through better genetics.”

Norm says farm sector consultancy business Abacus Bio modelled the improvement in meat production in sheep flocks and discovered that 51% resulted from better genetics and 49% came from better management.

“I think with genomics, we’ll go the next step. We’ll produce even more meat from fewer sheep again I’m sure of it.”

“As we get more efficient, hopefully the profitability of sheep farming improves and we can stand on our own two feet and compete with other land use options like forestry or lifestyle block developments.”

Norm and Dani say their working relationship with Allflex and, in particular, their area manager Mark McManaway, is superb.

“If we have any issue or problem and Mark’s not available, he sends us a quick message to say ring the office and there’s always people there that can call or contact us via email to help and they are quick too.

“One year we ran out of tags because our lambing had been so great, and we had those tags delivered in two days, printed in Australia and sent over. I thought that service was exceptional,” Norm says.

“Another time we realised a couple of days out from docking that we didn’t have the ‘bucket’ list for the tags so we called the office and it was emailed through straight away. It is invaluable to us.”

“We will be with Allflex permanently just because of the relationship we have now and the service we’ve had. We are thrilled to partner with a great company like Allflex,” Norm says.