CRC FOR SHEEP INDUSTRY INNOVATION

NEWS RELEASE

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ASBVs key to worm resistance and resilience at Petali

Selecting breeding stock with superior in-built resistance to worms is delivering improved growth rates and more resilient lambs for New England breeder Martin Oppenheimer.

Mr Oppenheimer runs the Petali Poll Merino and White Suffolk studs at Walcha, where the high summer rainfall presents an annual challenge in controlling populations of parasites such as Barber's Pole or *Haemonchus contortus*, which can have a devastating effect on productivity if left unchecked.

However, through an integrated approach built around superior genetics, pasture management and nutrient supplementation, Mr Oppenheimer has kept worm levels in check and bred a high-performing flock resilient to parasite pressures.

"Operating in an environment in which worms are a constant challenge, we needed to implement a grazing management system that would minimise parasite populations, as well as select breeding stock with an in-built resistance to worms," he said.

"The use of Australian Sheep Breeding Values (ASBVs) has been a key part of that strategy – objective information can make a real difference when trying to select stock that are not only productive but can withstand the conditions that we operate in.

"During the recent run of wet summers in eastern Australia, worm control has been an issue in a number of regions and ram buyers have appreciated the fact that we have objective data to show that our stock have a high level of genetic resistance against worms."

ASBVs allow sheep breeders to compare the genetic potential of animals independent of the environment and location – as such they are an important tool when selecting new genetics to bring into the Petali flock. The property is located at an altitude of 1100 metres, and although it is a temperate environment, much of the average annual rainfall of 800mm arrives in summer.

In turn the Petali team measures the performance of the flock for the full suite of traits in order to provide ram buyers with detailed objective information about the genetic make-up of their stud flock of 700 Poll Merino ewes (average 17.2 micron).

"In terms of worm resistance, we are finding some clients are demanding rams that have a WEC ASBV of -50 or better," Mr Oppenheimer said. "We now have very few sheep that we're using or selling that are not resistant to worms."

Petali has also been involved in the Genomics Pilot Projects run by the Cooperative Research Centre for Sheep Industry Innovation (Sheep CRC), with 25 young rams DNA tested during 2012. It's an area which Mr Oppenheimer is monitoring closely for future use in his breeding program.

The Petali breeding program focuses on selecting genetics for a multi-purpose Poll Merino and highly productive White Suffolks. The ASBVs used in selection focus on traits including growth rates, staple strength, eye muscle and fat.

"We're continually on the look-out for superior genetics from across Australia and we use the Sheep Genetics database quite a bit to study the pedigrees of sheep – it's amazing how many of the industry's top sheep are now on this network," Mr Oppenheimer said.

"Whether a ram carries worm resistance is a black and white question for us – we must have it for this country. We don't build WEC into our selection indices – we go looking for productive breeding stock that meet our objectives, and as part of that process we always ask the question about whether the animal carries ASBVs for WEC or not."

Mr Oppenheimer is currently placing additional pressure on improving the performance of progeny during the period from 3 to 10 months of age.

"We're pushing for better performance from our Merino ewes in their lamb rearing abilities, and bringing more growth and vigour to their lambs, which has traditionally been a weakness for fine and superfine types," he said.

"We want our ewes to present a strong weaner, which will naturally have a higher chance of survival through their first year. But we're not going to compromise on traits like wool quality or fibre diameter in order to gain these additional traits – it will be something that we build into our sheep as we go along.

"But we know that if we have strong weaners, then their first fleece will have more weight and a stronger staple strength, and that they'll also be better performers in their second and subsequent years.

"With our White Suffolks we have seen what is possible in just a short space of time with improvements in growth rates and eye muscle. Although the Merino is a more complicated animal with both fibre and meat traits, we're confident that we can make just as rapid progress with our Merino flock."

However, genetics is just a part of a broader approach to worm management at Petali, with grazing management and the supply of nutrients and trace elements such as selenium also playing important roles.

Mr Oppenheimer has completed the WormBoss worm management training program, which assisted in developing a more precise program for monitoring and treating animals.

"We've changed significantly and the expense and impact of worms on our flocks has decreased while at the same time our production has increased," he said. "If we get our management right, then worms are not an issue, but it's like having a three-legged stool – our strategy requires all three legs of pasture, nutrients and genetics, in order to be effective."

Mr Oppenheimer has observed that supplements of the trace element selenium, which is naturally deficient throughout the region, has a direct impact on his flock's ability to withstand worm pressure.

"We have noticed that if we drop off our selenium applications to our soils, then we will have to drench an extra time," he said.

That said, drenching now occurs just three times a year – a vast improvement on the monthly drenching program that occurred when he returned to the family farm in 1980.

Grazing management is the final piece in the puzzle, with Petali stocked at "well above" the average local stocking rates by following the intensive New Zealand system 'Technograze'. This form of rotational grazing is built around small mobs of 200-450 sheep being moved from paddock to paddock three times a week.

Each paddock is then provided a 60 to 90-day rest period before being grazed again. This rest period not only allows the pasture to revive and boost dry matter production, but also minimises the opportunity for parasite populations to establish and infect the animals.

“We want to provide enough nutrition for our sheep that they can express their full genetic potential, and grazing management also has a major impact on the worm threat,” he said.

“Even with good management, you are still going to have some worms present and that is why worm resistant genetics are so important. Having sheep that are resistant and resilient to worms means they can handle worm burdens and even defeat those worm burdens.”

- More information on ASBVs and DNA-based tools for genetic selection can be found at www.sheepcrc.com.au. For advice on worm management best practice, visit www.wormboss.com.au.

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Caption: The Petali Merino flock’s average ASBV for worm egg count (WEC) has improved rapidly in recent years, confirming the presence of genetic resistance to worms.

Caption: Selecting breeding stock with superior in-built resistance to worms is delivering improved growth rates and more resilient lambs for New England breeder Martin Oppenheimer.

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