Harnessing eID technology to select high performing breeding ewes

Producer case study: Audrey Bird

Systems-focused farming

Audrey Bird is a key operational part of a mixed sheep and cropping property in the Wickepin shire of WA. The farm has been in her husband's family since 1958 and her son Daniel and partner Danelle are the third generation running the cropping enterprise, while Audrey concentrates on the sheep. Wickepin shire historically averages 400mm of annual rainfall, although recently this has reduced closer to 350mm, with around 5 months growing season and very little summer rain. Currently the family manages around 5200 ha total, made up of a home farm and four lease properties, of which 600ha is reserved for winter grazing.



Image 1 Audrey with her working dogs

The focus of the business is cropping canola, lupins and cereals with around 90% of income derived from harvested grain. The remaining 10% of the farm's income comes from livestock.

"One of the real challenges here is frost, so we have our low lying paddocks on a year-in, year-out rotation and when those paddocks are in pasture we need to get production out of them, so that's why the sheep are there," Audrey says.

"Our focus is still on cropping when a paddock is in pasture, so there's a high legume content which we sow entirely ourselves, generally with a cereal and a serradella, clover or vetch which we've done this year. We'll spray out the cereal later in the year so it's entirely legume, so we manipulate all our pastures to suit the cropping enterprise."

Because the cropping program is prioritised, sheep are run at lower stocking rates to preserve ground cover and ensure the paddock is prepared for the crop to go in. "We intentionally don't run stocking rates as high as we could because we're focussed on taking out the grass, so we'll have less Food on offer (FOO) but the paddock will be presented well for the crop the following year," Audrey explains. That said, they maintain a stocking rate of around 5.5-6 DSE per winter grazed hectare.

Balancing the breeding

The farm stocks around 2000 breeding ewes, made up of 1500 merinos and 500 ultra whites – which were first bought in at the beginning of 2023 to experiment with reducing the labour involved in operating the sheep enterprise. Audrey wanted a breed that was easy care with a meat focus. "We were looking for something to get away from wool, to minimise the labour involved with shearing,

crutching, lice management and mulesing," she explains.

With the wool market recently strengthening and profitability of merinos improving, Audrey and Daniel still are deciding how to balance the numbers of merinos and ultra whites to optimise their flock.

"All the lambs on the ground now are first-cross merino/ultra white or a pure ultra white lamb, and we did the same last year. We're going to mate about 800 back to merinos this year because we haven't decided which way we're going to go, so we want to make sure we still have some young merino ewes coming up."

Audrey has been very happy with the performance of her ultra whites so far, and has experimented with mating ewe lambs, as well as joining 3 times in 2 years. They achieved a per annum equivalent lambing rate of 115% per ewe joined.

"We just marked the lambs out of last year's ultra white ewe lambs - so they were just on 12-months old when they started lambing - and we got 82% out of them. Also they didn't have any trouble with lambing, and the lambs born just hit the ground running, so we're very happy with that result."

Her breeding objective when it comes to the ultra whites is to breed ewes with good milk production and high lambing percentage producing lambs with excellent growth rates. "I haven't got the numbers yet to put much selection pressure on, but going forward I would like to put more pressure on twin-bearing ewes," Audrey says.

Audrey is well placed to take her ultra whites to the next level given she has years of experience selectively breeding merinos with a robust data collection program. This is why Audrey is part of the MLA-funded Producer Demonstration Site "Utilising eID Technology and Data Management" managed by AgPro Management.

Opportunities through technology

Audrey has been using electronic identification (ID) tags for six years and every sheep on the farm currently has one. Every year, she has collected a fleece weight and character comment, as well as a body weight on her merino ewes to assist with her classing. She will normally mate the top 60% to merinos, with the rest going to a terminal sire to produce prime lambs.

Audrey would like to take this data-forward approach into her ultra white enterprise too, with particular interest in the HF+ gene to improve her lambing rates. HF+ is a specific type of mutation on the GDF9 gene which is linked to production of more dominant ovarian follicles, leading to a higher incidence of multiple births in sheep.

"We're chasing the HFplus gene to get it through our ultra white ewes. What I like about it is it has the power to increase your lambing percentage but it's not going to give you five or six lambs at a time - you'll get more twins and triplets but it seems to stop there," she says. "You want rams with 2 copies of the gene so they are guaranteed to pass on at least one copy to all their daughters, which is what creates the gain in lambing percentage."

Tracking the presence of this gene in individual animals is done through genomic analysis, which involves taking a small tissue sample from the ear of individual sheep and sending it to a lab for testing. Audrey can see the benefit in using this kind of technology to enhance her selection of breeding ewes. "I think we have to start being smarter about using the technology to identify the ewes that perform well to improve the kilos of lamb we wean per hectare, or whatever the profit driver might be on any farm," she says.

Electronic ID tags underpin the selection process for Audrey. "Identifying the ewes that are top performers and breeding from them is a no brainer for me and to do that we've got to use eIDs," she says. "Even with the merinos, you often see a ewe come through at weaning time with two thumper lambs, and she's in good nick herself, and I often think because I can identify her and replicate her, she's just worth so much more money to me."

Audrey has invested in a TruTest XR5000 data collector and an XRS2i wand to help with her data collection, as well as a basic weigh crate. She hopes to add a panel reader to that collection to help with counting sheep coming out of a draft and would love to own an Optiweigh and an auto-drafter in the future.

"Because they're only 10% of our enterprise, we also have to be realistic about the resources we spend on them to push the envelope," she says.

Looking ahead

One of the challenges faced running sheep on any leased land is the limitations of livestock infrastructure. “Because we have four lease properties, fencing can be a bit of a challenge - regardless of breed,” Audrey comments.

Audrey would one day like to use virtual fencing to combat this issue − a technology currently available in the cattle industry but not yet for sheep.

“It would be a big cost but I’d love to try putting it just on a few of the leaders in the flock - say 10% of the animals. It would probably also help to graze paddocks more efficiently,” she says.

Her main focus in the coming years, however, is improving her lambing rate, with hopes of achieving 140% in her ultra whites through pursuing the HF+ gene. Audrey is also considering returning to mating her ewes 3 times in 2 years − a practice that is not as daunting in a low rainfall zone as it could be for other breeds.“Ultra whites just do so well on dry feed, so the short growing season is just less limiting for them than it is for the merinos,” she comments.

Among the considerations for the next few years is improving growth rates in her lambs with the introduction of carbon farming a probability in the future. “If we can get lambs dropped and off-farm through the processor quickly, that’s going to better for us from an emissions point of view,” she says.

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