

# Using eID for prime lamb production in the high rainfall zone



## Enterprise snapshot

|                                     |   |
|-------------------------------------|---|
| <b>Owners</b>                       | Richie and Nikki Kirkland and family  |
| <b>Property name</b>                | Kirklands   |
| <b>Location</b>                     | Furner, Lower South East, South Australia   |
| <b>Size</b>                         | 2,500 ha  |
| <b>Brief enterprise description</b> | Predominantly a prime lamb enterprise running approximately 9,000 maternal composite ewes and 2,000 ewe lambs, and crops 700 ha with broad beans, wheat, barley and canola. |
| <b>Number of employees</b>          | 4 full time   |
| <b>Average annual rainfall</b>      | 600 mm  |
| <b>eID data being used</b>          | Pregnancy scanning of all ewes for multiples, birth status of ewe lambs, average daily weight gain, lambing success by paddock.   |

## Background

The Kirkland family has been farming at Furner in the lower southeast of South Australia since moving to the district through the soldier settlement scheme in the 1950s. Kirklands is now managed by Richie and Nikki Kirkland and their two children, along with Richie's semi-retired parents. The enterprise is based on a flock of 9,000 maternal composite ewes run on 2,500 hectares. Soils range from black flats, prone to water logging, to sandy rises. Pastures are based on phalaris, annual ryegrass, sub clovers and balansa clover. The Kirklands also crop about 700 hectares of broad beans, wheat, barley and canola, of which about 20% is retained on farm for feed. Paddock sizes range from 30-50 ha and are serviced by laneways.

Sheep are run in large mobs of 800 to 2,000 for most of the year, with mob size being reduced to as low as 50 during lambing for ewes with multiples. Grown ewes are generally mated, starting in January with scanning in March. Dry ewes are rejoined soon after, along with ewe lambs, and are scanned a second time in May with any remaining dry, sold.

Over the past two decades the Kirklands have introduced a range of best practice methods and technologies to increase the efficiency and profitability of their prime lamb enterprise including electronic identification (eID) tags and scanning equipment in 2017. This case study gives an insight into their use of eID scanning equipment and related data to support decision making.



Figure 1: Richie with his eID-tagged ewe lambs

## What eID supported improvements were the Kirklands looking for?

- High reproductive efficiency
- Keeping track of ewe lambs born as twins
- Efficient use of available feed for ewes
- Identifying best performing paddocks for lambing
- Fast growth rates in lambs
- Easier animal handling
- Easier way of recording stock movements

## Using eID for data collection

The types of eID related data collected by the Kirklands are:

- Pregnancy scanning results – triplets, twins, singles, dries
- Ewe lambs born as twins
- Condition score
- Lamb weights at marking and weaning and opportunistically at other times
- Identifying ewes that have birthing difficulties
- Identifying paddock of birth for lambs

Data is collected using a Tru-Test XR5000 weigh scale indicator integrated with a Te Pari HD3 autodrafter/handler based at the main yards (figure 2). A wand reader is used to collect data out in paddocks for ewes that are found to have health troubles. A custom made portable race reader unit was fabricated on farm in 2019 incorporating a Tru-Test XRP2 eID reader with twin panel antennas for use in satellite yards (figure 3). It will be further refined to improve its read rate through modification of the metal frame surrounding the panels.

The eID equipment purchased was chosen for its capability for data collection and lifetime storage capacity with up to 100 pieces of information for each animal. The Kirklands spoke to other producers about their experiences with different manufacturers and their

own previous experience with a Tru-Test XR3000 unit to inform their purchasing decisions.

Data is currently used from the indicator to guide real-time drafting decisions based on weight, birth status or pregnancy status. The Kirklands would like to learn to use more of the features available within the indicator to guide drafting based on multiple attributes to differentiate higher and lower performing individuals, however at present, data is not managed with excel or other data management software away from the drafting race.

Limited data is also uploaded onto livestock management software, AgriWebb, to keep track of where stock are located, for example, which specific paddock.

Richie says the factors limiting more complex data management are time, cost and availability of farmer friendly software that can link to apps currently used on farm like AgriWebb and Lambplanner. He says, being able to participate in more software training workshops would also enable better use of all the data they are collecting.

## How has eID technology helped them achieve their livestock goals?

### Pregnancy scanning results

Individual electronic identification of sheep has made capturing pregnancy data more efficient. The data has allowed the Kirklands to maximise retention of ewes born as twins and twin bearing ewes. eID data collection has also informed decision making for removal of ewes scanning twice dry, resulting in a scanning rate increase and reduction of 10% to 5% in dry sheep.

This has contributed to an overall 15% improvement in lambing percentage over the past several years. eID technology together with data collection has enabled improved catering for the specific nutrition needs of pregnant and lactating ewes. An improvement in the management of mob sizes for twin and single bearing ewes has been achieved to promote healthy birth weight and lambing conditions to reduce the risk of mis-mothering.

Richie believes the increases could have been greater if they had not also been pursuing the expansion of their overall flock size during that time. The desire to increase overall numbers of stock being run has led them to retain more single bearing ewes than they otherwise would have.

Despite this reduced ability to apply increased selection pressure for twinning, the number of ewes bearing twins has risen from about 50%, ten years ago, to 75%. This has contributed to an overall increase in the number of kilograms of lamb per hectare being produced, but also introduced a new challenge in meeting ideal weight specifications from processors.



Figure 2: Te Pari handler with panel readers coupled with Tru-Test XR5000 indicator

### Average daily weight gain

The increased number of twins has tended to reduce early growth rates of these lambs and there has also been an increase in the ideal processor specification the Kirklands are targeting, from 20-22kg up to 24-26kg in the last few years. This has made the pursuit of higher average daily weight gain in lambs an additional priority in order to maximise the returns on lambs sold. In the past few years, lambs are being weighed as often as possible, whenever they come through the yards, for other purposes such as marking, weaning and shearing. Only sample groups of up to 100 lambs are weighed at weaning as competing demands during this busy time of year prevent the weighing of all lambs.

Keeping track of average daily gain (by birth status) provides data to identify poor performing ewe lambs for removal. It also enables early identification of other problems with nutrition or health that reduce weight gain, which might otherwise not be detected, until significant production loss had occurred.

### Condition scoring

Condition score data is collected to guide management decisions for nutrition in the lead-up to joining, during pregnancy and also to identify high performing ewes that rear twins with good weight gain and recover condition score quickly ahead of the subsequent joining.

### Lambing success

Reproductive efficiency has also been improved by monitoring the success of ewes in birthing and early rearing of lambs on a 'by paddock' basis. The Kirklands have observed over time, that some paddocks showed consistently better results for lambing success. Data is now being collected on a 'paddock by paddock' basis across the farm to inform allocation of lambing paddocks. An eID wand reader is used to identify any ewes out in paddocks that have birthing issues and this enables them to be held and assessed the next time they go through the yards.



Figure 3: Portable race reader fabricated on farm incorporating a pair of panel antenna and Tru Test XRP2 eID reader. Further refinement of the design is planned to improve read rate.

### Additional benefits

The use of autodrafting has saved on time and effort. If animals get boxed in the yards, it is a lot easier to re-sort them back into their existing mobs using the animals' eID tags with the autodrafter.

Sorting ewes into mobs of multiples and singles at scanning has enabled a more efficient allocation of feed both in containment and paddocks.



## Future plans

The Kirklands plan to track performance of rams being brought in, to understand which studs are producing rams that lead to the best reproductive efficiency and average daily gain for lambs on their property with their ewes.

They would also like to develop lifetime pictures for the performance of each ewe with data measuring breeding outcomes over successive years. Data to be measured will include multiples versus singles, ease of birthing, ability to raise lambs to weaning, maintain or quickly recover condition score post lambing, etc. This would enable identification and retention of the best ewes as breeders for longer.

There is interest in adopting the use of software that combines productivity data for multiple traits, such as, birth status, average daily gain and condition score across multiple years into indices for ranking the value of individual animals to support culling decisions. The goal is to have the processed data transferred to the indicator and used with the autodrafter. Kirklands are also interested in collecting more health related data against individuals, for traits such as dag score, worm egg counts, etc.

The purchasing of an in-paddock weighing system when they are more perfected and reliable, to ease the process of getting data to track average daily gain, is also in the long term plans.



## Advice for producers commencing with eID

Based on his experience, Richie suggests the following:

- Start out small - collect and use basic data.
- When it comes to equipment - a simple wand is a good start. Panel readers are more complicated to set up to get good results.
- Consider using some borrowed or hired equipment to get a feel for how equipment works and what is involved with collecting and using data.
- Be prepared to teach yourself how to use the equipment – manufacturer support is in high demand and at times can be difficult to access.



## More information

This case study is an initiative of eID Advantage Program from the Government of South Australia, supported by Meat and Livestock Australia and AWI Extension SA.

For more information visit [pir.sa.gov.au/eid](http://pir.sa.gov.au/eid)

