

Using eID for improving Merino performance on Eyre Peninsula



Enterprise snapshot

Owners	Darren O'Brien and Jodie Reseigh-O'Brien
Property name	Mamblin
Location	Upper Eyre Peninsula, South Australia
Size	3,200 ha
Brief enterprise description	Commercial meat and wool enterprise running approximately 1,100 ewes and Poll Merino and Dohne Merino studs. Cropping program comprises 1,000 ha wheat, 500 ha barley, lentils, oats and the balance of cereal rye sown for grazing and medic pasture.
Number of employees	2 full time and 1 part time
Average annual rainfall	310 mm
eID data being used	Pregnancy scanning of ewes for multiples, birth status of lambs, average daily weight gain used for commercial purposes, full genomic testing of all sheep and at least 25 additional traits assessed to inform management of the stud enterprise.

Background

Darren O'Brien has been farming near Kyancutta in partnership with his family for 40 years. He and Jodie have managed the farm independently for the past 10 years.

At their property, Mamblin, Darren and Jodie typically run 1,100 ewes and produce 1,500 - 1,600 lambs per year, plus lambs from ewe lambs. They also run two studs - Dohne Merino and Poll Merino, utilising the best performing animals from their entire flock based on data collection and analysis.

About 300 tonne of barley is retained each year for feed. Recently the O'Briens have started using a chaff cart during harvest and bale chaff to feed stock they hold in containment during late summer and autumn. Barley straw is also baled for feed.

Darren uses a short joining period, as this makes weaning and subsequent data collection easier. Rams are put in for first joining for 21-30 days in November and December, then removed for 25 days and returned for a second time, which also aligns with mating of ewe lambs.

Ewes are pregnancy scanned at two separate times to account for the 25 day gap in joining. First lambing is timed for the last week in April or the first week in May. Late lambing ewes remain in containment for extra time, enabling management of twin bearing ewes and management of ground cover and feed availability. The timing for weaning is dependent on feed availability and is typically when the youngest lambs are 8 or 9 weeks old.

The O'Brien's first used electronic identification (eID) tags in stud ewes in 2010, replacing numbered visual tags, and by 2013 all stock were tagged with eID. The transition has made data collection faster, more accurate and efficient.

This case study explores the extensive range of data collected for stud purposes and focuses on data and management that is most valuable to commercial enterprises.



Figure 1: Darren using his 2-way autodrafter to record live weight and draft ewes according to pregnancy status linked to individual animal's eID.

What eID supported improvements were the O'Brien's looking for?

- Increasing weaning rate is a high priority, with a focus on three sub-goals:
 - increasing reproduction rates by keeping track of ewe lambs born as twins, and retaining as many as possible for breeding
 - selecting for ewes with good mothering ability
 - efficient use of available feed to ensure ewes are in good condition score at joining, to maximise conception and good nutrition through pregnancy, lambing and lactation, to promote birth weights and better survival rates of lambs.
- Short conception timeframe across the flock.
- Condition score.
- Fast growth rates in lambs.
- Excellent conformation.
- High-value fleece production.
- Ease of management - dag, worms, bare breech, breach wrinkle.
- Traits to enable the transition to non-mulesed (5-6 years ago).

eID data collection and use

The types of data collected and recorded using eID include:

- pregnancy scanning results - twins, singles, empties
- birth status of all lambs - single, twin, triplet
- timing of conception (early or late)
- condition score at post weaning weighing and pre-joining
- body weights at weaning (3 months), early post weaning (4-6 months), post weaning (6-8 months) and yearling/hogget (12 months), shearing and pre-joining
- eye muscle and fat scan (once in life at 6-8 months)
- fleece weight for each ewe, each year for 5 years (for commercial purposes, one fleece weight at hogget age is generally enough)
- micron for each ewe, 2 to 3 times over 5 years (for commercial purposes, one micron test at hogget age is generally enough)
- scores for numerous structural and visual traits such as conformation, dag, urine staining, breach wrinkle and cover, face cover, staple structure, wool nourishment, belly wool creep up sides of animal and wool character
- saliva based testing for resistance to worm infection.



Figure 2: Data being collected from sheep held in a race using a wand.

The O'Briens purchased eID equipment in 2010, including a Prattley 2-way autodrafter, a Tru-Test XR3000 weigh scale indicator and a Tru-Test wand.

When in the yards, Darren uses a Shearwell wand to collect data, including Australian Sheep Breeding Values (ASBVs). The Shearwell wand links directly to the Pedigree Master (free software) program on a PC or tablet with a large monitor screen, allowing data to be analysed and submitted to Sheep Genetics directly. This system is useful as individual animal data cannot be accessed or shared directly via the wand alone.

The Prattley 2-way auto drafter is still used today, however it has been upgraded. The original scale head has been replaced with an XR5000 enabling more traits and data points to be recorded. The O'Briens also upgraded their wand to a XRS2i which allows direct data entry and features an easy-to-read screen. The eID panel antenna has been moved from a side-mounted position to an overhead position. This change improves tag reading reliability, as ewe and rams are tagged in different ears, and it prevents any false tag readings if sheep are close to the outside of the autodrafter.

Although all components of eID hardware are connected through Bluetooth, there is still a need for cabling to provide power to the devices. Darren advises care must be taken to prevent sheep from accessing and chewing or pulling on cables, which can cause equipment malfunction or damage.

He also cautions while Tru-Test systems are relatively easy to use, it's easy to accidentally delete data points when navigating through data fields. Reliable support for trouble-shooting equipment and software issues is essential, as teething problems are inevitable, especially in the first few years.

To avoid unexpected delays, Darren has duplicate items such as wands and barcode printers and scanners for fleece weighing and fleece testing, ensuring that if one item fails during the workday (particularly at busy times like shearing), the other is available as a backup.

For collecting fleece data, the process is:

- a wand is connected to a barcode printer via Bluetooth
- the eID tag is scanned as the sheep is shorn
- the printed barcode is placed into a bulldog clip attached to one of two clothes baskets - one for fleece wool, the other for belly and pieces.
- both baskets are weighed using the indicator (attached to the scales) and a barcode reader allowing for automatic weight recording and reduced human error.

All data is saved in a Microsoft Excel spreadsheet, then loaded into the Pedigree Master program where it is sorted, filtered and used to create drafting lists for creating breeding mobs and sale lots. Pedigree Master also submits data to Sheep Genetics.

How has eID technology helped achieve their livestock goals?

Darren and Jodie view eID as a tool that, once users become familiar with the equipment and confident in handling the data, makes data collection easier, more accurate, and more reliable. This information can then be used to make highly objective assessments of animals for specific traits that can increase productivity and profitability.

Using data correctly is key. Darren and Jodie advise the single most useful item of data to collect is pregnancy status. This assists to:

- manage nutrition in twin versus single bearing ewes
- optimise mob sizes for lambing
- enable identification and removal of low performing (empty) ewes
- improve accuracy of visual classing by eliminating bias towards retaining singles, which occurs when classing mixed birth mobs.

Recording an early or late conception status against ewes at scanning helps to shorten the lamb drop across the flock. Early conceivers are retained for future breeding and late conceivers are removed.

Darren doesn't set specific numeric targets for productivity gains, instead he operates on a principle of continuous improvement by identifying and removing lower performing animals. He prioritises retaining individuals that produce more lambs with sound conformation, strong survival through to weaning and beyond, and fleeces of good value.

Collecting and using data for condition score, and multiple weights from weaning through to first shearing and joining, as well as fleece data, has enabled production of very high performing animals. Over the past few years, the O'Briens have entered various sires in the South Australian Sire Evaluations, and all have been trait leaders for growth and wool cut, with excellent conformation.

In future, Darren would like to upgrade to a 5-way autodrafter to save time and effort during drafting operations.



Advice for producers commencing with eID

Darren and Jodie offer the following recommendations based on their extensive experience with data collection and eID.

- Collect and record data of which lambs come from twin mobs as this is essential for achieving good classing and avoiding the bias of removing twins.
- Birth date (such as, early versus later born) has a big effect on weaning weight and post weaning weight, so be cautious using it as selection criteria in early classings. Instead, record two weights at lamb marking and weaning or post weaning, and create a daily weight gain.
- Identify and remove any ewes that are empty at scanning or fail to raise a lamb - ewe lambs excepted.
- Work out what is making you money and collect and use data for those things (such as, live weight gains, twin performing ewes).
- Make sure you have the phone number of your representative handy - you will need it at some point.
- Be prepared to invest time in learning Excel software and how to use it to manage data.
- Do any major data related activities in the morning on a week day as this is a more reliable time to get tech support for your equipment if the need arises.

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

