Sheep CRC Practical Wisdom Notes

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Know it. Do it.

Individual Electronic Identification (eID)
Scott and Anna Brien, Bella Lana

CASE STUDY: Scott and Anna Brien, Bella Lana

LOCATION: Wellington, NSW

Summary

Individual animal performance measures were collected prior to and at the 2016 shearing for 990 Hoggets in the Bella Lana Flock. Prior to data collection, a number of hoggets were visually classed out due to obvious wool or structural issues. These animals did not have performance data collected.

Given that visual classing occurred to remove obvious culls, prior to performance measurement, this case study shows a conservative impact of the value of individual animal identification.

For each ewe hogget remaining the information collected was used to generate a Rampower Index Value and Ranking. This information was used to aid selection of replacement ewes for the flock.

The weighted average value (carcase and wool) of all kept ewe hoggets was $189/head which was $10/head more than the sold hoggets (5%) and $4/head (2%) more than the average of the whole hogget flock prior to selection.

Taking the purchase price of the technology into account ($7850) this case study shows the investment into eID will pay itself back in less than three years on the hogget shearing alone. As this case study shows, the suite of eID technology used will add $2852 to profit after the first shearing.

Further, the eID technology will provide additional value throughout the year by recording liveweight, condition score and pregnancy status information to support management and wellbeing of lambing ewes. The long-term cumulative benefits of selecting more productive replacement ewes and increasing genetic gain are an additional benefit that eID technology will provide and reduce the payback period.

Background

1. Laying a strong production base: Pastures:

The Bella Lana merino stud and commercial sheep operation runs on “Birrell Vale”, which is located 16km south of Wellington, NSW. The home property consists of 1494 hectares of undulating hills and open valley and additional lease property of 700 ha. There is a mix of native and improved pastures, and some grazing cereals. On “Birrell Vale”, the sole focus is a Merino sheep operation, consisting of 800 stud ewes and 1800 commercial ewes.

Ewe and wether hoggets are run on 700 ha of leased country. Stock are rotationally grazed for ease of management and to bolster pasture and soil health. Both the stud and commercial flocks are run together as one flock - except for the periods of joining and lambing. Merino sheep suit the country and are a passion of the Brien Family.

Bella Lana is very much a family-based enterprise where Scott and Anna Brien work with their daughters, Sarah, Jane and Hannah, who enjoy hands-on involvement in the running of the sheep in between study commitments.

2. Breeding Objectives

The Brien’s aim to produce sheep that are plain-bodied, fertile, and require minimum care. Sheep that will produce good quantities of quality wool and meat - without fuss.

Their specific breeding objectives for their merino sheep are:

- Shear every 6 months for:
  - 4kg average wool cut
  - 70 mm average wool staple length
  - Average 19 micron
- Wean 130% of lambs to ewes joined
- Sale of wether lambs at 6-9 months at 18-20 kg dressed weight
- No flystrike, non-mulesed, plain bodied and easy care sheep.

For some time they have been breeding and selecting rams using Australian Sheep Breeding Values that are positive for growth, fat and muscle and believe the selection of rams for higher fat content has had a positive effect on lamb survivability and ewe fertility. By selecting for positive growth over time, they are able to turn off heavier lambs at an earlier age.

Equally as important is the selection of ewes. Once ewes have entered the breeding flock additional selection has been based on the ability to raise a lamb and resistance to flystrike without mulesing. Over a five year period lambing has been lifted from 100 to 130%.

Average micron has been reduced to a flock average of 19.1, and wool cut increased to average 7kg a head on an annual basis.

3. Focussing on Production via individual measurement:

Mark Gardner, Vanguard Business Services Dubbo, is a Farm Management Consultant who works with the Brien's. Together they investigated the possibility of using Electronic Identification (eID) to identify the high and low performers in the flock ewes, in order to improve the profitability of the overall flock.

The case study below outlines the process that the Brien's went through to examine the costs and the benefits of investing in eID technology.

Step 1: Breeding objective and working out what to measure:

The Brien's spent some time writing down the breeding objective for their flock.

Having discussed and written down a breeding objective, it was obvious that they would need to measure fleece weight, staple length and strength, micron, pregnancy scanning and body weight. They then investigated the best time to measure this information, and researched the best device in order to measure these parameters.

Step 2: Deciding on the Devices:

This step can be confusing. The marketplace is crowded with device choice, with many brands, options and combinations possible.

For the Brien's the choices were made easier by considering:

1. What needs to be measured and why (Breeding Objective)
2. Buying devices that were "entry level" rather than advanced
3. Buying technology that is known to "talk" to the other devices which are being purchased
4. Deciding on software which is easy to use, talks to all devices, and is well supported.

This was a real challenge and is likely to provide a significant barrier to entry for many growers.

Keeping it simple and knowing what you want to measure may help to make it easier.

Step 3: Purchasing the technology:

The choice of products is an individual case by case decision. In the Brien's case they decided to purchase:

1. Koolcollect Software (Sapien)
2. Trutest ID 5000 Indicator Box and Trutest Scales
3. Shearwell Stick reader and
4. Bluetooth Printer and Barcode reader

The capital outlay for the above was some $7850. Shearwell wrap around individual eID (RFID) tags were used and are included in the above.

Even given the research which was undertaken, there were significant issues getting all devices to "talk" to each other and integrate, and significant use of the help desk of each supplier was made. This time must be factored into purchase decisions and should not be underestimated.

Step 4: Gathering information

Shearing took place in late February 2016 at which time each individual hogget was identified via their eID ear tag. Scott and Anna Brien shore a total of 966 ewe hoggets, a wide range of wool measurements were collected including micron, micron CV, and micron SD, and gross fleece weight. Body weights were recorded. It should be noted that some hoggets were visually culled prior to shearing, and hence measurements were not taken from these animals. An additional labour unit was used in the shed to assist data collection, and this has been costed at 30 c/hd. This cost has been factored into calculations. Some sheds may not need additional labour, depending on the number of shearers, shed layout and level of skill with the technology.

Step 5: Using a Selection Index:

Information collected from each individual animal was fed into the Rampower Merino Production Index to give a value and rank given for each ewe hogget. This service is provided through Sheep Genetics and can be accessed through a web portal once you have a registered log in, or a genetics service provider can undertake this job for you.

Individual animals were ranked on key economic traits, and the required number of culls was identified and a draft list, identifying the required number of lower economic performers, was created. These animals were then drafted post shearing and sold. Scott and Anna were left with a total of 713 retained ewe hoggets.

4. Results from the Selection Process: Hogget selection

Individual animals were valued based on the mob they were drafted into following classing. These mobs were Stud, Flock and surplus. Fleece values were assigned across all hoggets based on the clips' greasy average wool price/kilogram achieved at wool sale time soon after shearing, and livestock meat value was applied using the price achieved for the culls when sold in February 2016.

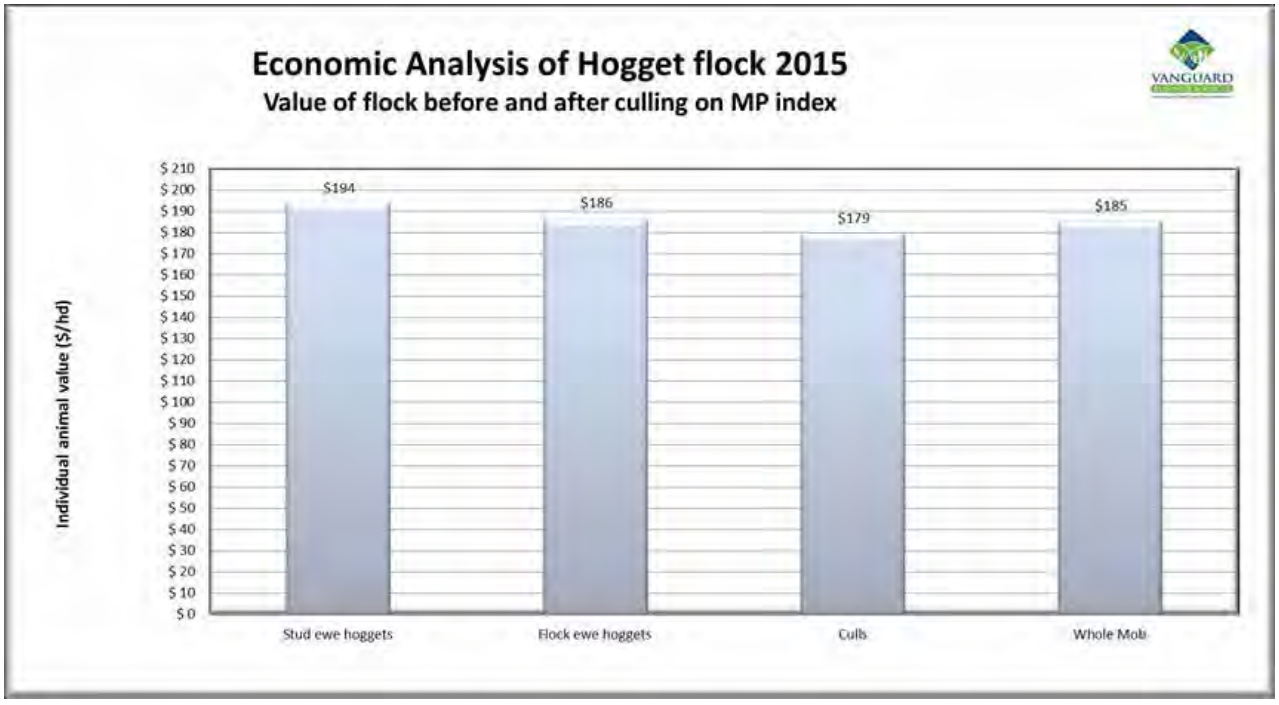
The value of each individual animal has been calculated, being the total of the fleece value and the meat value. Additional labour has been factored in at $0.30/hd and cost of micron testing at $1.30/hd.

A summary of the value of the hogget drop, after selection is as follows:

MOB DESCRIPTION:	STUD EWE HOGGETS	FLOCK EWE HOGGETS	SURPLUS HOGGETTS	ALL HOGGETS PRIOR TO SELECTION
Total Value/head meat and wool ($)	$194	$186	$179	$185
Ave Value Hoggets Kept ($)	$189			

The weighted average value (meat and wool) of all kept ewe hoggets was $189/head which was $10/head more than the surplus hoggets (5%) and $4/head (2%) more than the average of the whole hogget flock prior to selection. It should be reinforced that obvious culls had been removed prior to measurement.

Graph1: The value of the hogget drop, after selection, is as follows:



Summary

The increased value of retained animals over those sold of $10/head means that the Hoggets kept were 5% higher in value than those sold and were 2% higher value than the whole drop prior to selection.

5. Breakeven Analysis: Cost of technology vs Returns:

The value added per head from the individual animal performance selection was $4/hd. When taking into account the size of the hogget flock, the below table summarises the overall impact of the measurement based selection:

Table 1: Return on Capital from Technology Purchase and breakeven timeframe.

	$
Change in Flock Value ($4/hd x 713) The additional value of the retained hoggets over the average of all hoggets multiplied by the number of retained hoggets	$ 2 852
Cost of technology purchase ($) *This is the actual cost of the technology, tags and includes one year's interest.	-$ 7,850
Return on debt	36%
Years to Break Even Does not include any additional use of the technology through the year.	Less than 3 years

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