



# Ovine Observer

Newsletter of the Department of Agriculture and Food, Western Australia (DAFWA)

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## Lamb Survival Initiative

Katherine Davies, DAFWA, Northam

Just over 6 per cent of Western Australian (WA) Merino and sheep producers and 9% of dedicated prime lamb producers achieve marking rates of over 100%. This means that less than 500 producers in WA achieve 100%+ lamb marking in any given year.

The Lamb Survival Initiative, through involvement with regional grower groups, aims to provide support for producers to achieve 100%+ by providing training and support, encouraging producers to set achievable targets and benchmarking their marking rates against others in similar regions and across the state.

In order to build producer confidence and skills to lift marking rates to 100%+ we encourage them to:

- undertake pregnancy scanning for multiples on a significant proportion of their adult ewes
- record and submit data on the reproductive rate, marking rate and weaning rate achieved in the scanned ewe flock/s for benchmarking against other producers
- attend at least one training course or workshop which focuses on reproduction
- work closely with industry professional on issues with the reproduction rates of their flock.

Last year, 2015, was the first year of the Lamb Survival Initiative involving five grower groups spread throughout the southern region of WA. These groups included Facey Group (Wickepin), West Arthur Trials Group (Darkan), Southern DIRT (Kojonup), the Gillamii Centre (Cranbrook) and ASHEEP (Esperance), with a total of 33 grower participants.

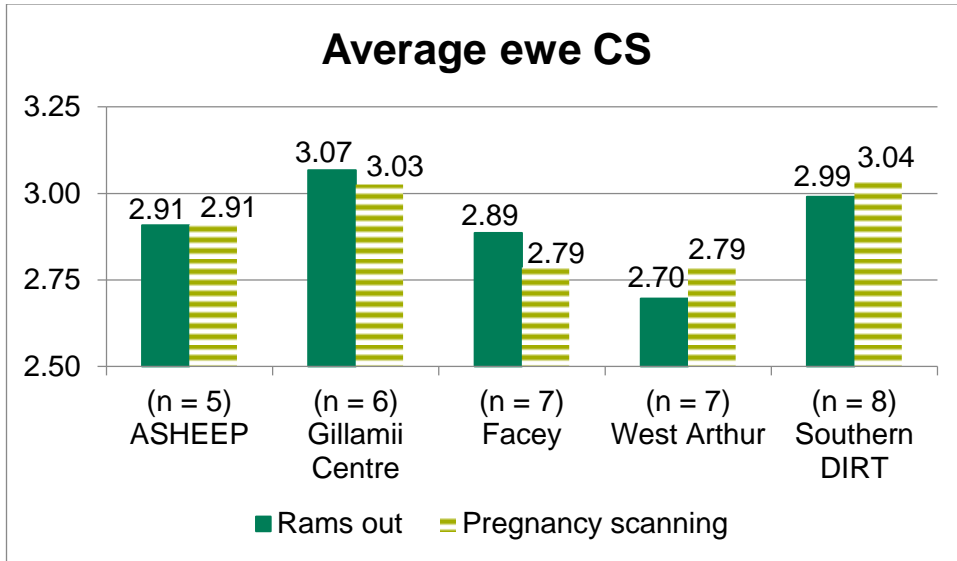
Lifetime Ewe Management accredited facilitators Ed Riggall and Joe Young were selected by the groups to provide in-depth information on reproduction. Facilitators met either on-farm with each producer or organised group meetings to go through issues such as condition scoring, feed budgeting and husbandry practices for increasing lamb survival.

Information collected around the reproductive cycle included:

- ewe [condition score](#) at rams out and pregnancy scanning
- scanning rate (number of lambs scanned per 100 ewes joined)
- marking rate (number of lambs marked per 100 ewes joined)
- weaning rate (number of lambs weaned per 100 ewes joined)
- weaning weights (where facilities available)
- [Feed on Offer \(FOO\)](#) at lambing and details of supplementary feeding.

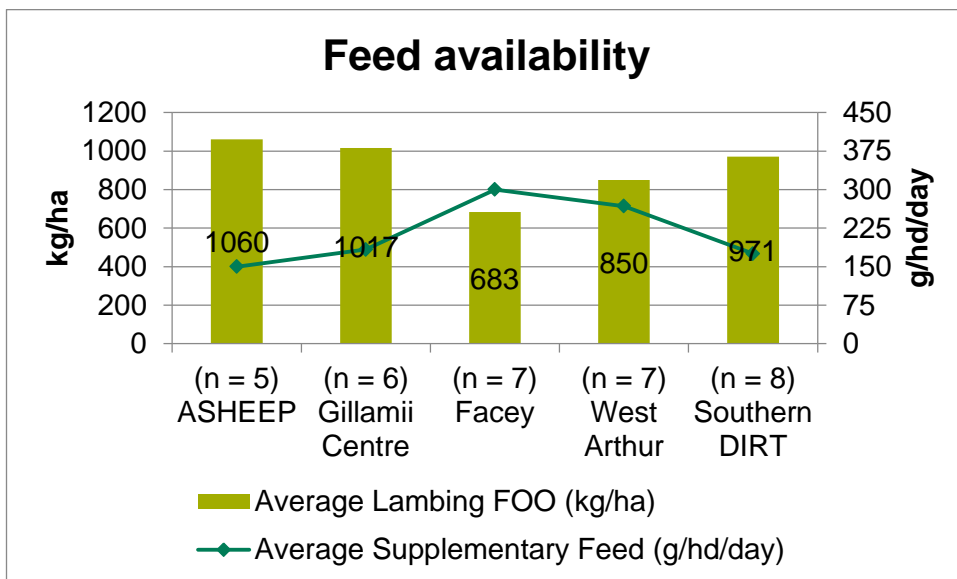
Collection of this information enabled producers to gain valuable understanding on where lambs were being lost throughout the reproductive cycle.

As shown in figure 1, ASHEEP maintained its average condition score (CS) between rams out and pregnancy scanning, while Gillamii Centre and Facey Group decreased very slightly and West Arthur and Southern DIRT increased very slightly.



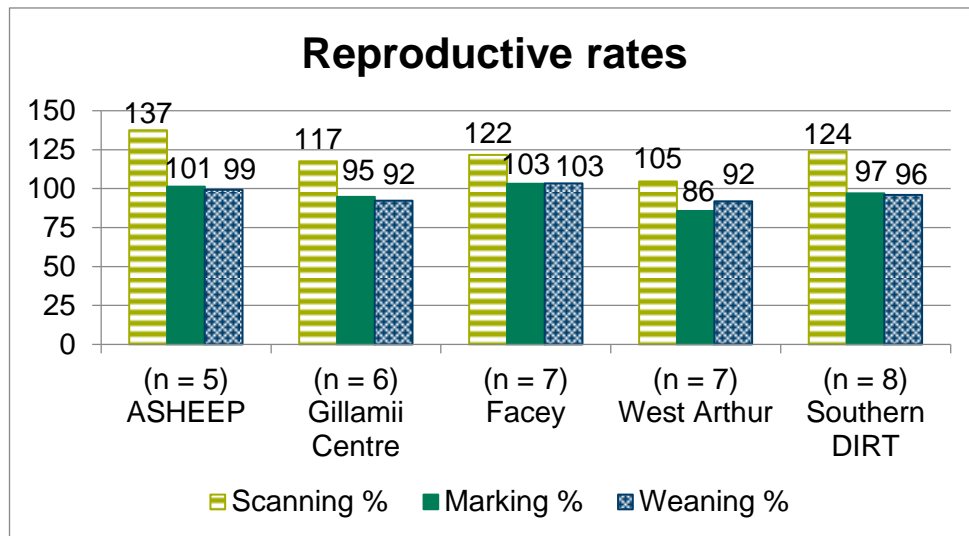
**Figure 1 Difference in condition score (CS) between rams out and pregnancy scanning in 2015**

FOO was an issue in the Facey Group and West Arthur areas in 2015, with both Wickepin and Darkan receiving only decile 1 rainfall for the 2015 growing season. Figure 2 shows that in areas where paddock feed availability were low; ewes were supplemented with larger amounts of feed, mostly in the form of barley, lupins, hay and pellets.



**Figure 2 FOO and supplementary feeding amounts. Key: kilograms per hectare (kg/ha), grams per head per day (g/hd/day).**

Reproductive rates included the number of lambs scanned, marked and weaned per 100 ewes joined (figure 3). You can see that the greatest lamb loss for each group occurred between pregnancy scanning and lamb marking. This mortality may be either in-utero, during the birthing process or in the first 72 hours of life, where it has been found that 80% of lamb mortality occurs. Please note that the West Arthur group had incomplete data for weaning, therefore the average weaning rate for the group is higher, but otherwise would have been expected to follow the same trend as the other groups.

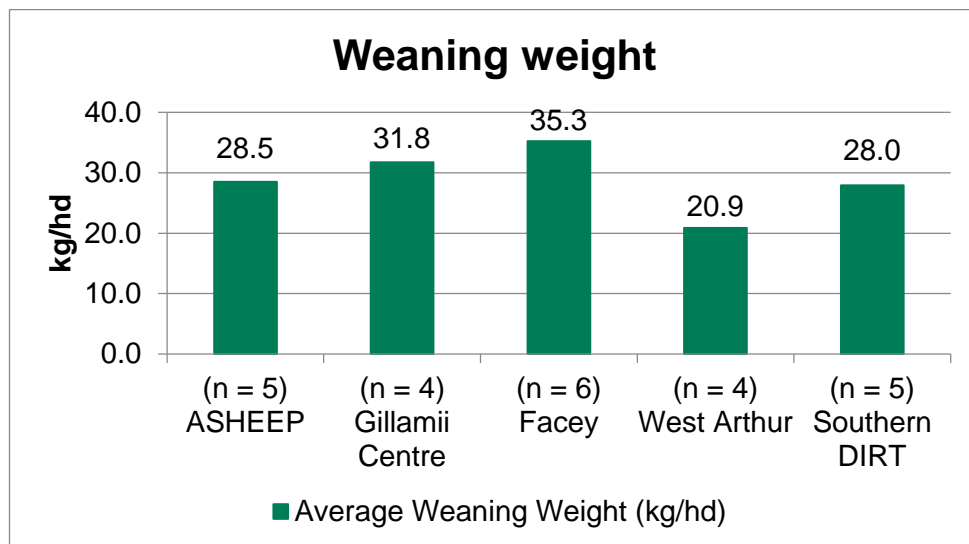


**Figure 3 Change in reproductive rates from pregnancy scanning to lamb marking and weaning. Note: West Arthur weaning data was incomplete**

There are many strategies that can be put in place to increase lamb survival including monitoring the condition score of ewes, scanning for multiples foetuses and preferentially feeding twin bearing ewes, as well as providing shelter and limiting mob size at lambing.

Further information on increasing lamb survival can be found in the [September 2015 edition of Ovine Observer](#) or on the [DAFWA website](#).

While not all producers involved in the project had access to scales, weaning weights were collected by many of the participants with the results shown in figure 4.



**Figure 4 Average weaning weight of lambs for 2015**

Feedback from producers in the initiative indicated that further extension of information around weaner management as well as pasture production and management were highly desirable. In 2016, information will also be collected on the number of twins and singles conceived, marked and weaned in order to gain a greater understanding of lamb losses for single and twin born lambs.

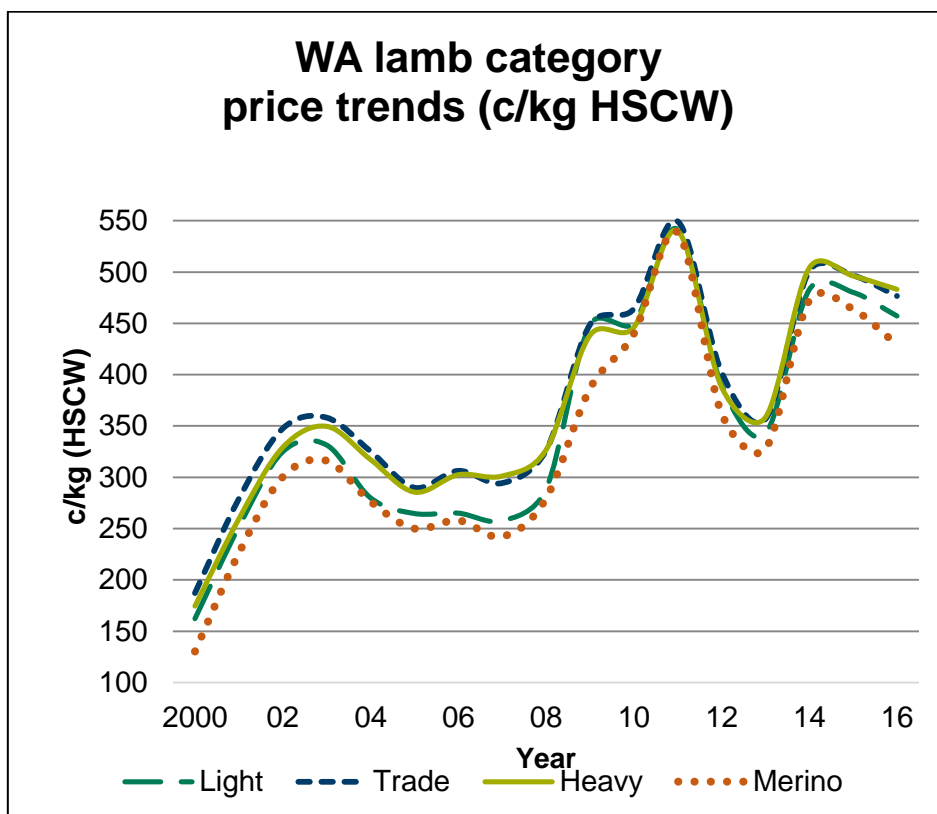
If you would like to be involved in the 2016 season of the Lamb Survival Initiative, please contact Katherine Davies, Sheep Industry Development Officer, Northam on +61 (0)8 9690 2169 or [katherine.davies@agric.wa.gov.au](mailto:katherine.davies@agric.wa.gov.au).

## Feedlotting cost analysis

Geoff Duddy, Sheep Solutions, Leeton (New South Wales), +61 (0)427 007 490  
geoff@sheepsolutions.com.au

Seasonal conditions, supply patterns and market anomalies all have major impacts on prime lamb profitability. These issues, the role and development of lamb supply alliances and the cost/benefits when finishing merino and prime lambs within a feedlot were recently discussed during a series of DAFWA-coordinated workshops earlier this month.

Figure 5 shows Merino, store, trade and export lamb average monthly values for Western Australia since 2000. Note the price of store lambs relative to finished lamb categories. Since 2010 we have seen a general trending for store lamb values to trade at or above finished lamb categories – impacting on feedlotting risk and profit margins.



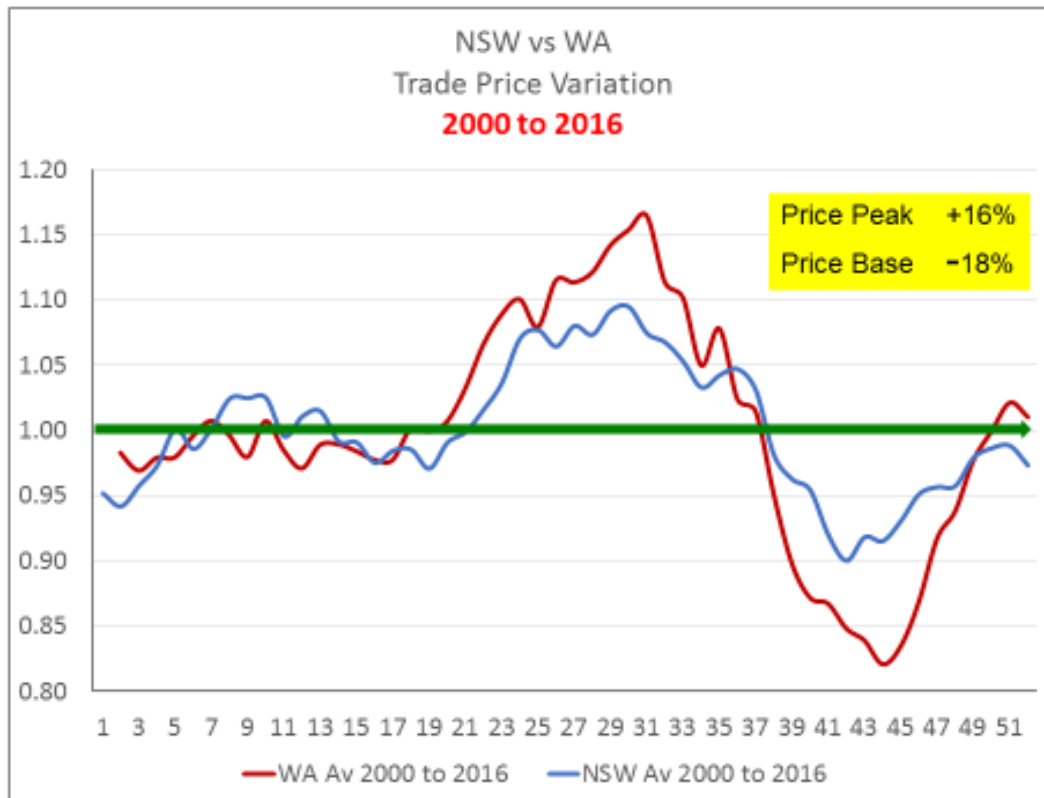
**Figure 5 WA lamb price trends (2000-2016).**

**Key:** cents per kilogram (c/kg), hot standard carcass weight (HSCW)

While producers seldom have any control over lamb prices, supply patterns and the trading environment faced by processors, they do have flexibility in terms of their marketing options. You can elect to market your lambs as light/shippers, bagged Muslim Kill (MK) through to heavy export weight carcasses. The most profitable and lowest risk option(s) will vary and are heavily influenced by current and predicted price patterns, seasonal conditions and/or input costs if electing to finish lambs to heavier weights.

By cross referencing lamb supply and price variation (around an annual average) it is possible to identify periods where 'above' average prices are likely to occur. This can help with marketing decision making.

If we look at long term average prices, it is possible to pinpoint times when lamb returns are higher relative to annual average values (Figure 6 below). These are not profit margins and you must take into account additional costs if feeding lambs to heavier weights.



**Figure 6 New South Wales vs WA trade lamb prices relative to annual (calendar year) prices for the period 2000-2016**

Both New South Wales (NSW) and Western Australia have similar price trends, peaks (February/May through to late August) and troughs (October/November). Western Australia has a greater peak (+16%) and trough (-18%) relative to the annual average price for trade lambs across the calendar year.

Most lambs supplied during autumn/winter months will have additional finishing costs and price for the finished product is a critical factor determining profit margin. Most feedlot operations, unless processor owned or contracted, will cease operations during the September-November period when demand and prices swing sharply towards the sucker lamb.

Interestingly, within NSW, we have seen changes over recent years with lower relative prices in late November/December. This suggests that many eastern state producers now elect to off-load lambs as stores pre-Christmas rather than carry them over the summer period.

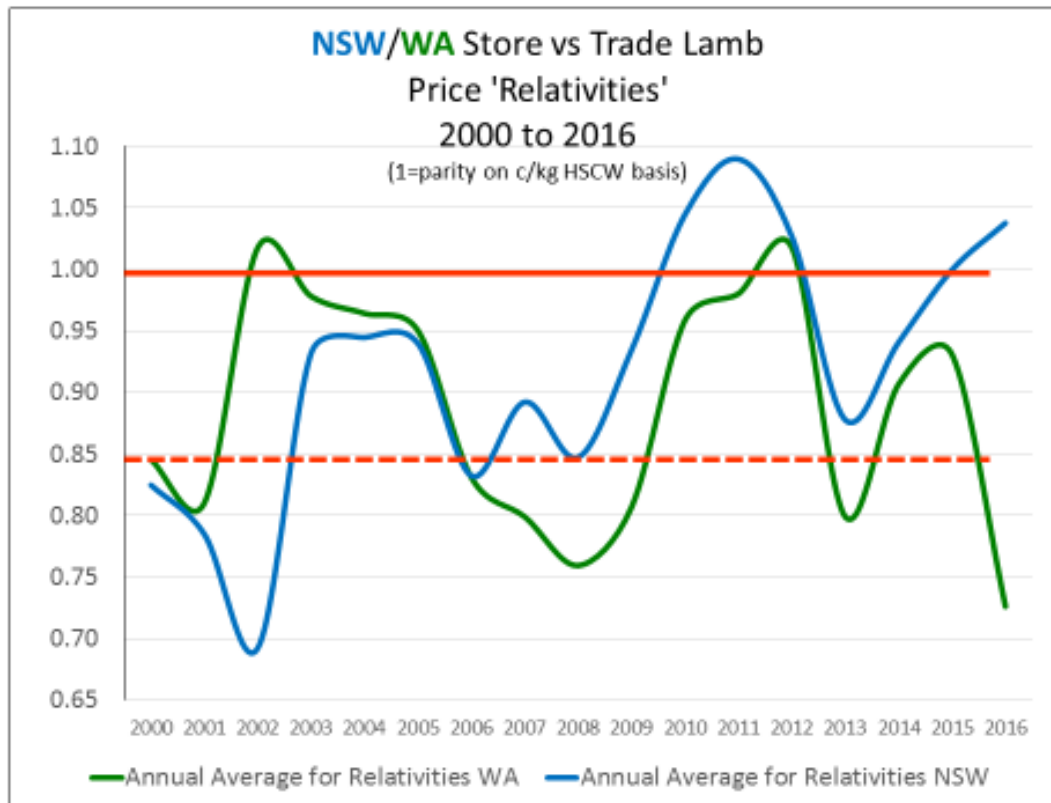
In off-loading early, are these producers better off? In many circumstances the answer is yes!

A reduced breeding flock, interest in opportunistic feeding and several years of strong returns for sheepmeat producers continues to keep store lamb values high relative to finished trade lamb values. Often the greatest profit to be made occurs at store lamb sale when input costs are at a minimum!

What if you want to finish your own or purchased lambs in a feedlot?

The starting value (whether home-bred or bought-in) of lambs entering a feedlot is the major cost that producers face. Availability and cost of store lambs (17-18kg HSCW) heavily influence profit margins and producers are continually urged to 'do their sums'.

Figure 7 illustrates the value (c/kg) of NSW and WA store lambs relative to trade weight lamb values 6 weeks later (to simulate prices received for 22+ kg trade weight lambs 6 weeks after buying and finishing 17-18kg store lambs). Note that store lamb values relative to trade lambs in NSW declined from November 2011 through to December 2012 but have then risen steadily to where they currently sit at, or near, finished trade lamb values. Western Australian store lamb values however, relative to trade lamb values 6 weeks later, have dropped off significantly during the early months of 2016



**Figure 7 Eastern states store vs trade lamb relative prices (1998-2015)**

So what does this all mean??

Despite the high trade lamb prices received in recent years, high store lamb prices (relative to trade values) have made feedlotting reasonably risky. In my opinion, store lamb values within NSW need to be trading at or below 85% that of the finished trade lamb value to minimise risk and allow reasonable profit margins to be achieved. For example:

- A 17kg store lamb, \$90 landed on-farm has a c/kg value (with skin included) of 529c/kg ( $\$90/17 = 529\text{c/kg}$ ).
- A 23kg trade lamb, \$145 (gross) when sold= 630c/kg ( $\$145/23 = 630\text{c/kg}$ ).
- The store lambs value relative to the finished trade lambs value is 529/630 or 84%.

Despite a \$55 range in lamb values pre and post feeding under current feed and management costs this is little more than break even!!

Given the decline in store lamb values relative to trade lamb prices within Western Australia I expected there to be a greater probability of reasonable profits compared to NSW feedlot systems. Unfortunately, this is not the case due to a number of factors. These include:

- a drop off in finished lamb values in late February/March
- high prices paid for shipper/light weight lambs (keeping store lamb prices high)
- high ration costs compared to current NSW feedlot ration costs.

So where to from here?

1. Buckle up and go with the ride – hoping for a quick turnaround in finished lamb prices – unfortunately this is seldom the case as shown in Figure 6.
2. Supplement light lambs till meeting minimum weights for shippers/light lamb categories.
3. Off-load lambs now and hope for the best.



## Technology to improve labour efficiency of providing stock water

John Paul Collins, DAFWA, Katanning

Many properties rely on a network of tanks and troughs to provide stock water. In some areas there has been an investment into production bores to ensure there is sufficient water for livestock. This relies on the need for water to be pumped into tanks at an elevated location, and then reticulated out to troughs in paddocks. Checking and maintaining tanks and troughs is a labour-hungry process and sheep producers should look at options to improve their labour efficiency.



### Wireless tank sensors and display units

A basic kit consisting of a wireless water tank sensor (solar powered) and a display unit are available for around \$500. The water tank sensor consists of a pressure sensor on the end of a cable which is suspended at the base of a tank and a sensor in the unit which sits over the tank. The user manually enters the tank height and the water level is determined based on the pressure difference between the sensors.

The tank level and usage trends can be determined from a display unit kept at home. The display unit needs to be

line-of-sight from the tank sensor and can operate up to 4km from the tank. However this range can be extended by using long-range antennae.

A pump controller can also be added for around \$300. This is plugged between the mains power and an electric pump and is wirelessly connected to the display unit. This allows the user to remotely switch the pump on to fill the tank when the water level drops.

### Remote monitoring cameras

Where sheep are being run over multiple properties, remote monitoring cameras on water troughs are a handy tool. Using the NextG network, remote cameras allow the user to remotely monitor a number of troughs over the internet by logging in with a secure username and password. The cameras can be set to take regular photos on a schedule or on motion detection. Some cameras depend on a reliable NextG signal and if this is not available then using a satellite network would need to be explored.

The key benefit is saving time to regularly inspect a trough and having peace of mind that stock always have water. Remote cameras with a solar panel and stand can be purchased for around \$1500.

There are also commercial systems available where you can integrate information provided by tank sensors, in-line flow rate sensors and cameras and then remotely monitor all this information through the internet. However with extra functionality and information, the cost would increase.

### Further information

Further information on specific products and the latest technology available can be obtained by visiting [Sheep Easy](#) field days run through the [Sheep's Back](#) program. Also talk to your local rural merchandise outlet about specific products they can source.

## Case Study – Australian Sheep Breeding Values with Lynley Anderson

**Property:** 'Brookvale', 20km north west of Kojonup

**Property size:** 2250ha (owned and leased)

**Owners:** Lynley Anderson (owner/manager) and parents Alan and Wendy

**Average annual rainfall:** 460ml

**Stock:** 4500-5000hd Merino ewes, 120 Poll Dorset ewes, wethers are sold as weaners

**Stocking rate:** 11-12 dry sheep equivalents (DSE)

**Crop:** 850ha canola, barley, oats, wheat

**Pasture:** 900ha improved pasture including fodder crops and perennial pastures

A 40 year commitment to objective measurement over two generations has led to high performance sheep across a range of wool, meat and other traits.

Kojonup producer Lynley Anderson has followed in father Alan's footsteps by embracing Australian Sheep Breeding Values (ASBVs) to determine an animal's true breeding value, based on pedigree and performance recordings.

Alan was a pioneer of objective measurement in the 1960s, selecting rams based on clean fleece weight, fibre diameter and body weight at a time when selection by visual assessment was the norm.

### ASBV adoption

By the turn of the millennium, Lynley had come on board the operation.

Despite the advances in key traits across their flock, the Andersons became concerned their selection strategy was "discounting" the potential of progeny from maiden ewes and twin bearers because they were lighter and cut less.

In 2002 the Andersons jumped at the chance to contribute to a pilot project for Sheep Genetics Australia in the development of genetic breeding values.

"We could see great advantages in using genetics to select animals because it removed the environmental influences on an animal's appearance and its objective measurements." Ms Anderson said.

"We would be able to select the best rams regardless of the circumstances of their birth or upbringing.

"It was also a great opportunity to be able to breed for other traits like worm resistance, fast early growth and a meatier carcass which would enable us to turn off our wether lambs earlier."

### Worm resistant sheep

At this time the Andersons decided to focus their breeding objective on producing low maintenance sheep and started selecting for sheep with low faecal worm egg counts.

"It was clear that the effectiveness of drenches was fast declining and that any new drenches were going to be expensive so we wanted to do away with drenching altogether," Ms Anderson said.

To assist the process, the Andersons sourced semen from DAFWA's Rylington Merino Flock, which was dedicated to breeding sheep with resistance to worms.

The Andersons now have some of the most worm resistant sheep in the country, with many ranking in the top 1 per cent in the Merinoselect database for this trait.

The Andersons haven't drenched their adult sheep for six years and only about 10 per cent of weaners now require a drench.

Selecting for worm resistance is one trait Ms Anderson does not compromise on.

"An ASBV of minus fifty is my benchmark," she said. "When selecting rams there is always a compromise, as there is no such thing as a perfect ram, however, I won't compromise on the worm egg count as it can limit the overall performance of the animal."



## Figures

This discipline is at the heart of Ms Anderson's flock breeding objective: to produce robust, productive, low maintenance and fertile sheep.

The objective is achieved through a nucleus flock of 450-500 Merino ewes and 120 Poll Dorset ewes.

More than 50 visual and objective traits are measured and recorded on each animal from birth to hogget age to refine selection and provide accurate ASBVs for each sheep.

Objective measurements include clean fleece weight, fibre diameter, coefficient of fibre diameter, comfort factor, staple strength, worm egg count, eye muscle depth, carcass fat, birth weight and growth rates.

The visual traits assessed include body and breech wrinkle, wool colour, face cover, dags and temperament.

Merinoselect records (see above) from 2003-13 show the flock's clean fleece weight has increased 9 per cent per head, while maintaining fibre diameter and decreasing fibre diameter coefficient of variation.

Of the meat traits, the average yearling weight has improved by 4kg and eye muscle depth has improved by 5 millimetres, making the flock genetically more muscular and fatter and more robust.

The average dual purpose index value of the flock is now 170 units, which is nearly 32 index points higher than the Merino ram breeding industry, and about 34 index points higher than it was 10 years ago.

## Record benefit

Lambs are tagged at birth in order to record their pedigree, birth weight, birth date and whether they are born singles or twins.

While lambing is a busy time, for Ms Anderson, a former midwife, it is a labour of love.

"It is a great job," she said. "Although I do wish it took a little less time but I enjoy seeing the ewes being so protective of their lambs."

The Anderson's rams now regularly feature in the top Merinoselect dual purpose plus index rankings, although Ms Anderson said they were always striving for improvement.

"It's about making progress in the profitability traits for wool, meat and fertility, but still keeping a balanced animal that is easy care and worm resistant," she said.

"Using ASBVs takes the guess work out of knowing how your progeny will perform and gives you the confidence that your breeding objective is always progressing forwards."

While the Andersons found it difficult to quantify the financial gain of using ASBVs, Ms Anderson said the benefit was undeniable.

"As a result we're running more stock, our lambing percentage has increased, we rarely drench and sheep maintain condition much more easily," Ms Anderson said.

## Sire evaluation trial

Last year the Andersons contributed a ram to the Department of Agriculture and Food's renewed Yardstick sire evaluation trial.

A total of 11 rams from Western Australia Merino studs and another two from the Eastern States are participating in the benchmarking initiative, supported by the Federation of Performance Sheep Breeders (WA) and consultants Icon Agriculture.

Department development officer Meghan Cornelius is coordinating the trial, as part of her role to raise awareness and adoption of ASBVs in Western Australia.

"ASBVs can be very confusing to the uninitiated, as there is so much information to take into account," Ms Cornelius said.

"We have held workshops to assist ram buyers with using ASBVs and workshops for breeders to assist with data quality, data management and specific software programs.



**Figure 8 DAFWA Development Officer Meghan Cornelius with Lynley Anderson**

Flock, as part of a national Sheep Cooperative Research Centre project funded by Meat and Livestock Australia to refine meat quality and sheep wellbeing traits.

“While these traits are heritable and can be measured, they are comprised of multiple traits that are correlated to other traits,” he said.

“The challenge is to improve growth rates without compromising on meat quality.”

The project is working towards refining ASBVs for meat tenderness, growth rates, fat content and weight changes, while other research is investigating immunological resilience and performance.

More information about [ASBVs](#) is available on the DAFWA website or visit [sheepgenetics.org.au](http://sheepgenetics.org.au). For more information about the Merino Sire Evaluation project contact [meghan.cornelius@agric.wa.gov.au](mailto:meghan.cornelius@agric.wa.gov.au) or call +61 (0)8 9821 3250.

“Department staff can also work with individual producers to assist them to better understand the system and how to use it.”

The two year trial, supported by industry and the Royalties for Regions-funded Sheep Industry Business Innovation project, with assistance from Australian Wool Innovation, is expected to yield data that will be accessible to producers later in 2016.

### Sheep genetics research

Ms Cornelius also works closely with senior research officer Johan Greeff to provide producers with an insight into new ASBV traits.

Dr Greeff works with the former national Information Nucleus Flock, now known as the Genetic Resource

## DAFWA feedlotting workshop success

Steve Tunbridge, DAFWA, Katanning

Earlier this month the department hosted a series of free feedlotting workshops in Darkan, York and Merredin for those in industry keen to explore the value behind feedlotting, opportunities to expand production and develop a new dedicated feedlot.

Almost 70 attendees, including producers, stock agents, agribusiness and government representatives came to hear from DAFWA sheep experts as well as guest speaker Geoff Duddy.

Geoff, of Sheep Solutions (New South Wales), is a nationally recognised specialist in feedlotting and was the developer of the Sheep CRC’s lamb feedlot calculator.



**Figure 9 Geoff Duddy presents on the value of feedlotting**

Geoff was also guest speaker at the ASHEEP autumn sheep field day at Esperance, which included a tour of three different feedlot systems of varying sizes and complexities.

The DAFWA-sponsored workshops explored feedlot design and systems, management and welfare issues, nutrition and energy requirements, price trends and how to use the feedlot calculator.

Workshop feedback showed that participants all benefited from the workshop, whether they improved their knowledge and understanding of basic sheep nutrition or felt equipped make some change on the farm in regards to sheep feeding.

These workshops were offered to participants at no cost, and were funded by the [Sheep Industry Business Innovation](#) project (Royalties for Regions).

Feedlotting was explored as one of the potential options for sheep business expansion in DAFWA's report '[Concepts for alternative investment and financing models to expand sheep production in WA](#)' – click through to download a copy.

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## Satellite technology delivers online farm management

Landgate

Website: <https://pfs.landgate.wa.gov.au/>

Cutting-edge technology is set to save farmers time and money by helping them monitor and manage their properties from a computer or mobile device.

The online tool Pastures from Space Plus (PfS Plus) was officially launched by Lands Minister Terry Redman at Wagin Woolorama earlier this month.

PfS Plus is the new and improved version of Landgate's Pastures from Space, which was developed in association with DAFWA and the Commonwealth Scientific and Industrial Research Organisation (CSIRO). Landgate worked with farmers and agronomists to redevelop the online monitoring tool to more closely meet industry needs.

PfS Plus uses high-resolution satellite imagery and climate data from the Bureau of Meteorology to deliver near-real time, paddock-level information that will assist farmers in tactical and strategic decision making.

PfS Plus gives farmers access to two different satellite platforms – the weekly composite collected on a daily basis at 250 metres ground resolution, or the higher 30 metres resolution imagery, updated every 16 days. The service is compatible with Apple, Android and Windows mobile devices (tablets).

The service provides a vegetation health index (NDVI), weekly Pasture Growth Rate (PGR) estimates during the growing season, as well as estimates of available pasture (Feed on Offer) and total dry matter. With a stocking rate calculator and charting tools that have historic information dating back to 2004, farmers can prepare customised charts and calculations in a few minutes to assist with feed budgeting, stocking rates and fertiliser application.

Trialled by registered participants since August, a recent survey conducted with these users found that 94 per cent agreed or strongly agreed that PfS Plus would increase efficiencies in their business. The results also showed that 87 per cent of the trial users would recommend PfS Plus to other farmers.

The aim is for farmers to get more productivity out of their properties and ensure Western Australia remains a high end producer on the world stage.

Learn more about [PfS Plus](#).



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