Filling Feed Gaps 2023

Background

Knowing the nutritional value of supplementary feeds (hay, silage or grains) can save you money and time. Before you simply just feed out the hay or silage or run out a trail of grain, you **must** test the feed quality of your fodder, so you know exactly how much, and what, you are feeding.

For example, a barley with metabolisable energy (ME) content of 13.5 MJ ME/kg dm compared to a barley with a ME of 13 could save you $3,000 in feed costs for a 4000 ewe flock if you are paying the same $/tonne price. The savings may even be greater as the ME of barley can be as low as 12.2 and as high as 13.7 MJ ME/kg dm.

It is also important to know the ME content of your supplements so that you can maintain stock at the right condition score for joining and during pregnancy. You will feed much less kg/day of a high ME fodder compared to fodder with even a slightly lower ME and if you feed the same, you are either putting excess condition on your ewes or letting them slip, depending on the ME content of the supplement.

Wastage is also much less with high ME hay or silage compared to low ME hay or silage. Wastage of poor quality hay may be upto 30-50% compared to 10-15% for high quality hay.

A feed test for protein content is also important for weaner survival over summer.

A feed test to calculate the moisture content is essential to accurately calculate how much to feed for wet feeds such as silage.

Feed testing can help you to calculate an accurate feed budget, is cheap compared to the cost of making or buying fodder and is quick and easy to do. A feed test will provide a much clearer picture of the actual value of your feed and how many kg to feed out.

What was done?
AgKI, in conjunction with Mackillop Farm Management Group and the Future Drought Program, secured funding to run a ‘Filling the Feed Gaps’ project.

The project was run over two years (2022 and 2023) and included a series of workshops on how to manage a supplementary feed program to maximise stock performance and minimise costs, how to manage pasture and sown pasture mixes to make the best hay/silage and the best time to cut hay or silage.

In addition, a subsidy on the cost of feed tests for hay and silage was offered.

Results
A report of the 2022 results was published in the 2023 AgKI Trials booklet.

Table 1 summary of 2022 and 2023 hay and silage feed tests.

all tested by Feed Test Werribee				hay and silage	
Hay	**2022 62 samples**	**2023 22 samples**		**Ideal for dry/early to mid pregnant ewes**	**Ideal for merino weaner lambs**
ME average	8.3	9.5		min 8.7	min 10.0
(range)	5.8 to 11.7	7.1 to 11.7			
Digestibility average	58%	65%		min 60%	min 68%
(range)	43% to 78%	521% to 78%			
Neutral detergent fibre (NDF) average	61%	53%		max 60%	max 55%
Crude protein average	10%	11%		min 8-10%	min 12-14%
(range)	4% to 19%	4% to 17%			
moisture % average	14%	14%			
(range)	7% to 31%	7% to 24%			
silage	**2022 12 samples**	**2023 3 samples**		**Ideal for dry/early to mid pregnant ewes**	**Ideal for merino weaner lambs**
ME average	10.0	10.3		min 8.7	min 10.0
(range)	8.7 to 10.6	not applicable			
Digestibility average	65%	68%		min 60%	min 68%
(range)	56% to 70%	not applicable			
Neutral detergent fibre (NDF) average	52%	52%		max 60%	max 55%
Crude protein average	14%	16%		min 8-10%	min 12-14%
(range)	8% to 20%	not applicable			
moisture % average	59%	59%			
(range)	35% to 77%	not applicable			

There was a big improvement in hay feed test results in 2023 compared to 2022, undoubtedly assisted by the very dry spring in 2023 compared to the exceptionally wet spring in 2022. Only three silage samples were submitted for testing in 2023 so a meaningful comparison between years cannot be made for silage, nor were there enough silage samples submitted in 2023 to report a range of results.

Neutral Detergent Fibre levels from hay averaged a very credible 53% in 2023 compared to 61% in 2022 indicating time of cutting in 2023 was close to ideal, which is a very good result.

This resulted in hay with an average digestibility of 65% in 2023 and a ME of 9.5 MJ/kg dm which is a high-quality result compared to an average digestibility of 58% and a ME of 8.3 MJ/kg dm in 2022.

In 2023 the hay sample with the highest ME of 11.7 also contained the most water (24%) whilst the next highest ME hay sample (ME 10.8) contained 17% moisture. Both samples were also low NDF (43% and 38% respectively).

ME 11.7 is an exceptionally good result. Early cutting and minimal wilting time will result in high quality hay, provided you can manage excess moisture levels by

- Tedding
- Using hay preservatives or inoculants
- Baling into round bales to allow them to lose moisture, rather than high density square bales.
- Not stacking bales into a shed – let them dry outside.
- Monitoring internal bale temperatures and feeding out as soon as possible after baling

Whilst there was generally high-quality hay made in 2023, a few samples were also very poor. For example, a hay containing a ME of 7.1 and a NDF of 70%, was clearly cut far too late and/or contained a high % of mature annual grasses such as silver, brome or barley grass.

If presented with paddocks containing a high % of annual grasses such as silver, brome or barley grass, hay can be an expensive option if the ME is only 7.1 and NDF 70%. In addition, feeding this hay can result in the spread of grass seeds around the farm (if fed in the paddock)

In these situations, consider hay freezing or spray topping with either glyphosate or paraquat.

Silage feed test results in 2022 were much higher than for hay, due to earlier cutting and a shorter wilt, but wrapped silage is expensive per MJ ME, so good quality hay is the cheapest option in many cases. There were only 3 silage samples submitted in 2023, but they were all high quality with slightly higher ME than in 2022.

Take home messages.

- Feed testing is essential to know what you are actually feeding out to your stock, as well as facilitating continuous improvement in your fodder conservation program.
- Good quality hay can be made in both poor and good hay seasons on Kangaroo Island, as can poor quality hay.
- Good quality hay will always be cheaper than good quality silage per tonne dry matter (and c/MJ ME), but it may be easier to produce good quality silage in some years on Kangaroo Island.
- Early cutting and quick wilting are keys to high quality forage, along with clean paddocks with minimal capeweed and silver/brome or barley grasses.

Funding/Sponsors
Agriculture KI and Mackillop Farm Management Group with funding from Future Drought Fund

Further Information

Tim Prance, T Prance Rural Consulting
P 0427 812 655
E t.prance@prance.net.au

Lyn Dohle, PIRSA
P 0419 846 204
E lyn.dohle@sa.gov.au

ACKNOWLEDGEMENT

This project is supported by the South Australian Drought Resilience Adoption and Innovation Hub, through funding from the Australian Government's Future Drought Fund.



This program received funding from the Australian Government's Future Drought Fund

DISCLAIMER

Any recommendations, suggestions or opinions contained in these publications do not necessarily represent the policy or views of the South Australian Drought Resilience Adoption and Innovation Hub (SA Drought Hub). No person should act on the basis of the contents of these publications without first obtaining specific, independent, professional advice. The SA Drought Hub and contributors to these publications may identify products by proprietary or trade names to help readers identify particular types of products. The Hub does not endorse or recommend the products of any manufacturer referred to. Other products may perform as well as or better than those specifically referred to. The SA Drought Hub will not be liable for any loss, damage, cost or expense incurred or arising by reason of any person using or relying on the information in these publications.