

# FEED TROUGH

VOLUME 4



Your Levy at Work

SEPTEMBER 2017

## Feeding Pastures for Profit

*Dan Parnell, Agsure Consulting*

Western Dairy has run Feeding Pastures For Profit (FPFP) workshops in Scott River and Brunswick in 2017. The concepts covered in this course are crucial to successful pasture management. This is particularly the case this year with a poor start to the season for most WA dairy farms.

### KEY FPFP CONCEPTS

- Always fully feed your cows
- What feed resources are available to meet this demand and what is the relative cost?
- Offer the herd a consistent amount of pasture
- Establish a rotation based on leaf emergence rate (LER)
- The Rotation Right Tool can help to assist the rotation speed and consistency of feed
- Manage your residuals to 4-6cm
- Graze pastures at 2-3 leaf or canopy closure
- Make management decisions using the body of evidence tool
- Test your decisions

### LEARNINGS SO FAR- 2017

Always feed your livestock to your target liveweight and condition score. One way to consolidate a poor season for years to come is to compromise future reproductive capacity in cows and heifers by underfeeding.

It's great to use cheap pasture but if it is not available you need to invest in something else. The key risk early in the season is overgrazing residuals. This has been problematic this year with a late and often patchy pasture germination. Yes that cheap green grass is tempting. But unfortunately over grazing and shifting the tape and

giving the herd 'a bit extra' will slow pasture growth. This can create an 'out of control' situation where residuals will be overgrazed and areas will be grazed before 2-3 leaf. A classic downward spiral.

At the Brunswick workshop Victorian consultant Janet Sloan quoted 1tDM/ha/annum penalty for a single over grazing event below 4cm. Many have recognised this using the body of evidence tool and have had a very late transition to grass this year with high concentrate and forage diets persisting even now. This gives you control of the residuals and sets up the chance of a productive spring.



*Picture: 20 days post grazing – overgrazed residual below 4-6cm (right) -grazed to the ideal residual of 4-6cm (left).*

### OPPORTUNITIES FOR SPRING 2017

We grow most of our pasture in spring so even small differences reflect significantly on any grazing business. The FPFP concepts are really important. With a later start the transition from feeding a high supplements diet to feeding more pasture to forage conservation may be later and more rapid than normal. The common risk in spring is losing control of rising

residuals and wasting cheap high quality pasture. Avoid locking up paddocks too early based on a set date or because you need a certain amount of conserved feed. Making silage is expensive compared to high quality green grass if it is available now. There is also a risk of crashing residuals and underfeeding cows again if we put aside too much area in the rotation. It's also wise to consider all your options for feeding the herd over summer.

### REMEMBER:

1. Cows should never be underfed or residuals overgrazed just to ensure the pit is full or a certain number of bales of silage is made.
2. Conserve only a true surplus. It costs nearly twice as much per tonne of dry matter to produce and feed back the silage compared with direct grazing of that same pasture.

As always drop paddocks out of a rotation to conserve a true surplus using the FPFP body of evidence. These clues include faster leaf emergent rates, increasing canopy closure, rising residuals, wasted supplements, not grazing to clumps tightly and herd behaviour.

As paddocks are dropped out use the Rotation Right Tool to re-adjust areas to be grazed by the herd in a controlled manner so they consume a consistent amount of pasture. This is where the tool is really valuable and it can turn some tricky calculations into the click of a button. The Rotation Right Tool can be found at [www.dairyaustralia.com](http://www.dairyaustralia.com)

Western Dairy is seeking Expressions of Interest for future FPFP workshops. For further information please contact course presenters Kirk Reynolds [kirk.reynolds@westerndairy.com.au](mailto:kirk.reynolds@westerndairy.com.au) and Dan Parnell [agsure@inet.net.au](mailto:agsure@inet.net.au)

# Seasonal Snippets

*Tammy Negus, Agronomist*

## KEEP AHEAD OF THE GAME THIS SPRING AND CONSIDER THESE KEY THINGS TO KEEP YOUR FARM ON TRACK;

- ✓ **Plant nutrition** is critical to set up crops and pastures for yield and quality. Plant testing is ideal well before spring and flowering. Apply fertiliser (NKS) on hay and silage paddocks at least 4 weeks before cutting. Check out [www.fertsmart.dairyingfortomorrow.com.au](http://www.fertsmart.dairyingfortomorrow.com.au)
- ✓ **Fertiliser** - Have you considered split applications, post-cutting fertiliser strategies and the benefits of using liquids rather than granular fertiliser? Nitrogen prices are relatively low so make sure N is not a limiting factor. Talk to your fertiliser area manager about spring specials and plans.
- ✓ **Pasture planning & Feed budgeting** - Complete a 12 month plan for pasture and crops which combines feed budgeting. It will help you get your seeding done on time and provide the feed when you need it. DA has an excel based feed budget tool.\*
- ✓ **Seasonal reflection** - What has worked well and what needs improving for 2018? Planting oats either alone or with ryegrass has proved effective given the dry start of this season.
- ✓ **Pest control** - Consider spring weed control including spray topping for grasses, and insects such as red legged earth mite, lucerne flea, aphids and grubs. Check pesticide withholding periods for cutting and conserving forage.
- ✓ **Be prepared for silage and hay production** - Speak to your contractor and service machinery. Check out [www.topfodder.com.au](http://www.topfodder.com.au) or [www.afia.org.au/index.php/resources/hayfactsheets/making-quality-hay](http://www.afia.org.au/index.php/resources/hayfactsheets/making-quality-hay)
- ✓ **Hay and silage equipment** - have you considered flail (metal or plastic impellers) versus roller-type conditioners? The flail conditioner will cause faster drying on the first day because it breaks the vascular tissue in the leaves and stems. Speak to your machinery dealer. [www.progressiveforage.com/forage-production/equipment/the-real-deal-roller-versus-tine-designs](http://www.progressiveforage.com/forage-production/equipment/the-real-deal-roller-versus-tine-designs)
- ✓ **Grain and hay supplies** - Poor growing conditions in many of the cropping areas means the hay/grain forecasts will be lower than 2016. The benefits of developing contacts and relationships with suppliers, understanding contracts and feed testing is essential.\*
- ✓ **Summer crop** - There are many exciting species and new varieties available for spring/summer growth so investigate what is suitable for your farm and contact the seed specialists for fact sheets.
- ✓ **Water Use Efficiency** - Use your water wisely. For information on the Smarter Irrigation Project contact Dan at [agsure@inet.net.au](mailto:agsure@inet.net.au) or visit [www.dairyingfortomorrow.com.au/tackling-specific-issues/water/smarter-irrigation-for-profit](http://www.dairyingfortomorrow.com.au/tackling-specific-issues/water/smarter-irrigation-for-profit)

For more speak to your specialist for specific product advice and rates. Consult your nutritionist to make sure the herd's diet is adequate and balanced. Rumen8 can be used to check the diet [www.rumen8.com.au](http://www.rumen8.com.au) \*Fact sheets are available from [www.dairyaustralia.com.au](http://www.dairyaustralia.com.au) or [www.tfft.dairyaustralia.com.au/tips](http://www.tfft.dairyaustralia.com.au/tips)

## Managing Spring Calvers

*Jessica Andony, Western Dairy Research and Extension Officer*

Good management of your spring calvers is essential, especially in a tight season. If transitioned correctly you should see more milk in the vat and more money in your pocket, as well transitioned cows are less likely to suffer from metabolic disease in early calving. This means they should reach their lactation potential if feeding continues to meet milk demand.

### The keys to a good transition diet are:

- ✓ High energy density of feeds, to combat appetite loss close to calving.
- ✓ Dietary Cation Anion Difference (DCAD) as close to zero, or negative, if possible.
- ✓ Magnesium content of the ration above 0.45% DM.
- ✓ Calcium content of the ration between 0.4% - 0.6% DM.
- ✓ Phosphorus content of the ration below 0.4% DM.
- ✓ Introduce the transition diet slowly to dry cows that have been off grain for a length of time, this gives the rumen time to adjust, reduces acidosis risk and sets the rumen up for lactation.
- ✓ Feed the transition ration for approx. 21 days before calving.
- ✓ Include heifers in a transition program to improve rumen adaptation, socialisation and meet energy/protein needs.
- ✓ If a rumen modifier is used during lactation, the same rumen modifier should be used in the transition diet.
- ✗ Try to reduce rye/clover/kikuyu pasture feeding during the transition period unless they have been tested for DCAD, as DCAD can be high in these feeds. (Grass silage and grass hay can also be high in DCAD). If unavoidable try to combat with a very negative DCAD anionic salts.
- ✗ Avoid putting transition cows on pastures that have been treated with effluent. These will be high in potassium and increase the DCAD of the ration, which will increase the risk of milk fever.

Keep an eye on cow health problems, know the targets and seek help when required.

For more contact [Jessica@westerndairy.com.au](mailto:Jessica@westerndairy.com.au) and visit [www.dairyaustralia.com.au/farm/animal-management/fertility/transition-cow-management](http://www.dairyaustralia.com.au/farm/animal-management/fertility/transition-cow-management)

# Producing Quality Silage

*Tammy Negus, Agronomist*

For farms that use silage in the daily ration, profitability is substantially affected by silage quality and losses from ensiling and feed out. It has been a dry start to the winter season and the conditions for the spring finish are unknown. Aim to make good quality silage because there are so many influences that cause you to end up with average to poor quality silage.

## The key principles for a successful silage program;

1. Improved economic decision making - use a whole farm approach
2. Improved quality
3. Reduced losses

(Top Fodder: Successful Silage program)

## WHY ARE WE TOLD TO PRODUCE QUALITY SILAGE?

Nutritionists tell us that feeding high quality silage rather than poor quality will allow your cows to maintain and possibly even increase levels of milk production at any time in the lactation, not just at mid-late lactation. If high quality silage (10MJ metabolisable energy/kg dry matter) is fed during the dry period, less is required than if your feeding poor quality silage. Feeding quality silage (8.5-10 ME) should maintain or slightly increase milk production but poor quality silage (<8.5 ME) won't maintain it.

LOSSES %	INCREASE IN QUALITY (MJ M/KG DM)	
	9.3	10.3
25	\$0	\$5,625
10	\$10,463	\$17,213

Source [www.topfodder.com.au](http://www.topfodder.com.au)

This table shows the impact of improved quality and reduced losses on the additional value of milk production,

in terms of a marginal response, from 200t DM silage when milk is valued at \$0.30c/L and the conversion of energy in silage to milk is 8 MJ ME/L milk.

## HOW TO GET HIGH QUALITY SILAGE?

The single most important determinant of high quality silage is the stage of growth at cutting. The timing and length of shut up, prevailing weather conditions, harvesting, storage and feed out management are also big influencers of quality. The more vegetative (leafier) the crop and the closer to the correct grazing stage (2.5 to 3 green leaves) it is at cutting, the closer the silage will be to the original pasture being ensiled. Grown and managed well, this silage should be well over 10.5 MJ ME.

Length of closure is most detrimental to pasture and silage quality if the closure is near when the ryegrass plants are approaching their reproductive stage. Once ryegrass enters its reproductive stage it can change from vegetative to full ear within 10 - 14 days, and correspondingly, decline in quality very quickly. The forage DM digestibility and energy levels decline as temperate grasses mature.

## QUALITY VERSUS QUANTITY

There must be some compromise in both silage yield and quality. Many farmers and contractors simply look at the extra silage from a longer or later cut and this may be satisfactory for a maintenance or low production diet. However, many factors should be considered in the whole farming picture. Consider quality of earlier/lighter crops versus later heavier cuts, quality and quantity of the regrowth, the effect of early closure on grazing pressure for the remainder of the farm.

## CATEGORISE QUALITY

A classification system of silage as it is cut is important so that you can draw on the high quality silage when there is no grass in the diet. As silage is made, grade it based on the proportion of leaf and the pasture quality as they were cut. Stack silage in lines and class as either A (high quality), B (average type silage) or C (low quality with higher proportion of stem and low leaf).

## FEED TESTING

Knowing your silage quality allows the ration to be adjusted accordingly and informs you of what needs to be done next season to improve its quality. Assess the silage by the visual appearance, smell, "eyeballing" the pasture before cutting but most importantly get it analysed by an accredited laboratory. Feed test results will help you plan and adjust the ration with a nutritionist or do a simple check yourself by using [www.rumen8.com](http://www.rumen8.com).

For more information on producing quality silage visit [www.westerndairy.com](http://www.westerndairy.com) for checklists, [www.topfodder.com.au](http://www.topfodder.com.au) or [www.agriculture.vic.gov.au/agriculture/dairy](http://www.agriculture.vic.gov.au/agriculture/dairy)

## Expressions of Interest - Do you want to produce better quality silage?

Western Dairy is considering running TopFodder courses for 2017.

Aspects of silage production and feeding silage are the focus and the program is supported by an excellent resource manual.

Contact:

[jessica@westerndairy.com.au](mailto:jessica@westerndairy.com.au)

## SAVE THE DATE!

**Western Dairy Spring Field Day and AGM.**

*Tuesday the 28th of November 2017. Stay tuned for the venue and further details.*

# Methane Emissions and Pasture Quality

Peter Hutton, Western Dairy Research Scientist

Cows and methane production has been a hot topic over the last decade. Dairy farmers may be surprised to know that methane emissions are reduced by feeding high quality pasture.

## WHAT'S UP WITH METHANE?

During fermentation of food in the rumen microbes called methanogens release methane. The methanogens feast on the fermentation by-products hydrogen and carbon dioxide and convert them into methane. The methane produced in the rumen is burped out and there are two main reasons for why this is a bad thing. First, methane is a greenhouse gas that is about 25 times more potent than CO<sub>2</sub> over a hundred-year lifespan. Second, methane represents a loss of 2 to 12% of energy consumed that could potentially be used for production if rumen efficiency could be improved. In Australia about 10% of all methane emissions and two-thirds of agricultural emissions come from burping cows and sheep.

## HOW WE CAN REDUCE METHANE EMISSIONS

Methane emissions from ruminants can be reduced by nutritional modification and by breeding animals that are efficient at converting feed to milk and meat. The image that we have of clean and green pasture production is being challenged because the high levels of fibre in pasture increases methanogen activity and methane emissions. As part of the National Livestock Methane Program from 2013 to 2016, our work at UWA and Murdoch University was to determine if we could reduce methane emissions by 20% using novel pastures containing compounds that inhibited methane formation in the rumen. We tested plenty of commercial and non-commercial species in the lab and found a couple of species that inhibited methane without inhibiting the digestive process. One commercial grazing legume that emerged was biserrula and we included it in the mix of grasses and legumes that we tested in sheep in the animal house and in the field over the following three years.

## WHAT WE OBSERVED

There were two main findings that have implications for industry. First, there was large variation in methane emissions between animals. This suggests that there is potential to breed animals that are lower emitters and ultimately more profitable. However, at present the selection of low methane animals is not recommended because other desirable traits may be lost in the selection process. Second, aside from the bioactive effect on methane from biserrula, what was consistently observed throughout this project was that the key driver of methane and animal productivity was pasture quality. Quality was influenced by the fibre fractions of the diet, including neutral detergent fibre, acid detergent fibre and lignin (Figure 1). The high digestibility and low fibre pastures reduced methane yields (methane per Kg of intake) and methane intensity (methane per Kg weight gain) and increased productivity.

There are at least two explanations for these observations; first, fibrous diets slow the passage rate of food through the rumen and increase fermentation time that in turn produces more gas by-products; and second, highly fermentable feeds (cereal grains) shift the metabolic pathway away from methane formation and more in favour of metabolites associated with production.

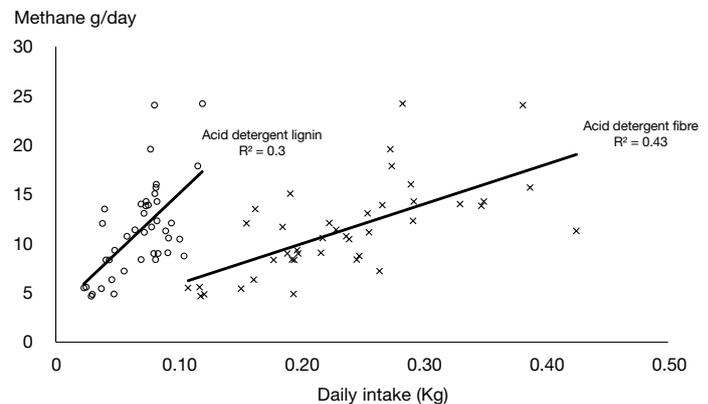


Figure 1. The key drivers of methane emissions from the sheep were the fibrous, more indigestible components of the feed.

## SO WHAT DOES THIS MEAN FOR FARMING PRACTICES?

The message is clear that a reduction of methane emissions is positively linked to grazing management strategies that optimize feed quality. Ryegrass pastures managed at the 2 to 3 leaf stage of vegetative growth have higher digestibility than older pastures and this improves the efficiency of metabolism in the rumen and reduces the amount of methane released.

The grazing studies were replicated over two seasons at the UWA research farm at Pingelly in WA and at DEDJTR in Hamilton, Victoria. Both farmlot studies supported the major findings that methane production is driven by the nutritional qualities of the pasture. Our observations in WA and Victoria support other research findings and are used to develop methodologies for the Emissions Reduction Fund (ERF) for methane abatement from whole farm systems. The ERF will be used by farmers to acquire carbon credits for using methodologies that reduce methane emissions from their farms. Carbon credits can then be sold to the Government at ERF auctions.

For information on the National Livestock Methane Program and additional links go to the Meat and Livestock Australia website: <https://www.mla.com.au/Research-and-development/Environment-sustainability/National-livestock-methane-program> The ERF can be found at <http://www.environment.gov.au/climate-change/emissions-reduction-fund/about>

For more information contact peter.hutton@westerndairy.com.au or 0408 797 145

THE FEED TROUGH IS PUBLISHED BY WESTERN DAIRY AND EDITED BY WESTERN DAIRY'S REGIONAL FEEDBASE DEVELOPMENT GROUP COORDINATOR TAMMY NEGUS.

Previous issues of the Feedtrough are available at [www.westerndairy.com.au](http://www.westerndairy.com.au)

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