

FEED TROUGH

VOLUME 4



Your Levy at Work

March 2018

Ryegrass – choose the right types and look after them

Peter Hutton, Western Dairy Research Scientist

Home grown feed that is well managed and utilized is the most cost-effective way of feeding cows in WA. The WA Dairy Farm Monitor Project showed on average \$54,600 was spent on pasture renovation (total costs) last year. It is important to get the greatest return for this serious investment.

Currently in WA annual tetraploid ryegrasses are most commonly used. The reasons for this are; the high production in a short season; perennials generally do not last thru the summer dry unless irrigated; and higher summer yielding crops such as maize followed by an annual ryegrass are preferred in irrigated areas.

The Forage Value Index (FVI) is an emerging tool developed by Dairy Australia and Meat and Livestock Australia to help farmers make informed decisions when selecting ryegrass cultivars. Presently FVIs only exist for perennial ryegrass and are specific to regions in the Eastern states. However, there are now two trial sites in WA that contribute to the FVI and the sites include annual ryegrass cultivars. Western Dairy has extended on the FVI by establishing the WA Seed Production trials (WASP). The advantages to WA farmers from the WASP trials include; real-time information that will immediately assist farmers to make informed decisions; locally available seeds that might not necessarily be included in the FVIs; and regular nutritive evaluation of pastures.

When selecting the best cultivar for your system it is likely that no single ryegrass cultivar will provide maximum production throughout the entire growing season. There are early, mid and late flowering varieties that are vegetatively

more productive at different times of the season. Early flowering cultivars often produce more dry matter earlier in the season. This was evident in our recent WASP trials where flowering habit determined seasonal yield (Table 1).

Table 1: Yield comparisons from selected WASP harvests.

HARVEST	HIGHEST YIELD KG DM/HA VS (LOWEST YIELDING CULTIVAR)	FLOWERING HABIT
22nd Aug	OreTet 542 vs (271)	Early
26th Oct	Ascend 2,002 vs (1,706)	Mid

Later flowering varieties can maintain quality later in spring on soil types that retain moisture. The trick is to sow ryegrass cultivars with suitable flowering habits to spread the range of production across the season. Ryegrasses with differing flowering habit should be planted in separate paddocks and no more than 50% of the farm should be planted to late flowering cultivars to prevent feed shortages in late winter/early spring (Nathan Tognela, PGG Wrightson).

The WASP trials were established on a support block at Boyanup with a sandy, “challenging” soil type and we did not see the persistence of any cultivar late into spring. The trials in 2018 are set to take place at two sites, one in the same location as the 2017 trials and the other on a milking area with heavier, more fertile soils. It is likely that ryegrass cultivars with a habit of later flowering will perform best on the milking area where soil moisture should be less limiting in late spring.

Good pasture management is essential to realize the potential energy returns from modern ryegrass cultivars. The Project 30

30 that was overseen by Dairy Australia identified that the key to successful grazing management was based on the growth habit of the plant (Figure 1). The project advises that the best management practice to maximise pasture yield and utilization under rotational grazing is to graze pastures when there is an adequate reserve of water soluble carbohydrates in the stem and roots and before senescence begins. This translates to; graze between the 2nd and 3rd leaf stages (closer to the 3rd leaf during winter and closer to the 2nd leaf during spring; and leave a post grazing residual of 4 to 6 cm (1,500 to 1,600 kg of dry matter per ha) between pasture clumps.

Leaving a post-grazing residual of 4 to 6 cm optimizes pasture productivity, nutritive value and persistency without limiting the intake of milking cows.

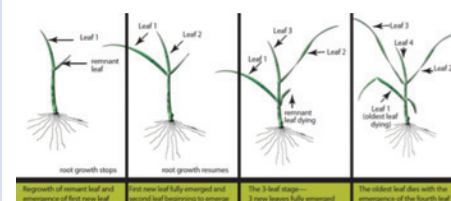


Figure 1. Leaf regrowth of a ryegrass tiller following defoliation (adapted figure by Project 30 from AJEA, 2001, 41, 261-275)

Look after your ryegrass plants and they will look after you. Good pasture management maintains a good cover of green leaf area that generates growth from photosynthesis and endorses the saying that “nothing grows grass like grass”.

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

Autumn Feed Forum

FEED UPDATE FOR WA DAIRY FARMERS

ARCHIE BLISS, SEMINI CUSTOM FEEDS

The price of barley has been on the rise, bringing it closer to the cost of buying graded wheat. Currently our graded wheat is testing at ~10 - 11% crude protein (CP) and ~13% Metabolisable Energy (ME). This is compared to our feed barley testing at 9% CP and 12% ME. The best value for money is to use wheat and dairy rations are reflecting a higher proportion of wheat and lower barley. Speak to a nutritionist and make sure the ration you are using is nutritionally balanced, safe, cost effective and meets the requirements of the livestock.

Lupins are generally the best source of protein for cows and they are currently plentiful in supply (relatively cheap at \$360/T delivered on farm). There is currently pressure on canola meal production with only two processors, however it is available but not in high supply. High quality hay is in short supply. Good quality oaten hay is often the best and is relatively well priced at approximately \$200 to \$220/T delivered on farm. There is a reasonable amount of poor quality pasture hay in the market so be cautious of quality when purchasing hay.

All base feed products such as grain and hay are variable in quality because all crops and pastures are managed differently and endure different seasonal conditions. Therefore, it is important to know the quality of the feed you are purchasing and feeding to your livestock. Always feed the best quality that you can, especially in dairy when the emphasis is on cow health and milk production. We request grain test results from CBH loads and regularly test loads of grain we receive. After our grain is milled and mixed into a ration we take samples to store and test for results such as protein and energy for quality control.

Speak to your supplier early about your requirements. Early planning is very important to ensure you have a good supply of good quality feed. It is important for dairy farmers to be proactive and take responsibility and understand their feeding programs.

Feed is an essential component for cow health and production, however a whole farm approach including the method of feeding and good animal husbandry is essential.

Avoid huge problems and plan and check your feeding system. Communication and feedback to your supplier is always beneficial so that they can help.

For further questions on feed prices and mixes contact Semini Custom Feeds on 9755 5360 or jsemini@gmail.com

DAIRY AUSTRALIA'S HAY AND GRAIN REPORT

Keep up to date with the WA prices and subscribe to DA's state Hay and Grain Report by contacting sofia.omstedt@dairyaustralia.com.au

The table below is an indication of product prices in the current market to help dairy farmers plan and feed budget. Please contact your local supplier for more information, service and advice.

Dairy Feed Tools is a program developed by DA to help you manage your years feed and nutrition strategy for milkers, early dry cows or transition cows. Set it up for your farm to stay up to date with what the cows are consuming and how much is left in the pit, shed and silo. www.feedtools.com.au

Rumen8 is a WA developed, user friendly software program to help dairy farmers make feeding decisions and assess the herds ration. www.rumen8.com.au

WA FEED PRICES	ESTIMATED COST (EX GST, PER T, DELIVERED)*
Feed Barley F1	\$280 - 310
APW1 Wheat	\$320 - 340
ASW1 Wheat	\$290 - 310
Feed Wheat	\$270 - 280
Lupins	\$350 -360
Canola meal	\$415 - \$435
Straw	\$60 - \$110
Cereal Hay	\$170 - \$220
Pasture Hay	\$160 - \$200

* Allows for freight, prices as per 05/03/2018, average from various sources in WA

FEED BUDDY 200

Do you have those blue empty 200L plastic drums around the farm? Here is an idea to put them to use. The Feed Buddy 200 is a simple but Innovative calf grain feeding system that has been developed by Victorian dairy farmer Paul Stammers.

The 2018 Australian Dairy Conference (ADC) hosted a competition featuring five contestants who had to pitch their farm innovations before a panel of judges. Paul Stammers won the People's Choice award and the Judges award with his entertaining pitch for his Feed Buddy 200 – calf feeders made from recycled 200L drums.

Conventional grain feeders or troughs can be costly, bulky and don't always fit your system. Converting blue drums into a Feed Buddy 200 costs \$0.25 so it is a cheap and easy alternative to feed calves their grain or concentrate ration.

Pauls design requires three clean 200L drums, 12 screws, a drill and a chainsaw. Two of the drums are cut length ways but angled so that the grain can sit at the bottom. These drums are fastened together back to back using screws or wire. The third drum is cut to produce two inserts that can be positioned inside the drums and screwed into place to hold the grain, allowing it to flow into the bottom. Hang the feeder on a panel between two calf pens to supply each side with up to 80kg of grain with minimal wastage.

"I'm not normally very creative, but when I am it involves 200L drums." Says Paul @budstammers on Twitter. For more visit [twitter](https://twitter.com/budstammers) or www.adf.farmonline.com.au



Autumn Seeding Checklist

Tammy Negus, Agronomist

The famous quote “If you fail to plan, you are planning to fail”, can be used in the context of growing and managing pastures. The seeding and establishment phase is a very important step for your fodder investment. Consider these points and don't get caught out;

- ✓ **Species and variety type** - make sure the characteristics will match the site and the purpose of the crop (grazing, silage or hay). Consider mixing other species such as cereals, legumes or chicory into your program. See the article page 1 ‘Ryegrass - choose the right types and look after them’ and be aware of the maturity date.
- ✓ **Seed quality** – find out if it is clean, pure or contains weeds or contaminants, certified and shows the germination %.
- ✓ **Seed supply** - talk to your retailer about availability. Seed can come treated with inoculant for legumes, insecticide and plant growth promoters.
- ✓ **Program planning** – plan what is involved in terms of time, cost, machinery, inputs and staff. Speak to your contractor and/or staff to arrange the job and don't wait until the last minute to pull the machinery out and check it is operational.
- ✓ **Existing seed set** – depending on the variety, seasonal conditions and grazing management some paddocks may have set seed last year. Assess the seed in the paddock (amount, viability) to decide on whether there is adequate seed for a good pasture this year.
- ✓ **Sowing time** - moderate temperature and adequate moisture is essential for seed germination. There are risks and benefits of dry seeding dryland and early germination in irrigation. Sow paddocks that are likely to get wet first and avoid sowing too late into winter as cold and wet conditions will hinder germination/establishment.
- ✓ **Seed Placement** - seed needs to be deep enough to have adequate moisture and seed:soil contact but not so deep that it will fail to reach the surface, especially with smaller seeded varieties like clover.
- ✓ **Seeding rate** - rates will be species or variety and site dependent. A higher plant density is better for weed competition.
- ✓ **Ground preparation and stubble management** – assess the soil structure and paddock condition to determine whether cultivation is required. Incorporating lime is highly effective to improve pH. Can your seeding equipment cope with the ‘trash’? If not consider grazing it, raking it or burning it.

- ✓ **Nutrition and fertiliser** – soil test so that you know what nutrients need to be applied (lime, fertiliser). Drilling fertiliser with the seed provides good placement of nutrients for the growing plant.
- ✓ **Insect protection** – insecticide seed treatments (coated seed) offer some protection in the seedling from some pests, consider insecticide in with the knockdown, bare earth applications and post emergent applications. Know the symptoms and identification of RLEM, bryobia mite, African Black beetle, cutworm, slugs and lucerne flea. Understand the chemistry you are using to avoid pesticide resistance.
- ✓ **Weed Burden** - control the summer weeds to avoid problems with seeding and germination. Delay seeding for problem paddocks (high weed burden), wait for the weeds to reach at least the 1.5 leaf stage and apply a herbicide knockdown. Get advice on products and rates and adhere to the label, plantback and withholding periods.

DON'T FORGET ABOUT PASTURE LEGUMES

Pasture legumes can be the perfect companion to grasses in a dairy pasture because they offer the farmer a range of benefits in feed value for both grazing and fodder production. Legumes provide high levels of energy and protein for livestock and they can fix nitrogen and incorporate it into the soil for the other species to utilise.

You must understand the ‘fit’ and the purpose of the legume into your system and how to best manage it to get the greatest value out of the pasture legume. Consider grazing tolerance, perennial (eg white clover, Lucerne), short lived annuals (eg Balansa, vetch, sub-clovers) and understand how best to feed them to livestock so that there are no adverse animal health effects.

Important steps need to be taken for growing and maintaining a successful pasture legume. For optimum growth they require a good soil pH (ideally >5.5 CaCl), have a strong requirement for certain nutrients such as potassium and require a specific inoculant to grow effectively, nodulate and fix nitrogen. Most legume species are susceptible to insects so protect, monitor and act when required. There are several broadleaf weed control options that are suitable for certain pasture legumes/ryegrass mixes and grass weed control options for pure legume stands.

For more information on seeding and pasture establishment contact your agronomist, retailer or pasture specialist.



**DAIRY
INNOVATION
DAY 2018**

Thursday May 3rd
HOSTED BY MICK & SOPHIA GIUMELLI
226 Mitchell Road, Benger

Managing Negative Energy Balance in fresh cows

Jessica Andony, Research and Extension Office, Western Dairy

The early lactation period is where approximately 80% of disease treatments costs are incurred and is also the peak period for deaths and involuntary culling. This is driven by the increased metabolic activity in the cow for udder development, recovery of appetite, immune function and resumption of reproductive activity. If we don't get the nutrients into the cow that she needs in the period directly after calving, we are likely to see metabolic diseases such as; milk fever, ketosis, mastitis, displaced abomasum's, hypomagnesaemia and acidosis. Most of these diseases are related in some form to hypocalcaemia at calving, whether clinical or subclinical, and heightened by negative energy balance.

Cows enter negative energy balance directly before and after calving. A result of the high demand for energy from the mammary system, a decrease in appetite prior to calving (up to a 30% decrease), and the physiological limitations which constrain feed intake after calving. Cows cannot eat enough to provide the nutrients they need during this stage. They will rely on body reserves to fill this gap, and so keeping an eye on your herds body condition score around drying off, calving and mating, is very important (aim to have the herd 4.5–5.5 BCS on an 8-point scale).

The peak of negative energy balance occurs about 3 weeks post calving, whereas maximum feed intake is reached about 10 weeks post calving. Demands from the mammary system will also be significant, with peak milk production occurring between 4–8 weeks post calving. In early lactation it is vital to provide

an energy dense ration that meets cow's needs. This will help to reduce the severity of the negative energy balance, so cows can recover faster. It will also reduce the amount of body reserves they need to utilise to fill the nutrient gap, further reducing the risk of metabolic disease. Aim for the following when designing early lactation rations: 11.5 – 12 MJ ME/kg of DM, 16 – 19% Crude Protein, >32% NDF, 22 – 24% Starch, 0.8 – 1% Calcium.

Always transition cows slowly onto new rations, to allow the rumen time to adapt. Following a dry period with no supplementary feed, it can take 3–6 weeks for the papillae in the rumen to grow and maximise their surface area. The larger the surface area in the rumen, the more nutrients can be absorbed from the feed. It also takes 7– 10 days for the rumen microbes to adapt to changes in feed types. This needs to be done slowly to prevent over-growth in a particular bacteria type that may lead to metabolic illnesses, such as acidosis. Feeding a specific transition (springer) ration in the few weeks before calving may be beneficial to ensure that the rumen is pre-set up to handle grain or pellets once calved.

For more contact jessica@westerndairy.com.au and consult your nutritionist for specific advice on diets for your herd. For nutrient requirements for dairy cows visit: www.publish.csiro.au/ebook/chapter/SA0501051 and www.dairyaustralia.com.au/farm/feedbase-and-animal-nutrition/nutrition/transition-cow-management

What to Consider Before Applying Lime

Garan Peirce, CSBP District Manager and Regional Agronomist

Lime is applied to increase soil pH through decreasing the concentration of Hydrogen ions in the soil. Liming acid soils will enable the optimal availability of plant nutrients, such as Phosphorus, and ensure the survival of important soil microorganisms is not reduced due to low soil pH. Liming aids in reducing the availability of soil Aluminium (Al) which can dramatically reduce crop and pasture productivity. High soil Al impacts most, but not all, soil types when the pH_{Ca} is less than 4.5/4.6.

Lime is Calcium Carbonate (CaCO₃) and it is the Carbonate (CO₃) that reacts with Hydrogen Ions (H⁺) in the soil to reduce their concentration as per the reaction: 2H⁺ + CaCO₃ > Ca²⁺ + H₂O + CO₂. Calcium has no direct impact on reducing H⁺ and is merely a "carrier" for the Carbonate.

Neutralising Value (NV %) is a measure of the purity of the lime (ie % of CaCO₃) and is by far the most important factor to consider when selecting a lime source. The purest lime sources

are characterised by having NV % of 90 or above. Particle size should also be considered but should be a distant second to Neutralising Value %. Particle size will impact the rate of the lime reaction. The smaller the particles the faster the rate.

How much to apply? Soil pH, subsoil pH, soil pH buffering capacity and the crop or pasture species grown determine the rate of lime required. Soil test regularly and use a model that considers these factors, combines data from extensive lime rate trials and will provide accurate rate recommendations for lime. Where lime is required, ensure you are using a cost-effective lime source. What is the NV%, Particle Size and its cost on the paddock?

For more information on applying lime and soil fertility contact Garan 0447 591 012 Garan.Peirce@csbp.com.au For more information on Lime Analysis for each of the registered Lime Pits go to www.limewa.com.au

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

To contribute to the Feedtrough please email Tammy at tammy.negus@gmail.com or call her on 0448 532 028

DISCLAIMER: Western Dairy accept no liability whatsoever by reason of negligence or otherwise arising from the use or release of this information or any part of it.