

FEED TROUGH

VOLUME 4



Your Levy at Work

MARCH 2017

How to Choose a Ryegrass

By Tammy Negus, Agronomist

Farmers are often looking for the ‘silver bullet’, when it comes to choosing a pasture variety. Unfortunately these don’t exist, however there are some excellent varieties in the pasture seed market. It’s not just the variety alone that will give you yield and quality for grazing and fodder production, it’s the way its managed. The purpose and the ‘fit’ of the ryegrass into your system is incredibly important.

Good seed companies invest a lot of time and money into research and development of pasture varieties. It’s important to maintain good genetic material in WA and purchase varieties that are a good investment for your farm.

Its consistently proven that producing and utilising quality home grown fodder is the most cost effective way of feeding cows in WA. The importance of producing quality pasture for milk production and setting up for quality fodder production early is essential.

STEPS TO CHOOSING A RYEGRASS;

- 1. How long do you want it to last?** This depends on soil type, irrigation and management. In general annual ryegrass will last 1 year, Italian Ryegrass can last 1 - 2 years, short rotation ryegrass 2- 4 years and long rotation ryegrass or Perennial ryegrass 5 years or more.
- 2. What is the purpose of the pasture?** Will it be for predominantly grazing on the dairy platform area or for a run-off block and to produce silage or hay production.
- 3. Ryegrass ploidy.** Diploid ryegrasses have two sets of chromosomes per cell, compared to Tetraploids that have four. Tetraploids are more palatable for stock and diploids offer robustness.
- 4. How will the paddock be grazed?** For rotational grazing or short periods of set stocking Tetraploids are ideal. For rotational grazing and longer periods of set stocking Diploids are ideal.
- 5. When do you need the feed?** The answer to this is usually the earlier the

better. Consider the livestock that you need to support - cows in milk, dry stock, young stock, fodder on hand.

- 6. What heading date will suit?** Aim to match this to paddock and soil type.
- 7. Seed treatments** are a very effective plant protection tool, helping to ensure seedling establishment and good early plant development.
- 8. Consider the endophytes** available for perennial and long rotation ryegrass. An endophyte is a fungus found naturally in many grass species. It provides the plant with protection from certain insects.

The Forage Value Index is a new tool that can help farmers make informed decisions when selecting perennial ryegrass cultivars for dairy regions of South-East Australia. This performance index has potential for development in WA. www.dairyaustralia/Pastures-and-Feeding/Forage-Value-Index

For more information on choosing ryegrass varieties contact your local seed supplier.

Ryegrass Heading Dates

Nathan Tognela, PGG Wrightson Seeds Sales Agronomist

Heading date is when a paddock visually has 10% of the plant seed heads emerged. Heading dates are defined relative to a particular cultivar.

RYEGRASS HEADING DATE INFLUENCES PASTURE PRODUCTION IN TWO WAYS;

- Timing of spring “flush”. Very early through to mid season heading ryegrass often produce more dry matter earlier.
- Timing of late spring/early summer loss of quality. Later heading cultivars hold quality, providing leafy high quality feed later in spring.

KEY RECOMMENDATIONS FOR HEADING DATES:

- Sow a range of ryegrass cultivars with different heading dates to spread the timing of heading and reduce loss of spring quality.
- Sow ryegrasses with different heading dates in separate paddocks.
- Sow no more than 50% of the farm in late cultivars to reduce early spring feed pinches.

Aftermath heading refers to the number of seed heads produced after the main heading

event. If there are a lot of seed heads produced (high aftermath heading) then this means pasture quality is reduced. If there are minimal seed heads produced then pasture quality is maintained for longer.

For more on pasture management, PGG Wrightson seeds varieties, endophytes and heading dates contact Nathan on 0419 312 156 ntognela@pggwrightsonseeds.com.au

Annual Ryegrass seed-set assessment

By Sam Taylor, Agronomist, agVivo and Tammy Negus, Agronomist, Western Dairy

Assess your paddocks for pasture seed set to help you make decisions on seeding for this season. Many factors such as species, variety traits, seasonal factors and weather conditions over the growing season, in late spring and early summer have a large influence on pasture seed set. How the pasture was managed in terms of agronomy, silage and hay produced in spring, the plant stage at cutting and whether it was grazed or left to mature affect the outcome of seed set.

There are many advantages and disadvantages of allowing natural seed set versus reseeding ryegrass pastures. Mechanically seeding pastures ensures an even seed distribution, better seed to soil placement and enables more control over the seed genetics and germination. Achieving natural seed set can be advantageous by reducing seed and seeding costs and earlier biomass at the break of the season. Consider the economics of each strategy and remember that a good plant density forms the basis for good pasture productivity. Plan your pasture seeding program and assess each paddock in terms of seed set to make the best decisions.

RYEGRASS SEED SET ASSESSMENT

The aim is to get an estimate of the amount of viable seed per hectare (Ha). The sites that you assess need to be representative of the whole paddock and take into account the paddock size and variability in soil type to enable the best estimate. Assess at least 2 sites per 10Ha with each site consisting of 3 or 4 assessments 15-20m apart.

1. Use a 10cm x 10cm right angle ruler or quadrat (see picture) to mark out one one-hundredth of a meter square (m²).
2. Count the number of ryegrass seeds in the area. Count and identify any other seeds present (clovers, weeds)
3. Assess each seed visually for quality (size, colour, shape). Seeds should contain a dark coloured endosperm indicating they have filled and are likely to be viable. Seeds that are light and blow away easily are unlikely to be viable.

4. Take seed samples and complete a germination test to estimate the seed germination percentage.
5. Multiply the number of viable seeds collected by 100 to get the number of seeds/m².
6. Multiply the number of seeds/m² by 10,000 to get the number of seeds/ha.
7. Average out the numbers of seeds in the sites sampled to get an estimate of seeds/ha/paddock.
8. Diploid variety ryegrasses contain ~500,000 seeds/kg, tetraploids contain ~350,000 seeds/kg. Use these numbers to estimate the number of seeds/ha. eg 15 seeds average in 1/100m² * 10000 = 15 * 100 = 1,500 seeds m² * 10,000 = 15,000,000 / 350,000 = ~43 kg/ha seed on the surface.
9. Apply conservative germination and establishment %'s (70% for each) and you may have ~20 kg of seed establishing from seed set. The germination and establishment % are highly variable and this is an example only.
10. 20 kg of viable Tetraploid seed establishing equates to 700 plants/m², which is less than the 800-1000 required to give you 2500-4000 tillers recommended.

RECOMMENDATIONS

This assessment is only a guide to estimating your ryegrass pasture seed set and can help you calculate which paddocks may need to be reseeded this season. With adequate growing conditions a pasture with a higher plant density will compete better with weeds and produce more biomass. For annual ryegrass pastures, 2500 – 4000 TILLERS / m² are recommended. At 3-4 tillers/plant, 800 – 1000 plants/ m² will be required to establish this amount of tillers. Using the assessment method above, you may be able to calculate rates for “top up seeding”. By having an estimate of how much seed is likely to establish, you can then if required add more seed to reach the target plant density. Completing a germination test is relatively easy and there are different methods to do this visit www.agric.wa.gov/plant-biosecurity/seed-testing.

THE VASSE MILK FARMLETS EXPERIENCE

The approach to reseeding annual ryegrass paddocks at the Vasse milk farmlets evolved over the 4 year project (2000-2004). The first year focussed on maximising pasture utilisation. Surplus pasture that was generated after the silage season was made into hay in late November. By December seed heads were non-existent in 71 out of 72 paddocks and these paddocks required reseeding in autumn. In the second year more of an attempt was made to achieve seed set in some of the paddocks and by the autumn of 2002 it became clear that naturally reseeded paddocks performed significantly better in the first 2 months after the break of season compared to paddocks that were reseeded. The difference was measured at about 900 kg DM/ha. This was very valuable, high quality feed which gave reason to re-evaluate the fixation on cutting every spare blade of grass as fodder in late spring. By the spring of 2002 (Year 3) a balance between harvesting of surplus pasture for silage/hay versus allowing the formation of seed heads was achieved. Reasonably good seed set was achieved in over half of the paddocks, whilst getting acceptable silage yields. The challenge was not knowing when the season was going to end.

For more contact Sam Taylor on 0429 332 593 sam@agvivo.com.au or your local pasture seed specialist. Visit www.dairyaustralia.com.au/pastures-and-feeding. Contact Martin Staines for more on the Vasse Farmlets experience with pasture seed set on 0448 557 085



A painted steel quadrat 10cm x 10cm that can be used to count ryegrass seeds in the paddock.

Seasonal Checklists

Don't get caught out this season. Here's some important reminders....

THE Paddock

- ✓ **Plan** the next 12 months in terms of pasture, crops, grazing and fodder production.
- ✓ **Think of your soil** - soil test paddocks and include deeper sub-surface samples.
- ✓ **Calculate lime** requirements and consider cultivation to incorporate it and improve the soil pH.
- ✓ **Nutrient requirements** - what fertiliser does your soil require and when should you buy it?
- ✓ **Speak to contractors** and organise staff for seeding.
- ✓ **Irrigation** - utilise the shoulders of the season to optimise water use efficiency for germination.
- ✓ **Maize crops** - cut at the correct dry matter and effectively ensile for top quality.
- ✓ **Sow** autumn crops and pastures early after the break.
- ✓ **Pests** - control late summer weeds, plan for a herbicide knockdown on problem paddocks and control weeds and insects early.
- ✓ **Assess seed set** in pasture paddocks and order your seed requirements early.
- ✓ Ensure you purchase quality seed and **check the germination test**.
- ✓ **Add some diversity** into your pastures and consider options such as cereals, ryecorn, brassica, chicory and legumes. Check with your agronomist or pasture specialist for specific advice on your farming system. See the resources at www.dairyaustralia.com.au/Pastures-and-Feeding.

FEED AND FEEDING

- ✓ Complete a short and long term **plan and feed budget** and review this regularly through the year.
- ✓ **Consider feeding strategies** for an early or late break and scenarios of pasture availability.

- ✓ **Feed test grain and fodder** and monitor grain parameters such as hectolitre and screenings.
- ✓ **Grain prices are still low.** The quality is variable so consider this as well as price.

FEED	ESTIMATED COST (Ex GST, per T, delivered)*
Feed Barley FED1	\$220 - 230
APW Wheat	\$265 - 270
ASW Wheat	\$250 - 255
Feed Wheat	\$230 - 235
Lupins	\$295 - 310
Canola meal	\$420
Oats	\$180 - 200
Straw	\$60 - 90
Cereal Hay	\$160 - 220
Pasture Hay	\$150 - 200

* Allows for freight, is an estimate only as per 7th March 2017, exc. GST, taken from Bunge Bunbury and Dairy Australia's Hay and Grain Report.

- ✓ **Revise and balance the ration** for all stages of lactation, plus dry stock to meet the requirements for energy, protein, starch and fibre.
- ✓ Do a diet check on the **Rumen8 software** and make sure that you're on the right track - www.rumen8.com.au
- ✓ **Minimise Wastage** when feeding out
- ✓ **Feeding equipment** - calibrate and check the system is operating effectively and that staff are following procedures. Consult your nutritionist and feed suppliers for advice specific to your situation.

Measuring Grain Test Weight

When buying and feeding grain to dairy cows it's important to understand the grain quality parameters and how these influence the efficiency of the feeding system and the profitability of the farm. Test weight is a measure of the density of the grain and is calculated as kg/hL (hectolitre) and is important to monitor. It is a good indicator of how the grain endosperm has filled out and this is what contains the 'good stuff' such as starch and protein that we desire for cow feed. Events such as frost in grain crops can cause a low test weight so it is important that you assess grain you are buying as well as feed test to know the nutritional characteristics of the product. If you buy grain from grain handlers like CBH you will receive a print out of details such as test weight and screenings for each load, however monitoring grain loads is still worthwhile.

A field method for test weight that can be used on dairy farms involves weighing a 0.5L sample of grain. The sample can be obtained by using a height guide to fill the 0.5L container and can be used to compare loads. A more accurate result is obtained by using a Chondrometer. These standardised instruments can be purchased from grain scientific equipment specialists.

For more contact your grain supplier or visit commodityinspection.com.au for a Quality Analysis Guide or www.graintrade.org.au

WHAT IS A CHONDROMETER? A STANDARDISED CONTAINER FOR WEIGHING GRAIN AND DETERMINING GRAIN TEST WEIGHT IN KG/HL



A Chondrometer kit

Early lactation cow diets

By Jessica Andony, Research and Extension Office, Western Dairy

To promote cow health during lactation and to maximise milk production of your herd, it's important to focus on the nutrient requirements for each stage of lactation. What are your targets for early lactation cow diets?

Directly before and after calving, a dairy cow will enter a physiological state known as negative energy balance (NEB). This is a result of the high demand for energy from the mammary system, coupled with her decrease in appetite prior

to calving, and the physiological limitations which constrain feed intake after calving. Her maximum feed intake will occur at approximately 10 weeks after calving, with the peak of NEB happening at approximately 3 weeks after calving. To add to the complexity, her peak milk production is expected between 4-8 weeks after calving. It is therefore paramount to provide freshly calved cows with a high quality diet that meets their nutritional requirements during this time.

Freshly calved cows need an energy dense diet, so aim for 11.5-12 MJ ME/kg DM, with crude protein levels of 16-19%. Neutral detergent fibre (NDF) should be lower than dry cow rations, aim for around 32%. Always transition cows slowly onto new rations, to allow the rumen time to adapt. This is particularly important when increasing concentrates in the ration.

Early lactation is a crucial time for a cow, and many things can potentially go wrong if cows aren't transitioned correctly. Metabolic processes that drive udder development, recovery of appetite, immune function and resumption of reproductive activity are increased during this time. If the animal's metabolism is unbalanced then metabolic disease happens. The common diseases around this time are milk fever, ketosis, mastitis, displaced abomasum's, hypomagnesaemia and acidosis. Most of these can be avoided with the correct pre-calving and post-calving nutritional care. The table to the right gives specific recommendations for pre- and postcalving rations.

For more contact jessica@westerndairy.com.au and for specific advice on diets for your herd consult your nutritionist. For more on nutrient requirements for dairy cows: www.publish.csiro.au/ebook/chapter/SA0501051 and also www.dairyaustralia.com.au/Pastures-and-Feeding/Nutrition/Transition-cow-management.aspx

RECOMMENDATIONS FOR FAR-OFF, TRANSITION AND FRESH COW DIETS

NUTRIENT	TOTAL DIET ANALYSIS (DRY MATTER BASIS)		
	Far-off dry cows (More than 4 weeks precalving)	Transition cows (Last 4 weeks pre-calving)	Fresh Cows (first four weeks post-calving)
Neutral Detergent Fibre % (NDF)	> 36%	> 36%	> 32%
Crude Protein % (CP)	>12%	14-16%	16-19%
Metabolisable energy intake per day (MJ)	90-100	100-120	160+
Energy Density (MJ ME/kg DM)	10 (9)*	11	11.5-12
Starch %	Up to 18%	18-22%	22-24%
Sugar %	Up to 4%	4-6%	6-8%
Fat %	3%	4-5%	4-5%
Calcium %	0.4%	0.4-0.6%	0.8-1.0%
Phosphorous %	0.25%	0.25-0.4%	0.4%
Magnesium %	0.3%	0.45%	0.3%
DCAD Meq/kg	<150	<80	>250
Selenium mg/kg	0.3	0.3	0.3
Copper mg/kg	10	15	20
Cobalt mg/kg	0.11	0.11	0.11
Zinc mg/kg	40	48	48
Manganese mg/kg	12	15	15
Iodine mg/kg	0.6	0.6	0.6
Vitamin A iu/G	2000	3200	3200
Vitamin D iu/g	1000	^	1000
Vitamin E iu/g	15	30*	15

*Energy density will depend on the BCS of dry cows ^Vitamin D and E concentrations are yet to be determined for the transition period. Source: *Transition Cow Management: A review for professionals, veterinarians and farm advisors. Ian Lean and Peter DeGaris. 2010.*

**DAIRY
innovation
DAY 2017**

Thursday 4th May 2017

Hosted by Wes & Sarah, Robin & Betty Lammie
Lyle Road, Busselton

Followed by the WA Dairy Industry Gala Dinner that evening

To register visit www.westerndairy.com.au
or Jess Andony 0435 174 719

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

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