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FEED TROUGH

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Your Levy at Work

VOL 4

Study your soils – subsurface compaction

By Courtney Piesse, Elders Senior Agronomist

In farming, your soil is one of the most important assets. Growing and utilising quality home-grown fodder is still the most cost effective way to run a WA dairy farm, and to do this your soil needs to be in good health. It is therefore worth investing money and time into improving your soils to maximise production. A soil's physical, chemical (nutrients) and biological (microorganisms) components play an important role in how your soil behaves and supports crop growth. They should be regularly monitored to optimise production.

The majority of agricultural soils in Australia have developed subsoil physical constraints, in particular compaction. In the dairying areas of WA we are seeing this impact on the soil. A large Holstein dairy cow can weigh up to 700kg and with a high stocking rate and multiple grazing per year a herd creates a great amount of compaction. Machinery passes across paddocks also contributes towards compaction. Extreme seasonal conditions such as the high rainfall and waterlogging in 2014 and a dry year in 2015 also have an effect on the soil profile.

Process

You can detect soil compaction by visual observation, a hand probe or cone penetrometer. Digging a big hole or soil pit is an excellent way of identifying if you have a compacted soil layer. You will most likely find compaction caused by machinery between 10 and 40cm and compaction from livestock trampling at the top 15cm of soil. Hard soil layers slow or prevent root growth to access water and nutrients and this will limit pasture production. There a number of things to gain out of digging a soil pit and assessing the profile;

- Define horizons – this will help work out drainage options and moisture holding capacity
- Soil coring – Find out pH, EC, and soil nutrient levels at depth
- Assess compaction layers – we can then select the correct method of solving the problem (which deep ripper will work best, spading, simple cultivation)

Management

The compacted soil is addressed by direct physical disruption using tillage. Deep ripping, spading and mouldboard ploughing involves breaking up the hard pan using strong tynes usually to a depth of 30-40cm. There are different machine configurations available and you will need to assess your soil type and situation before taking action. This process can also coincide with seeding or with lime or gypsum applications to help incorporate the product to depth. Establishing deep-rooted species such as kikuyu, setaria, lucerne and brassicas can help to break up compacted layers over time. The increase in root mass at depth will also help the soil structure over time.

Minimising tillage

is also very important. Sowing by direct drilling or minimum till helps to maintain soil structure by reducing the amount of soil disturbance. It also reduces the risk of soil erosion because the soil is not left bare by cultivation. If cultivation must occur be aware of soil damage. Cultivating when the soil is too wet or too dry will damage the soil structure and produce a compacted soil layer. Heavy clay soils are best cultivated when the soil is dry. Light sandy, silty or loam soils are best cultivated when the soil is slightly moist.

Tramline farming

will confine vehicle compaction to run lines. If you have a high number of passes over paddocks over the season, this can be a very useful tool in the right situation.

For more contact Courtney on 0429 377 608 or (08) 9791 0965.
Also www.soilquality.org.au

Fertiliser price trends

By Ralph Papalia, Summit Fertilisers

Every year it is important to soil test, develop a farm fertiliser strategy and plan your product requirements for the season. It is also interesting to take note of the price and market trends that have been occurring which may affect what you pay for fertiliser in 2016.

World fertiliser pricing is mainly currently driven by supply. China has become a major exporter of phosphates and urea recently as they invested heavily in manufacturing capacity, along with other countries like the Middle East when world fertiliser prices nearly doubled in 2008.

The phosphate price remains steady compared to last year on the local market due to early purchasing by suppliers (as the $AUS continued to drop). There has recently been a further decline of phosphate pricing on the "World Market" but Australian suppliers have high inventories of the more expensive stock. The supply has been strong from China.

Urea prices have eased significantly locally because fertiliser suppliers are still buying this commodity and the world price continues to ease. Urea is now at its cheapest price locally for quite a number of years. This is despite the $AUS easing more than 20% since the same time last year. Generally for every 1% drop in the $AUS, the price of fertiliser rises by $6. This has not been the case this year.

Potash price, mainly muriate of potash (MOP) has eased slightly, mostly due to weaker demand on the world market. Potash tends to be purchased discretionally by farmers world-wide so when times are good demand is high. Importing countries like Brazil and others are struggling financially and because of this the demand for potash has been subdued.

Sulphate of Potash (SOP) price remains high, but it was noted last year that the price should ease by about June this year as production starts to increase again. An accident at one of the worlds' biggest SOP manufacturing plants resulted in a complete "shutdown".

For more on fertiliser products, supply, specifics on soil testing and soil nutrition contact Ralph on 0427 766 535.

Preparation for seeding autumn pastures

By Tammy Negus, Agronomist

Be Prepared

With many farmers experiencing feed shortages and a long dry summer there is a greater emphasis on getting green feed for livestock as soon as possible. Benjamin Franklin used the phrase "if you fail to plan, you are planning to fail" and this can be used in the context of your autumn seeding program for 2016. Have a clear strategy before the season breaks so that you can make the most of the growing conditions. Dry seeding is sometimes a feasible option in certain circumstances and farmers with irrigation can start early germination and should take the opportunity to utilise the shoulders of the season.

Assess seed requirements

On the back of a dry and short spring in 2015 there is limited pasture seed set. Assess seed lying on the ground in paddocks for species type, numbers and whether it has germinated and survived after the rain in late January. There will be an increased demand for seed into the fire affected regions. Determine your seed requirements, order and receive the product early to avoid missing out.

Consider options

Dairy farmers are generally seeding annual ryegrass which provides an excellent source of quantity and quality of feed for rotational grazing, silage and hay when the correct variety is chosen and it's managed well. However, don't limit yourself to just this. Explore the options of companion species for example oats, brassica, clovers, chicory, vetch or peas that may be suitable to your soil type, farm, livestock and grazing system. Adding new varieties and mixes to your pasture can provide benefits of extra yield, feed quality and is a risk management tool when variable conditions exist.

Length of season

One of the most important factors when choosing varieties is the length of season. Varieties vary from early to late maturing and should be matched with your paddock soil type and growing conditions. When a ryegrass plant reaches maturity it starts to decline in quality. The variety grown should be just prior to head emergence in spring at the time of cutting for optimal silage quality.

Feedbase plan

The short 2015 finish highlights the importance of developing a 12 month feedbase plan. Projecting your grazing & fodder requirements beforehand helps with an early contingency planning when poor seasonal conditions occur as well as assisting with decisions on fit for purpose pastures. A good example is seeding a portion of the platform with annual ryegrass + oats + brassica mix. The oats and brassica will provide early feed five weeks post sowing while protecting the slower ryegrass on the first grazing. Another example is increasing clover % in paddocks to increase the silage protein content. Allocate this silage for summer when there is limited green feed in the ration and when supplementary protein is expensive.

It is important you assess and discuss things like variety, seeding rate, seeding preparation, pest control, fertiliser and grazing management with an agronomist, adviser or rural supplier. For more contact Tammy on 0448 532 028 or visit www.dairyaustralia.com.au/pastures-and-feeding

Optimising dairy calf nutrition and performance

Ruairi McDonnell – Western Dairy research scientist

Pre-weaning growth of calves is the most expensive period of growth an animal will undergo in its lifetime. Traditionally, it is recommended to provide calves with approx. 10% of bodyweight (4 – 4.5 litres/day) in milk or milk replacer for the first few weeks of life. This is less than a calf would naturally receive if left suckling with its mother, where they would generally consume 8-10 litres/day in the first 3-4 weeks of life. The theory is that restricted feeding of milk will accelerate rumen development and function, and intake of solid feed.

Successful calf rearing should target an average daily gain (ADG) of 0.7 kg/day, which equates to a target weight of approx. 100kg at 12 weeks of age (40kg calf at birth). Recent data suggests it is difficult to achieve this under conventional feeding practices. Restricted milk provision, especially in the first 3 weeks of life, generally results in lower growth rates, increased susceptibility to stress and disease and higher mortality levels. This is why concentrate provision is critical in early life.

Calves should have access to concentrates within 3-5 days of age, to assist rumen development and function. It should contain approx. 17% crude protein, high energy density (> 13.0 MJ/kg) and be somewhat coarse in nature, to maintain rumen papillae in optimum condition. Unlimited access to clean drinking water is essential, and a limited amount of good quality fibre is important. Large amounts of poor quality hay or straw will reduce the energy density of the overall diet, slow down growth rates and can often result in an undesirable "pot belly" condition.

Weaning is a stressful period and the age of calves should NOT be the sole criteria determining weaning date. Instead a solid feed intake of approx. 1.4% of bodyweight (min of 1kg DM/day solid feed) should be targeted before gradual removal of milk over a 7 day period. Poorly functioning rumens at weaning will stunt the growth rate of the calf post-weaning regardless of how they performed pre-weaning; hence adequate intake of solid feed pre-weaning will help reduce this effect and improve health and wellbeing of the calf.

Accelerated feeding is an alternative feeding strategy that has received significant research interest in recent years. This involves providing higher amounts of milk or milk replacer in the first 4 weeks of life, (15-20% of bodyweight or 8-10 litres/day for an average calf), before stepping down to conventional levels from approx. 5 weeks of age until weaning. This results in a higher ADG, but slower rumen development in the first 4 weeks due to reduced solid feed in this period. Data has shown that if this strategy is managed correctly through weaning and post weaning, calves will have a higher bodyweight at 12 weeks of age (115-120kg).

The benefits of this strategy include a more natural feeding behaviour, reduced signs of hunger, improved growth, health and welfare. Longer term benefits of higher growth rates in heifers pre-weaning include a reduced age to first calving, plus a recent experiments showed that first lactation milk yield increased by 155 kg of milk for every additional 100 g of pre-weaning ADG as heifers. This strategy results in increased costs in terms of extra milk consumed, but so far, data indicates that the long term benefits to the animal more than compensate this.

We are not advocating one strategy over the other, but we do recommend farmers aim for the general rules of thumb outlined above in terms of target ADG, solid feed intake at weaning and the nutritional composition of solid feed offered to calves.

For more contact Ruairi Ruairi.mcdonnell@westerndairy.com.au or obtain a 'Rearing Healthy Calves' manual from the Western Dairy hub or www.dairyautralia.com.au

Condition scoring your cows

Measuring and managing body condition score (BCS) for your cows' is a key to managing your herd's nutrition. BCS is a visual assessment of the amount of fat and muscle covering the bones of a cow, regardless of body size. It involves assessing specific locations on the cow to determine how thin or fat the cow is using a scoring system from 1 (thin) to 8 (fat). The score tells you a lot about your herds' previous level of feeding, likely future production and fertility, and future feed requirement.

Dairy Australia has developed 3 tools to assist with assessing your herd's body condition profile;

1. Dairy Australia's body condition scoring app

This is a smart phone based tool for easily monitoring and managing your herd's body condition profile. It has three methods of scoring; beginner, intermediate and advanced, graphical presentation of the results and the option to email your results to yourself or an advisor. It also has tips and advice for situations where your results are off target and in-built scoring reminders based on your herd's stage of lactation. If you use an iPhone go to the app on iTunes to download.

2. Dairy Australia's body condition scoring handbook

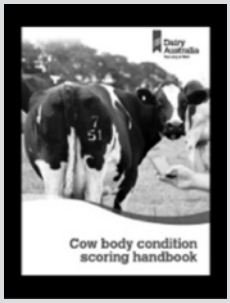
This a guide to monitoring and managing your herd's body condition profile.

3. Body condition scoring recording sheets

These can be used to manually record your herd's body condition profile.

Effective management of body condition and nutrition improves herd reproductive performance, milk production and enhances cow health and welfare.

For more visit www.dairyaustralia.com.au/animal-management/fertility/body-condition-scoring



Grain and hay prices for dairy farmers

By Tammy Negus, Agronomist

Hay suppliers and re sellers are struggling to fill standard orders and after the Yarloop region bushfires there is increased pressure and higher demand for hay. If you haven't secured your hay supply for this year you are likely to have problems sourcing it now.

The January rainfall will have caused a decline in the quality of dry paddock feed. This is feed that is usually allocated to dry and young stock that will now need more supplementation. Some farmers are increasing the use of concentrates in the diet, using grain or pellets to stretch out the hay allocation.

It's important to test grain and hay so that you know the value of what you are paying for in terms of protein and energy and not just buying in units of weight.

Assess your protein sources and consider other options such as canola meal. Dairy pellets are also an option available from a few suppliers, and there are products with a high protein analysis.

Dairy Australia produces a fortnightly state Hay and Grain Report showing average prices. You can subscribe to this and get the report emailed by contacting Amy Bellhouse, Industry Analyst at abellhouse@dairyaustralia.com.au

Prices for grain and fodder to dairy farmers *

Feed	Estimated Cost (Ex GST, per T, delivered)*
Feed Barley	$255-265
APW Wheat	$310-315
Lupins	$400
Canola meal	$438
Oats	$350
Straw	$90 - $120
Cereal Hay	$260 - $270
Pasture Hay	$170 - $210

** This excludes GST, allows for freight, will be variable, as per 8th February 2016, taken from Bunge Bunbury, Grainlink, CBH Dairy Australia prices.*

Autumn feedbase reminders

Paddock

- Pasture program – plan, assess and order seed requirements early
- Summer weed control – spray these weeds well before seeding and whilst they are small
- Soil testing –use this information so that you can make a lime and fertiliser strategy and budget for requirements
- Paddock renovation –focus on underperforming areas from 2015 and address the issues
- Weed control – ensure you use suitable herbicides and correct rates for 'knockdown'
- Insect control – Check and protect against early season pests such as red legged earth mite

Herd

- Revise the ration – check that the milking herd and all other stock are getting a suitable, balanced ration
- Feed budget – assess feed on hand, wastage, consumption rate, requirements, supply, options available and what is the best value for money
- Feed test – test home grown fodder, bought in fodder and grain
- Preparation for green feed – have a strategy for transition feeding in autumn
- Rumen8 - look at Western Dairy's user friendly feeding tool 'Rumen8' to help you make feeding decisions www.rumen8.com.au

For more speak to your local specialist in each area of expertise

dairyinnovationday 2016

Thursday April 28
Darren & Sharon Merritt's farm, Elgin

Dairy Industry Dinner
And announcement of the Brownes Dairy Young Dairy Farmer of the Year
Thursday April 28 from 6.30pm
Lighthouse Beach Resort, Bunbury

Dairy Innovation Day post event farm tour
Friday April 29, 'Gundagai', Boyanup

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