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BEEF TALK

Taking stock of your future

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Welcome to Beeftalk: Issue 51

Beef Australia 2018 is just around the corner! At the Beef Australia 2018 seminar series, the Queensland Government will provide updates on the latest research, extension and development work by industry-leading teams of beef experts from across the state. You will also have the opportunity to meet beef extension officers and see what the many Queensland Government projects and programs can offer your beef business.

As we head into the dry season after another inconsistent summer across the state, take some time to assess the health of your cattle and pastures and plan for the months ahead. Now is the best time to do a forage budget of your available pasture and adjust stocking rates accordingly. It is also the best time to check the condition of your breeders—ensuring they maintain adequate body-condition score going into winter will give them the best chance at re-conceiving next joining period. Similarly, it is vital you also care for yourself. You cannot pour from an empty cup so take some time out to look after your own well-being.

The sown pasture team in the Department of Agriculture and Fisheries recently delivered legume establishment and management workshops across southern and central Queensland. They identified four key practices for successful and reliable legume establishment on-farm and you can read more about these practices and find out about future workshops in this issue.

This issue also features Cunnamulla producer Ben McKenzie's recent experience using near infrared reflectance spectroscopy (NIRS) to guide supplementation decisions within his business. While urea is a common protein supplement fed during the dry season, it can be toxic.

We hope you enjoy this issue of Beeftalk and as always we would appreciate your feedback and suggestions for future articles. Please email us at info@futurebeef.com.au.

Happy reading

The Beeftalk team.

Beef Australia 2018 count down is on

With less than three weeks until Beef Australia 2018 kicks off in Rockhampton, it isn't too late to grab a ticket and join the nation's premier beef expo.



The Queensland Government is a principal partner of Beef Australia 2018 (6 to 12 May) as part of its commitment to work together to build a sustainable beef industry in Queensland.

It will have a large presence in the Sidney Kidman Pavilion, where ten agencies, including the Department of Agriculture and Fisheries, will provide a one-stop-shop for all things beef.

At the Beef Australia 2018 Seminar Series, the Queensland Government will provide updates on the latest research, extension and development work being conducted by industry-leading teams of beef experts from across the state.

Hear about the latest innovative projects that are geared towards a more productive, profitable and resilient beef industry.

Seminars will cover a wide range of topics including:

- economics of beef production systems
- climate forecasts and models
- phosphorus for grazing cattle
- Next Gen programs for young producers
- work-place health and safety
- legume establishment
- agricultural education
- industry investment outlooks
- grazing management
- preventing plant poisoning
- parasite control in cattle.

The seminar presenters will be available for more information throughout the week at the Queensland Government display. You can also meet beef extension officers and see what the many Queensland Government projects and programs can offer beef businesses.

Other Queensland Government agencies in attendance are:

- Transport and Main Roads
- Office of Industrial Relations
- Natural Resources, Mines and Energy
- Environment and Science
- State Development, Manufacturing, Infrastructure and Planning
- Local Government, Racing and Multicultural Affairs
- Trade and Investment Queensland
- Queensland Agricultural Training Colleges
- Queensland Rural and Industry Development Authority.

To find out more about the Queensland Government presence and seminars program, visit qld.gov.au/sustainablebeef.

To purchase your seminar tickets, visit beefaustralia.com.au/tickets.

Set your stocking rate for winter: a simple assessment

By the end of March we have a pretty good idea of how much grass we will have to last us through winter. This is the time of year to determine how many cattle we have to get through the dry season, how much grass we have, how many cattle we can feed on pasture without resorting to a costly feeding program, and what we will do if we don't have enough grass.

How do we do the figures?

To calculate how much feed we need, a 450 kg dry animal, i.e. one adult equivalent (AE), eats approximately 10 kg dry matter (DM)/head/day. So in a year we need 365 days x 10 kg = 3650 kg DM/year to feed this animal.

So for example, let's take a 100 ha paddock at the end of March and estimate there is 4500 kg DM/ha. A very good speargrass pasture will have about 6500 kg DM/ha, whereas a paddock with little grass made up of couch may have 500 kg DM/ha or less.

Tip: Pasture photo standards are a handy tool to help estimate how much pasture there is (futurebeef.com.au/knowledge-centre/pasture-photo-standards).

To keep ground cover and maintain pasture we use the rule of thumb to use only one-third of the pasture for cattle, one-third for soil and one-third for ground cover. This leaves us with 4500 kg x 1/3 = 1500 kg DM/ha of feed to eat.

We now need to estimate how long it will be before there is sufficient rain and high enough temperatures to grow grass again (e.g. 50 mm over 4 days). Most people are overly optimistic about this but the CliMate app (climateapp.net.au) shows that at Gayndah there is a 65% chance of 50 mm over 4 days between the start of November and the end of December. So a fair estimate is to use 31 March to 30 November, which necessitates 244 days of feed.

100 ha (paddock size) x 1500 kg DM/ha = 150 000 kg feed in the paddock.

One AE eats 3650 kg in 365 days (10 kg/day); in 244 days it will eat 244 x 10 kg = 2440 kg.

150 000 kg feed available ÷ 2440 kg feed needed = **61 head in 100 ha for 244 days.**

What if we had cows?

A cow that calves during the year is 1.5 AE on average so if we had in-calf cows in the paddock the calculation would be:

1.5 x 3650 = 5475 kg DM/year (15 kg/day). In 244 days she will eat 244 x 15 kg = 3660 kg.

Dividing the feed by the need is 150 000 ÷ 3660 = **41 head in 100 ha for 244 days.**

This is a simple calculation to help set a stocking rate. Other considerations such as feed quality also need to be taken into account. For more information on setting stocking rates and photo standards visit futurebeef.com.au and climateapp.net.au.

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Grazing BMP at Beef Australia 2018 and beyond

The Grazing BMP (best management practices) program continues to make headway across Queensland and will showcase its success at this year's Beef Australia 2018 expo in Rockhampton from 6 to 12 May. The property tour program is always popular and this year will feature three Grazing BMP-accredited businesses.

The first property tour begins on Monday 7 May and will showcase Barfield Station at Banana, home to Rob and Melinee Leather. The Leathers are strong supporters of the program—becoming accredited in 2015—and consistently support grazier peer learning by hosting producer groups and sharing their passion for growing a stronger beef industry.

Steve and Claire Farmer of SC Droughtmasters at Mt Elsa will provide visitors the opportunity to discuss the benefits of performance recording. SC Droughtmasters is an industry leader in using a variety of genetic selection tools and herd-recording practices. Becoming Grazing

BMP-accredited in 2016, Steve and Claire have since featured in a bull selection FutureBeef video.

Belmont Station is the third BMP-accredited property on the tour program. Located 37 km north of Rockhampton on the Fitzroy River, the 3260 ha property is owned and managed by AgForce Queensland and delivers a unique, collaborative approach by providing a working cattle station with a focus on research and education.

At the Beef Australia 2018 seminars there will be two Grazing BMP guest speakers focused on sustainability.

Nicole Johnson-Hoffman, Chief Sustainability Officer, Senior Vice President OSI Group LLC and President Global Roundtable for Sustainable Beef, will present on beef sustainability and how Australian beef fits into the global supply chain.

James Bentley, Manager Natural Value, Corporate Responsibility NAB, will explain 'natural capital' and why it is important to the finance sector, what NAB is doing to ensure natural capital informs banking decisions and what this means for graziers and the future of Grazing BMP.



Grazing BMP-accredited producers invited to networking event

Accredited producers will be invited to a BMP networking event in Charters Towers on Wednesday 6 June.

This will be the first event of its kind, recognising the commitment of this growing group of producers who are prepared to open their business to third-party scrutiny of management practices.

The event aims to develop stronger connections between accredited businesses and identify opportunities to work together to further their commitment to environmental sustainability and animal welfare.

Discussion will also focus on adding value to the Grazing BMP certification, both in the marketplace and along the supply chain.

Guest speakers at the event is the Hughes family paddock-to-plate enterprise, Rangeland's Quality Meats. The Hughes use BMP certification to underpin their product and demonstrate their commitment to best practice directly to their customers. They will share their insights into sustainable and profitable production.

For more information about the Grazing BMP program please contact Roger Sneath, Grazing BMP Coordinator DAF Burnett Mary on (07) 4629 4244 or Cass Heal, Grazing BMP Coordinator with AgForce on (07) 3236 3100.



Urea poisoning in cattle

Urea increases ammonia levels in the rumen and blood and this becomes a problem if the amount of ammonia in the blood exceeds what the liver can convert back into urea. It often kills cattle if eaten too quickly, for example, when cattle are new to supplements, are hungry, or have a depraved appetite from being deficient in protein, phosphorus or salt. Even though regular urea supplements increase the ability of the liver to detoxify ammonia over several weeks, this ability can be lost within a week without supplementation.

The main signs of urea poisoning are:

- twitching ears and facial muscles
- grinding teeth
- frothy saliva
- bloating
- difficulty breathing
- staggering
- spasms just before death
- dead cattle near the urea supplement.

If caught early, cattle are treated using a stomach tube passed into the rumen to relieve the bloat and then used to drench the animal with cold water; 45 L for an adult cow followed by 2 to 6 L of 5% acetic acid or vinegar, 0.5–1 L for sheep. This reduces the alkaline-corrosive effect of ammonia in the digestive tract and conversion of urea to ammonia. Repeated doses of vinegar may be needed as signs may recur after 30 minutes.

Principles of urea supplementation

- Urea kills cattle if they eat it too quickly, particularly when starting a feeding program.
- Ensure there is adequate dry-standing feed available.
- Start feeding urea before cattle lose too much weight.
- Satisfy any cravings cattle may have using pure salt before including urea in a supplement.
- Weigh ingredients with scales and mix thoroughly.

- Feed urea with sulphur in a ratio of 10N:1S.
- Build urea intakes slowly to daily targets e.g. 50–60 g/head a day for breeders and 25–30 g/head a day for growing cattle.
- Avoid letting cattle run out of urea supplement after they are introduced to it.
- If stock stop eating the urea supplement for several days restart them at lower intake levels.
- Avoid urea dissolving into pools of water, which stock can drink.
- Use well-drained troughs or rain shelters.
- Keep records of supplement fed out and the numbers and descriptions of cattle fed to calculate the most effective use of supplement dollars.

For more information visit dpir.nt.gov.au/___data/assets/pdf_file/0003/233058/796.pdf.

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You can't pour from an empty cup—take care of yourself first

We care deeply about the health of our livestock and land, and closely monitor the health of our businesses. But how often do we take a good hard look at our own personal wellbeing?

While resilience and determination are a natural part of rural life, there may be times when ongoing hurdles make it that bit harder to 'get back on the horse'. Recognising when help and support is needed, for yourself or someone else, is very important.

There are many things you can do to help yourself stay well:

- Stay active: Keeping fit and staying active is great for your physical and mental health—it can help you sleep better, manage stress and boost your mood. Find a sport or physical activity that you enjoy and make a plan to do it regularly.
- Eat well: Try to maintain a balanced and nutritious diet and ensure you are drinking enough water.
- Get enough sleep: Sleeping is vital for your health—it helps you feel energised, stay focused and protects your mental health.
- Keep in touch: Catch up with friends and family—have a BBQ and meet for dinner and drinks, even if it's just a quick check in, a cuppa or quiet beer. If it's hard to meet up in person, pick up the phone for a yarn or even text a mate to say g'day. Connecting with those around us creates a support network that helps us through the hardest of times.
- Take time out: When times are tough we often don't prioritise relaxation and activities we enjoy, when in fact these are the times we should prioritise it the most. Schedule in some time to take a break and enjoy yourself.
- Visit your GP: Get regular health checks and discuss any health concerns you may have.
- Manage stress: Learn how to monitor and manage your stress in positive ways.
- Reach out: None of us are superhuman. We can all get tired or overwhelmed sometimes so if things are getting too much and you are struggling to cope, reach out and ask for help.


Sometimes we get so busy that we don't even realise we might need a break. Look out for these signs that might indicate you or a loved one need some support:

Physical

- feeling lazier than usual
- physical weakness
- change in sleep patterns
- restlessness
- increased use of drugs or alcohol

Emotional

- irritability or edginess
- tension or nervousness
- loneliness
- feeling overwhelmed
- feeling out of place.

Everyone's health and wellbeing can vary throughout their life in response to different stressors and experiences. We all have to listen to our bodies and take time out when needed, both physically and mentally. It's OK to not be OK, and it takes a great amount of courage to admit that you aren't coping. If you are feeling low, stressed or unsettled please speak to someone. Talk to friends, family, a trusted health professional or call a help line. 

Contact numbers and links for support

Lifeline 13 11 14 / lifeline.org.au

beyondblue 1300 224 636

beyondblue.org.au

Suicide Call Back Service 1300 659 467

suicidecallbackservice.org.au

MensLine Australia 1300 789 978

mensline.org.au

Kids Helpline 1800 551 800

kidshelpline.com.au

Head to Health headtohealth.gov.au

HeadsUpGuys headsupguys.org

headspace headspace.org.au

The Check-in app: download free from App Store or Google Play (search Youthbeyondblue The Check-in)

Podcast: Let's Talk by Centre for Rural and Remote Mental Health crrmh.com.au or download from iTunes

Forage budgeting—pasture management at Brian Pastures

Forage budgeting is the process of calculating forage supply and livestock demand over a set period. Knowing how much forage is available assists us to make informed and timely grazing management decisions, ensure there is enough residual pasture at the end of the grazing period, and help use available pasture more efficiently.



Photo taken at time of forage budget

Paddock name: Bottom cultivation
Date: 23/5/17
Paddock area (ha): 11.75
Current stock in paddock: 0 head
Land type/s: Blue gums on cracking clays
Land condition (A–D): A
Ground cover: 85%
Soil condition rating (1–5): 1
Pasture condition rating (1–4): 1
DM yield (kg/ha): 5000
Percentage yield unpalatable: 0

In my role as a technical officer based at Brian Pastures Research Facility, it is critical to understand how much forage is available for grazing from the end of the growing season (usually May) until the start of the next likely growing season. Most cattle on the research facility are involved in projects, so the capacity to destock during dry periods is often limited. We do forage budgets on a paddock-by-paddock basis taking into account paddock area, land types, land condition, soil and pasture condition, pasture yield (kg dry matter (DM)/ha), and per cent of unpalatable species.

To estimate pasture yield we use photo standards designed for that land type and take quadrat cuts of the dominant grass species to calibrate our estimates. A photo is taken annually in each paddock so we can compare any changes in land, pasture and soil condition over time. This is an example of the information we collect during a forage budget.

These measurements are critical to our decision making, and can answer a number of important questions such as how many grazing days we have for our current herd and how we adjust our herd numbers to ensure this paddock will last for a set period? We do simple calculations using Excel that take into account target residual pasture to maintain adequate ground cover. See the article *Set your stocking rates for winter: a simple assessment* to see

how to do your own calculations. In the above example, this paddock could carry 40 head of breeders (60 adult equivalents) for approximately 48 days before the target pasture residual of 1500 kg DM/ha is reached.

This information is extremely valuable for determining stocking rates and length of grazing in each paddock, and identifying early if further measures need to be taken to ensure target residual pasture will not be compromised at the end of the dry season to maintain land condition.

The time it takes to conduct a forage budget each year is well worthwhile. It has proven to be a valuable grazing management decision tool, which is critical in an industry needing to manage such variable seasons.

Attending a one-day Stocktake workshop is highly recommended. For more information, contact the Stocktake Plus coordinator, Greg Bath, (07) 3708 8466 or greg.bath@daf.qld.gov.au.

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Successful legume workshops highlight the importance of preparation

As the saying goes, you are what you eat. The same notion can be applied to our grazing cattle where the key to a high-quality, healthy diet from sown pastures is to have successful pasture establishment from the very beginning.

Recent workshops run by the sown pastures team in the Department of Agriculture and Fisheries highlighted the importance of planning, preparing and planting the right legumes at the right time of the year as successful legume establishment can significantly improve pasture and livestock productivity and returns. Broadcasting expensive legume seed into established grass pastures is unlikely to be successful and can be a waste of time and resources.

There are four key practices required for successful and reliable legume establishment.

1. Plan for legume-based pastures

To ensure high productivity it is imperative to choose the right paddock, the right legume and the most reliable establishment method. The selected paddock should have high water-holding capacity and high fertility, especially phosphorus, in order to get the best outcome and 'bang-for-your-buck' year-in-year-out. The type and cultivar of legume should be selected based on the soil type, climate and the intended use of the pasture. If the paddock

will not be replanted it is better to plant a long-term perennial legume (e.g. desmanthus) rather than a short-term perennial legume (e.g. burgundy bean). In recent years, obtaining seed of suitable legumes for permanent pasture in Brigalow soils has been difficult, so forward planning will allow you to buy seed early.

2. Fallow to store moisture

Fallowing is essential—it is a time when no plants grow through cultivation or herbicides and helps to store moisture in the soil. However, it is one aspect most people avoid to minimise lost grazing time. The variability of rainfall in inland southern and central Queensland means that it's unlikely there will be sufficient rainfall for reliable legume establishment every year. Storing moisture in the soil during a fallow before planting reduces the large risk of recently-germinated plants dying if there is no follow-up rain. Generally, the drier the location, the longer the fallow must be to ensure at least 50 cm of moist soil prior to sowing.

3. Plant at the right time

Sowing seed at the wettest time of the year maximises the chance of getting follow-up rain, which will accelerate early growth and decrease the time it takes for the paddock to establish and the time before grazing can start. For summer-growing legumes in southern and central Queensland, the summer months provide the highest rainfall probabilities so aim to plant then. It is important to sow quality seed at adequate rates and ensure you use the right strain of rhizobium to get effective nitrogen fixation. Soil-seed contact and sowing depth are also critical—some legumes have small seeds (e.g. desmanthus, stylos) and won't come up if sown too deep. Generally these legumes are broadcast and lightly harrowed, or sown no more than 1 cm deep if using precision planters into prepared seedbeds.

4. Allow legumes to grow and thicken before grazing

The first few months of growth influences the timing of the first graze and the future productivity of the pasture. Weeds and competition from pasture can significantly slow early legume growth and needs to be controlled until the legume is well established. Grazing can start if plants are robust and are not being pulled out of the ground by stock, however, it's better to allow plants to set seed first so they can thicken up during their first few years. If the season is favourable with exceptional



Progardes Desmanthus three months after being sown into prepared strips after fallowing near Theodore.

vegetative growth, then a light, early graze can be beneficial to encourage branching and stimulate flowering and seed production before soil water runs out.

Establishing legumes into existing pastures can be risky but following these key practices will minimise the risk of poor establishment (or even failure) and ensure a more profitable outcome over the longer term.

If you are interested in attending a legume workshop contact Louise Newman, DAF Toowoomba, (07) 4529 4151 or Stuart Buck, DAF Rockhampton, (07) 4843 2605. You can also find upcoming workshops on the event calendar at futurebeef.com.au.

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Caring for your cows—Carli's comments

While there are many articles about weaning, there is rarely a focus on the care of the cows you have weaned calves from.

I am presuming that the cows are from a seasonally-mated herd. For reasons of economy, you must pregnancy-test and cull those cows not in calf. They could be the best looking and fattest cows, but they may also only be calving every 18 months to two years. It is far better to sell these underperformers and only keep the cows that calve every year. They may be leaner and smaller in frame but they are by far the most profitable cows you can own.

The majority of our breeders are joined for 12 weeks, however, heifers are joined a month before the main herd and only get an eight-week joining. This gives them extra time to cycle and reconceive for the following year. From then on they get 12 weeks to get back in calf and any cows that are empty at pregnancy testing or without a calf at branding are fattened and sold. Depending on the season we average between

90 to 95% of cows in calf year in and year out with more than 500 *Bos indicus* breeders.

We look after these productive cows by pregnancy testing at weaning or at minimum eight weeks after the bulls have been taken out—earlier if you are using scanning. The pregnant cows get their annual 7 in 1 or just the leptospirosis vaccine depending on availability. Pestivirus is better given before joining.

All our breeding bulls are given an annual vibrio vaccination at semen testing. Semen testing all working-age bulls means that when you join them they are ready to get the cows in calf. Sometimes a great-looking bull is producing poor-quality or below-standard semen. I would not join a bull at less than 50% normal sperm and then only in a multi-sire mob.

We use Cydectin® LA to drench all our cows as it worms them and also kills ticks so they go into winter without a parasite problem. While any of the drench and tick combinations would work, if you have a spray or plunge dip then a drench and a dip would also work. Taking the calf off the cow gives her a lift but taking worms and ticks out of the equation helps her regain body condition even on lower-quality winter pasture.

The cows pick up well and are ideally in body condition score 4 or better at calving to ensure they return to cycling early after calving. Our tight joining period means that all cows are at much the same pregnancy stage so in terms of nutrition we treat them all the same. However, if you are just starting to pregnancy-test remember that the heavily in-calf cows need more feed to maintain their pregnancy and body condition.

The foetus does 70–90% of its growing in the last three months of pregnancy, so during this stage you need to ensure cows are on good feed, which may mean supplementary feeding with either blocks or loose mix. Your first-calf heifers will need better paddocks or supplements to maintain their body condition before calving and to fall pregnant.

It is also very important that the joining times mean that the cows are calving when your area can expect the season to break so they are on a rising plane of nutrition at or soon after calving. There is nothing worse than seeing a paddock of heifers trying to feed woody little calves when there isn't enough grass around to support them, as often happens with uncontrolled mating. While it might be nice to see early calves, if you had left them for a couple of months and calved later, close to when it historically rains in your area, then both cow and calf will do better and the cow will get back in calf earlier.

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How can you work out what supplement to feed if you don't know what your stock need?

Producer Ben McKenzie says it was money well spent getting near infrared reflectance spectroscopy (NIRS) testing done on his herd.

Ben McKenzie runs 400 head of cattle while his parents run predominantly Merino sheep on their 52 000 hectares near Cunnamulla. After scanning this year, they found they had high twinning rates in the ewes and good overall pregnancy rates in the cattle. However, the seasons hadn't provided considerable pasture growth, leaving concerns about what deficits could be present in the diet.

Ben is keen to make the most of any feed he grows and during the last five years, he and his parents have tried several different supplements but had mainly been looking at the stock to guide supplement decisions.

Recently they started using NIRS faecal testing to inform them what their stock were lacking and determine what sort of supplement they needed.

What is NIRS?

Trying to estimate what cattle are eating by looking at the paddock is nearly impossible and unreliable. There are often many different plant species of varying quality making up the diet of your stock and it's near impossible to work out the amount each is contributing to the diet.



Ben McKenzie with some of the ewes and lambs at Yaralla.

But when you are spending \$400-800 tonne on a supplement, you need to know it is working.

Faecal NIRS is a diet-quality analysis done on a pooled manure sample that reflects what the animals have selected from the pasture. A pooled manure sample is achieved by combining small amounts—e.g. volume equivalent to half a tennis ball—of fresh manure from 10 to 15 different animals.

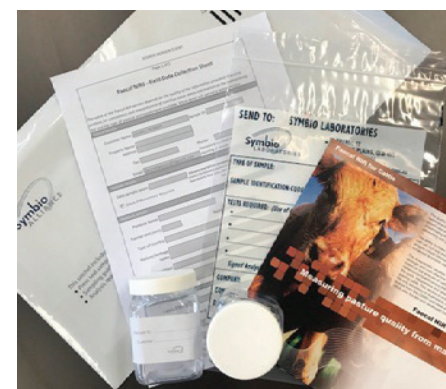
The method involves collecting a pooled fresh manure sample, drying it and sending it to Symbio Laboratories—instructions come with the test kit. The results give you information on nitrogen and protein, forage digestibility and the amount of non-grass (browse) in the diet, along with an interpretation from a qualified nutritionist.

Phosphorus supplementation is expensive so you don't want to use it when you don't have to. Therefore, an optional, low-cost phosphorus test can help avoid unnecessary supplementation or avoid losses from not supplementing where phosphorus is deficient. Low phosphorus can increase the risk of botulism, decrease feed intake and reduce fertility.

All this information, combined with your experience and observations about what the stock are doing, helps you learn more about your paddocks and gives you a good idea of what your cattle need in a supplement.

If you are short on protein, urea might be an option. If you are short on energy, it probably won't be feasible to get enough energy through a dry lick.

The NIRS results prompted the McKenzies to start feeding phosphorus as even their heavier black country had become deficient, likely due to poor seasons and thus, poor phosphorus availability in the pasture. It also helped them



Sample kit provided to collect and post dung samples to the laboratory.

identify energy as the most important nutrient for their heavily pregnant stock, allowing them to look for the most economical way to supply this in a supplement.

Ben is conscious of feeding for a purpose in order to see a return on investment. In this case, the aim was to maintain or minimise loss of body condition score throughout peak demands (early lactation) and, therefore, improve conceptions the following year. NIRS and phosphorus testing helped him refine and target the phosphorus deficiency and use the available feed with confidence.

If you want to know more about NIRS testing, contact your local extension officer or nutritionist before you buy your next batch of lick. It is inexpensive compared with supplement costs and the potential production gains. Visit the Symbio Laboratories website (symbiolabs.com.au) to watch a video on NIRS sampling, or download NIRS forms or phone 1300 703 166.

Read more about NIRS and Ben's experience by visiting futurebeef.com.au/knowledge-centre/assessing-pasture-diet-quality-nirs.

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Cow and calf on Yaralla.