BEEF TALK
Taking stock of your future

FORAGE
Accessing and understanding FORAGE property reports

Phosphorus
How much to feed and when

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How well is your breeder herd performing?
Consider your dung beetles when using chemicals
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Welcome to Beeftalk 53!

This issue features some great reads and project updates including articles on phosphorus supplementation, making sense of meatworks feedback and how to measure your breeder herd performance.

Have you heard about FORAGE property reports? Offering best estimate, up-to-date information on land condition indicators, pasture responses to climate, historical comparisons for your property and more all available for free on the long paddock website.

You can access help and advice by contacting your local beef extension officer.

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We hope you enjoy this issue of Beeftalk and, as always, we appreciate your feedback and suggestions for future articles.

Please email us at info@futurebeef.com.au or visit surveymonkey.com/r/beeftalk48.

Wishing all our readers a very Merry Christmas and prosperous New Year!

The Beeftalk team

Understanding meatworks feedback

Do you ever wonder why one animal receives a better price per kilogram than another? Understanding the meatworks grid and feedback sheet can help you increase profits.

You can use the meatworks grid to target your cattle for the best price per kilogram. The grid is locked in and sent to you when you book cattle into the meatworks. Cattle are graded using criteria such as carcass weight, number of teeth, fat and butt shape.

Generally, carcass weight is around 52 per cent of animal live weight however, the dressing percentage varies with age, sex, weight, fatness, muscularity and pregnancy status. Cattle scales can readily pay for themselves by helping to ensure stock meet weight specifications at time of sale.

Using the meat work grid in Table 1, the best heifer price of $4.80 requires a carcass weight between 300 to 419 kg with 0 (milk) to 4 teeth and P8 fat of 5–22 mm. The best cow price of $4.25 is for a carcass weight of 300 to 419 kg with 8 teeth and 3–12 mm of fat.

Also note the significant price drops for carcasses less than 180 kg and again for less than 160 kg. The price/kg also decreases with heifers as the number of teeth increase.

After slaughter, the feedback sheet provides meat quality information on each animal. By linking your management tag with the animal’s National Livestock Identification System (NLIS) number provided on the feedback sheet you can assess each animal’s carcase performance.

During processing the carcase (body) is halved, and each half is assessed separately against the criteria to determine its grade. For example, body number 1936 in Table 2, the information shows it is female with 4 teeth, P8 fat 15 mm and a butt score of C putting her in the grass fed Jap heifer grid with a grade of I1.

Once the grade is determined, a price for each half of the carcase is calculated. Each half is weighed and priced individually, for example, in Table 2 body number 1936 has a half carcase weighing 149.0 kg. So when multiplied by two, the half is put into 280+ kg weight range giving a value of $4.75 per kg. The second side weighing 152.5 kg is in the 300+ kg weight range with a value of $4.80.

Understanding the feedback provided by the abattoir allows you to assess how well your stock meet market specifications and to identify both short and long term management strategies to improve cost effective compliance.

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How well is your breeder herd performing?

As environmental and market pressures continue to impact on beef profitability, it is critical to have clear breeding objectives and maintain an efficient breeding herd.

Ensuring you are retaining the most productive females in your herd is crucial. You can do this by knowing what information to record and understanding what it means, to support management decisions. Determining how well your breeder herd is performing requires recording key performance traits of individual animals at critical times throughout the year.

Weighing heifers before their first joining can indicate how many are likely to be pubertal with potential to fall pregnant. This can help estimate conception rates and determine

If yearling mating may be viable. Having a controlled mating period, and using foetal aging when pregnancy testing each year, will determine conception rates and identify females that are highly fertile.

Early calvers are more likely to calve each year and not succumb to calving drift. It is important to identify first calf heifers capable of rebreeding within your joining period. This is a heritable trait and retaining these early calvers in your herd will improve your conception rates and profit.

Tracking calving rates and calf losses leading up to weaning helps detect where calf losses are occurring, and identify females that consistently calve each year and rear a calf to weaning. Pairing weaning weights with mature cow weights and tracking over consecutive years can determine a cow’s long-term breeding efficiency. Cow body condition score has a direct link with expected conception rates and is a useful way to determine a cow’s ability to perform under pressure, especially during dry periods.

Over years of monitoring your breeder herd, and continuing to select for economically desirable and heritable traits, you can track how well you are meeting your business breeding objectives to improve herd efficiency and profitability.

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Find out about FORAGE

FORAGE on The Long Paddock website is the place to get free, best estimate, up-to-date information on land condition indicators, pasture responses to climate and historical comparison reports for your property.

The reports combine modelling, climate data and satellite imagery to delineate green or non-green and bare ground with 30 years of historical data. This information is useful for guiding management decisions, working with banks and applying for grants.

Here are a few scenarios and the types of reports that might be relevant:

**You’re looking to forecast future pasture production information to help decide what to do with your stock.**

- **Rainfall and pasture by land type report:** shows the recent history of pasture growth that gives you a historical context for assessing current pasture conditions.
- **Rainfall and pasture growth outlook report:** gives you a quick visual of the chance of above-average, average or below-average rainfall and pasture growth for your property (lot/plan).
- **Drought assessment information report:** provides several regional maps that can help identify areas of higher rainfall, pasture growth and green feed for buying, selling or agistment.

**You’re looking to purchase a property and want to know more about the land types and how it may respond to rain and management practices in the short to long term.**

- **Indicative land type report:** shows the main land types for the lot/plan. It also has the land type code that corresponds to FutureBeef’s land types of Queensland information and a shapefile that can be used in a mapping program or in VegMachine.

**You’re planning a new fence line and need to work out the most sensitive areas of your property.**

- **Indicative land type report:** helps to identify land types present on your property.
- **Foliage projective cover report:** shows the density of tree cover across the property, which can guide clearing and regrowth control plans or grazing management.
- **Ground cover report:** shows the current seasonal and the historical minimum ground cover across the property, as well as what sort of cover it is. This can help determine over-grazed and under-grazed areas for strategic fence line placement to encourage use of under-grazed areas or protection of over-grazed areas.

**You want to know how you stack up against your neighbour and it’s also been five years since you took over from your parents.**

- **Ground cover regional comparison report:** this is your ‘over the fence’ report. It compares the performance of the selected area to regional (25 km radius) ground cover percentiles for each land type, as well as a whole property comparison. It also relates ground cover percentage, compared to the region percentage cover.
- **Ground cover report:** similarly it helps you to know the high and low areas of ground cover across your property.

**VegMachine** is an online tool (vegmachine.net) that uses satellite imagery to summarise decades of ground cover change. It allows you more options to draw your own property/paddock areas to compare historical ground cover (green, non-green, bare) and rainfall. A FORAGE report generated from VegMachine has detailed land type analysis similar to the regional comparison ground cover report.

These sophisticated reports don’t replace your experience and what you can see in the paddock. They often support what you already know, together with historical and regional comparisons. It is important to use the reports together, for example ground cover with rainfall, as well as considering other factors like heavy pasture utilisation around watering points and the intended or unintended consequences of fire.

Information from FORAGE and VegMachine can also be useful for working with finance organisations, applying for grants or working towards best management practice.

These are only a few of the reports currently available, so check them out for yourself at longpaddock.qld.gov.au/forage and vegmachine.net.
Consider your dung beetles when using chemicals

Dung beetles are highly beneficial in cattle pastures. Australian dung beetles either tunnel dung underground or roll it away in balls for burial. This helps return nutrients back into the soil, reduces nutrient run-off and promotes greater pasture production.

Cattle dung is also a breeding site for buffalo fly, biting midges and worms, so dung beetle activity dispersing the cattle dung actually helps reduce parasite populations.

A number of chemical treatments available for the control of cattle parasites and pests can harm dung beetle survival, breeding capacity and activity. These parasiticide chemicals can be divided into three key groups; endectocides, ectocides and anthelmintics.

Endectocides treat a range of internal and external parasites and include ivermectin, doramectin and moxidectin. Ectocides treat external parasites and include ivermectin, doramectin and moxidectin. Ectocides treat a range of internal and external parasites, and anthelmintics internal parasites. The different chemical groups and chemical actives registered for application to cattle and their likely effects on dung beetles are listed in Table 1.

Dung beetle populations are particularly vulnerable during their early breeding season in spring. To protect your dung beetle population it is recommended you limit use of potentially harmful chemicals during October to March when dung beetles are most active.

Not all chemicals are harmful to dung beetle populations. The Cydectin range for cattle, for example, has been tested and found to have no known impact on dung beetle survival or activity at any time throughout the year. ‘The cattle parasite atlas – A regional guide to cattle parasite control in Australia’ makes recommendations on strategic chemical use for parasite control. Some considerations include:

- Is it possible for you to change to less toxic chemicals?
- Target treatment to specific animals or groups of animals. Some animals are more susceptible to parasites than others, by treating only the susceptible animals you can reduce overall chemical use. For example, weaners are most susceptible to worms; bulls will generally carry the heaviest populations of buffalo fly.
- Consider method of application.
- Consider timing of application as mentioned above.
- Reduce frequency of treatment – only treat when necessary.
- Use recommended dosage rates.

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Table 1. Costing phosphorus

<table>
<thead>
<tr>
<th>Chemical Group</th>
<th>Chemical active</th>
<th>Use</th>
<th>Effect on dung beetles</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Synthetic pyrethroids (SPs)</td>
<td>deltamethrin</td>
<td>Buffalo flies, ticks, lice, biting flies</td>
<td>Yes</td>
<td>Flumetoxin may have less impact than other SP</td>
</tr>
<tr>
<td></td>
<td>fenvalerate</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>permethrin</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Monocarboxylates (MCA)</td>
<td>fenvarelic acid</td>
<td>Widely used against ticks, worms and effects on buffalo flies and lice</td>
<td>Yes (most)</td>
<td>Deltamethrin, fenvalerate, permethrin, permethrin</td>
</tr>
<tr>
<td></td>
<td>doralactin</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>epomectin</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Organophosphates (OPs)</td>
<td>disatomon</td>
<td>Buffalo flies, ticks, lice</td>
<td>Limited data</td>
<td>Most exceed so unstable, not be used</td>
</tr>
<tr>
<td></td>
<td>chlorfenuron</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>etofenprox</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Growth regulators (GRs)</td>
<td>flubidion</td>
<td>Ticks, lice</td>
<td>Probably not</td>
<td>No dung beetle data available. Favored in bees but not thought to affect dung beetles</td>
</tr>
<tr>
<td></td>
<td>diflubenzuron</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>enoprophos</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Amidines</td>
<td>Amizan</td>
<td>Ticks</td>
<td>No data</td>
<td>No data</td>
</tr>
<tr>
<td>Anthelmintics</td>
<td>levamisole</td>
<td>Worms</td>
<td>No</td>
<td>No effects on dung beetles from cattle</td>
</tr>
<tr>
<td></td>
<td>albendazole</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 2. Chemical groups and chemical actives contained in cattle parasite treatments and their likely effects on dung beetles.

How much phosphorus, when?

The biggest benefit from phosphorus supplements is on P deficient country during the wet season when cattle are growing on good quality pasture and cows are usually lactating.

This is when phosphorus becomes the primary limiting nutrient in the diet rather than energy or protein. The approximate daily phosphorus (P) requirements and P supplementation targets for a 450 kg breeder are given in Table 1. Higher target figures reflect situations of greater P deficiency and classes with higher P requirements associated with late pregnancy, lactation, high growth and replenishment of bone reserves in breeder cows.

Table 1. Approximate phosphorus requirements and supplementation targets for a 450 kg breeder

<table>
<thead>
<tr>
<th>P requirement (grams/head/day)</th>
<th>P supplementation targets (grams/head/day)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Performance lower - higher</td>
<td>Wet season marginal - deficient</td>
</tr>
<tr>
<td>15</td>
<td>18 - 24</td>
</tr>
<tr>
<td>20</td>
<td>3 - 7</td>
</tr>
<tr>
<td>25</td>
<td>2 - 6</td>
</tr>
</tbody>
</table>

In the dry season protein is often the primary limiting nutrient. Dung samples tested using Near Infrared Reflectance Spectroscopy (NIRS) help to confirm if and when protein deficiency occurs for different country and paddocks. Protein supplements usually come with some phosphorus which can be useful for breeders with replenishing bone reserves, pregnancy and lactation.

Phosphorus supplements may be commercial or home-made. Typical phosphorus sources include dicalcium phosphate (DCP) and kynofos 21. These can be mixed with salt and/o or molasses to encourage and regulate intake.

Calculating the cost per unit of phosphorus (e.g. cost per kg P) helps in evaluating value. For example which is the better value between $18 for a 20 kg bag with 4 per cent P, or $26 for a 25 kg bag with 8 per cent P. Table 2 shows how to calculate $/kg P, plus daily quantities and costs. The figures are examples only but it pays to shop around. If the label analysis gives dry matter (DM) figures then enter DM and phosphorus percentage in columns E and F. If analysis indicates ‘as fed’ then enter the phosphorus percentage directly at column G.

This shows the $26 bag is much cheaper per unit of phosphorus and less is needed to supply five grams of P. Of course other factors can influence the choice—often including if the cattle will eat the target amounts of the supplement.

This can be easily monitored with some simple record-keeping. Record the kilograms supplement fed, the number of head of cattle, and how long it lasts. The average intake can be calculated to see if intakes are close to target—for example 60 kg / 100 cows / 7 days = 86 grams average per head daily x 7.6 per cent P = 6.5 g P/head/day.

The returns from supplementing P will be lower for “marginal” country than for “deficient”. For marginal P country the best investment in P supplementation is likely to be by focussing on the replacement heifers and first and second calf cows. These are the most sensitive classes of breeder cattle to P deficiency.

Reference: Phosphorus management of beef cattle in northern Australia, Meat and Livestock Australia.

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Table 2. Costing phosphorus

<table>
<thead>
<tr>
<th>$/bag</th>
<th>kg/bag</th>
<th>bags/tonne</th>
<th>$/tonne</th>
<th>DM%</th>
<th>P%</th>
<th>P%</th>
<th>P%</th>
<th>kg P/T</th>
<th>$/kg P</th>
<th>Lick (g) to give 5g P</th>
<th>Cost c/head/day</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>B</td>
<td>C=1000 x D</td>
<td>D=A x C</td>
<td>E</td>
<td>F</td>
<td>G= E x F</td>
<td>H=(G x 10)</td>
<td>J=D / H</td>
<td>K=5x100 / G = K / 10,000 x D</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>20</td>
<td>50</td>
<td>900</td>
<td>95%</td>
<td>4</td>
<td>3.8</td>
<td>38</td>
<td>$23.68</td>
<td>132</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>25</td>
<td>40</td>
<td>1,040</td>
<td>95%</td>
<td>8</td>
<td>7.6</td>
<td>76</td>
<td>$13.88</td>
<td>66</td>
<td>7</td>
<td></td>
</tr>
</tbody>
</table>
Drought assistance and looking at future drought resilience

Producers are very experienced with the big droughts and then the big floods that often spell an end to drought. However, even the most resilient and well-prepared producers and their communities struggle in a long drought such as this one.

Queensland has been drought-affected for almost six years with 58.1 per cent of the state currently drought-declared. In the past five years, the Queensland Government has spent more than $670 million in various kinds of assistance.

The Queensland Government continues to support drought-affected producers while also looking at ways to make improvements for the future including increasing resilience and preparedness. In August it was announced that the Drought Relief Assistance Scheme (DRAS) would be increased including:

• subsidies for freight including distance travelled up to 2000 km
• increasing the maximum claimable when entering a sixth year of drought of up to $50,000 per financial year with an approved Drought Management Plan in place
• increasing assistance to the hired carrier freight rate being either 50 per cent of the loaded portion of the transport cost, or 20 cents/tonne/kilometre.

Other announcements included additional funding for mental health services and a small business financial counselling service in Queensland drought areas, just like the rural financial counselling service helps producers. The current Drought Assistance Package will continue for the duration of this drought.

While drought is foremost in people’s minds, now is the best time to work with industry and the community to review government, industry and community actions and think about improvements for preparing for future droughts.

An independent panel has been appointed to run a Drought Program Review. The panel conducted regional forums and sought online submissions through September and October and are considering the feedback. They will report their recommendations to the government in early 2019.

The Queensland Government also has the flagship Drought and Climate Adaptation Program (DCAP) to help prepare for and better manage drought and climate risks. Climate scientists, industry and government are working to improve climate forecast information and build decision support tools tailored to producer needs to help build preparedness and resilience.

Minimising biosecurity and animal welfare risks in drought

Drought can increase the risk of biosecurity and animal welfare issues on your property.

Queensland’s Chief Biosecurity Officer Malcolm Letts said the impacts of drought are being felt deeply by property owners across Queensland, but there are steps they can take now to avoid those impacts turning into long-term issues.

“The welfare of animals in drought is a priority, and so to ensure livestock receive adequate food supply, many producers import fodder or other feed products from interstate,” Mr Letts said.

“When importing food from new sources, landowners can minimise the risk of spreading invasive plants on their property by being vigilant and acting quickly.”

Biosecurity Queensland’s top tips for stopping the spread of invasive plants are:

• control known invasive plants quickly when found
• incorporate pest prevention into your property pest management plan
• always clean down your vehicles and equipment to prevent spread
• regenerate disturbed areas to prevent weed establishment.

As part of normal dry season management producers can implement a number of steps to protect the welfare of their livestock, including:

• further reducing stock numbers as the season deteriorates
• weaning early
• supplementary feeding
• segregating animals based on size and strength to minimise competition for supplements
• where mating is controlled, deferring mating
• humanely destroying severely weakened animals.

Mr Letts said producers can also be faced with a decision around whether to transport drought-affected livestock, and if those animals are fit-to-load.

“In general, weak livestock should not be transported due to the additional stress it may cause them. However, during prolonged dry periods the only viable management option for weak livestock may be transport to agistment or sale.”

Risks can be managed by:

• planning—consider all aspects of the intended journey, including mapping the journey, so weakened livestock are transported over the shortest possible distance, and identifying potential spelling facilities
• preparing—make sure only fit livestock travel, and feed animals a high-energy, fibrous ration to strengthen them for transport
• handling—the responsibility for the care of animals during transport lies with the driver. Once unloaded, the person receiving them accepts their care. You can minimise stress and injury by giving weakened animals sufficient time to load quietly and unload at their own pace, and monitoring their condition.

Whether in drought or during normal season management, biosecurity risks can be greatly reduced through implementing a well thought out farm biosecurity plan. For more information on biosecurity planning, call Biosecurity Queensland on 13 25 23 or visit biosecurity.qld.gov.au.
Clearing the confusion around Queensland’s cattle tick treatment arrangements

Queensland’s cattle tick management framework has now been in place for two years. However, a recent series of community meetings found some producers are still uncertain about the requirements.

The changes were introduced after wide ranging consultation during the development of the Biosecurity Act 2014.

It was the first time in 30 years that such a significant and detailed review of cattle tick management in Queensland had been undertaken.

The new framework is a balance between ensuring the integrity of the cattle tick free zone, reducing regulatory burden and facilitating the movement of cattle in Queensland.

It is worth noting the arrangements have been welcomed by many producers allowing them to realise significant cost savings, through greater flexibility around managing stock movements.

Biosecurity Queensland has a long history of working with producers to effectively manage biosecurity risks such as cattle tick.

Cattle producers, processors and the community can be assured that Biosecurity Queensland are closely monitoring the effectiveness of the new framework to ensure the cattle tick free zone is in no way compromised.

So what are the laws for crossing the tick line?

The new system largely reflects the old legislated requirements. No rules were relaxed. However, some changes were made to provide greater flexibility to the industry.

For example, when the cattle tick management framework was introduced in 2016, the previous third party provider system was expanded to allow the inspection and treatment regime to be completed at places other than traditional clearing dips on the cattle tick line.

Many producers have facilities equal to, or better than, most clearing dips and the reliance on dipping in chemicals was perpetuating the issue of chemical resistance.

Producers choosing to use their own facilities to clear livestock must follow strict protocols to ensure an accredited certifier can appropriately inspect and treat the cattle.

Feedback from producers indicates this has been very useful in drought affected areas where the ability to clear livestock on property and transport direct to the destination has greatly assisted the welfare of livestock.

Treatments used on property can include pour on and/or injectable products, in addition to the traditional plunge dip chemicals.

As was the case with the previous third party provider system, cattle moving to a property in the cattle tick infested zone, other than to a meat processing facility or feedlot, must be inspected and chemically treated by an accredited certifier.

The current accredited certifier system is backed by a rigorous training program and accredited certifiers are audited yearly to ensure the system is working. There are more than 80 accredited certifiers across Queensland.

Producers purchasing cattle from high-risk areas should take all reasonable and practical steps to ensure they don’t bring in tick that might adversely impact their business.

While the use of chemicals is still the main control option for cattle tick, the Biosecurity Act provides flexibility to manage the risks in a variety of ways.

Over the life-cycle of the cattle tick, there are opportunities to manage the risk of spread into the cattle tick free zone without having to use chemicals.

For example, as part of a producer’s biosecurity plan, isolating new introductions to a property is a key step in mitigating risks of cattle tick infestation.

The protocol for moving cattle to feedlots and abattoirs can also be used to manage the risk of cattle tick, as the movements are into an environment that will not support the survival of the cattle tick.

Cattle are still subject to an inspection process but can be assessed as lower risk because of their destination.

This means the appropriate risk reduction protocols can be applied.

Vaccinations and worming treatments should also be considered to mitigate against disease and parasites.

Property owners are reminded they are responsible for managing all of their biosecurity risks, including cattle tick. As a matter of good biosecurity practice, cattle tick should be treated the same as any other disease risk faced by producers.

Further information about the new options are available at daf.qld.gov.au, or by calling 13 25 23.

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