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Fertility drives herd direction

Selections made today impact herd profitability in the future

Choosing new bulls wisely

Each time you make a bull selection or purchasing decision, the bull put into your herd today drives the direction of that herd and the profitability of your beef business for up to 16 years.

Your bull is driven by the number of animals it can sell, their weight and price, and the costs of producing those animals. Fertility is a critical profit driver for herds in northern Australia. Improving bull performance can help you increase your profits.

During the years 1992 to 2003, a major bull fertility research project called the Bullpower project was conducted across northern Australia. There were more than 1000 bulls, aged two to four years, studied in the field from breeds including Santa Gertrudis, Sah Brahman, Brahman and Belmont Red. The bulls were subjected to physical and reproductive examinations prior to mating.

Many of these bulls were mated through multiple-sire joinings and mating records were collected.

Key findings from the Bullpower project:

- Sperm morphology of bulls has shown that an important pre-mating predictor of calf output of bulls in multiple-sire situations is in reds indicus and bulls indicus-cross in northern Australia.
- These studies showed that in general, bulls with <50% normal sperm show few calves, while bulls with high call output had >70% normal sperm.
- Normal sperm was poorly represented in bulls that died from sexually malting (14-24 months). How over the repeatability of normal sperm was high in Brahman and composite once cows reached sexual maturity.
- Sheath depth in Brahman bulls was negatively related to calf output—that is, deeper sheath bulls sired fewer calves.

These results have been repeatedly demonstrated in practice in herds across northern Australia.

Making progress with genetic tools:

- Real progress requires making long-term genetic gains when the progeny of the stock used this season produce more calves per year than previous generations. As part of genetic gain, these programs also need to meet market objectives. Beef CRC Estimated Breeding Values (EBVs) are the most accurate genetic tool to make long-term gains in growth, fertility and carcass traits. It is critical to use balanced selection across the economically important traits.
- Sire times EBV is superior to the actual scrotal size measurement, and a valuable tool for identifying bulls that will produce daughters which reach puberty earlier.
- Days to calving EBV (available for some breeds) are a selection tool to address a quicker re-breeding after calving. Select bulls with negative figures.
- Use growth EBV to improve growth rate (i.e. best to grow replacement heifers, heavier sale sires).
- Use carcase EBV to improve carcase traits.
- Use minimum standards. Use breed EBV data (e.g. average, top 10pc to identify above-average animals).

SUMMARY

Remember the bull put in the herd today drives the direction of that herd and your profitability well into the future. Research has shown female reproduction traits in tropical genotypes are heritable and that genetic progress can be made through selection of sires.

Use balanced traits in selection. Select for traits that will not compromise tropical adaptation. Female fertility can be improved through genotypes from the selected sire. Use bulls with above 70pc normal sperm at 24 months for both genetic improvement in the property and for those bulls that are to be single-site mated or used for semen collection for processing.

Sire times and days to calving EBVs are available for identifying superior genotypes for fertility. Phenotypically, bulls should be used above average scrotal size at 12 months and again prior to pre-mating VBBSE.

NABRC Medal Winners committed to northern Australian beef industry

NABRC Medal Winners display depth of commitment to northern Australian beef industry

THREE beef industry contributors were presented with NABRC medals recently at the Northern Beef Research Update Conference held in Cairns.

The medals acknowledge the achievements of people in North Queensland in the field of beef: communication/extension – John Bertram.

Research and development – Dr Stu McLennan (production producer medal). Paul Smith.

John Bertram has devoted the past thirty nine years to the northern beef industry in the field of practical genetic improvement and bull selection.

John joins past extension medal winners Bernie English (Genesian Meat), and Brian Fleson (DOOFAV Charters Towers) in honour for their contributions to the beef industry.

Dr Stu McLennan has dedicated his career to beef nutrition research for northern Australia. Research highlights include being part of the team that developed MBV and supplementing regimes for area which now underpins the northern beef industry.

The recipient of the Producer medal, Paul Smith of ‘Tieyon Station’. Alice Springs, also acknowledges the extension efforts of John Bertram who worked with his father during the late 80s on station AI programs as a catalyst for his being involved in research, development and extension activities. Amongst many achievements Paul is highly commended for his role in the ground breaking heifer research that was carried out at Tieyon Station from 2005 through to 2012.

Source: NABRC
Evaluating current business practices

Producer profile

Rodney Barrett and Terry and Susan Vail – Salisbury Plains

RODNEY Barrett, his daughter Susan Vail and her husband Terry form the management team at Salisbury Plains, located on the Bruce Highway, just north of Bowen on Queensland’s eastern coast. It encompasses 22,500 hectares of coastal plains on red clay duplex soils to sandy loams. Salisbury Plains operates a seedstock breeding enterprise, a commercial breeding enterprise and a fattening enterprise with an average herd size of 4500. The management team at Salisbury Plains are real students of agriculture. They have had a strong association with QDAAF (formerly DPI) and CSIRO for the past 45 years, and have identified and utilised many good management practices in their business.

They are good land managers, acquire sound knowledge of cattle nutrition and place an emphasis on good management of their breeders for fertility outcomes. In October 2012 they attended a Breeding EDGE network workshop in Bowen. They acknowledge the workshop as a tipping point in their desire to develop these objectives.

“They initially approached the Breeding EDGE thinking we would have already been introduced to much of the content,” Susan said. “But over the three days we were introduced to new information on breeder management, genetics, selection and performance measurement that has changed the way we approach many of the management considerations in our business.”

“The initial training through the Breeding EDGE and the resulting follow-up by Alan Laing has set the foundation for a widespread change of management focusing on herd performance, maintenance of body condition and genetics.”

In the six months following the workshop, the team has been working hard to evaluate their current business model and performance, and solidify their pathway forward. In doing so, they have developed the following business objectives as a foundation of their future endeavours.

SEEDSTOCK HERD OBJECTIVES:
1. Breed and sell polled Brangus bulls with group Breedplan EBVs in the top 10pc.
2. All bulls to pass a Bull Breeding Soundness Evaluation (BBSE) and will be padock sold.

NUTRITION OBJECTIVES:
1. Manage animals in body score condition 3 or above.
2. Provide supplementation to target animals in the most effective way.

MARKETING OBJECTIVES:
1. Breed and sell 2.5-year-old steers that will meet Meat Standards Australia (MSA) specifications to obtain premium price.
2. Breed and sell calve heifers that will meet MSA specifications.
3. Overall, breed better calves as younger ages.

With the help of QDAAF we are working to develop a management strategy that will lead us to meet these objectives. “The Breeding EDGE was the catalyst that has built our desire to develop these objectives. Yet the follow-up advice from the department’s FutureBeef staff has been of greater importance, as this has supported and guided us through the day-to-day decision-making that makes implementing changes that are significant and/or costly more risk averse.”

OVERALL REPRODUCTIVE OBJECTIVES:
1. Join bulls at 2.5pc.
2. Mating period of 100 days for mature breeders.
3. Achieve effective 84-day mating period in heifers.
4. Tighten conception to 80pc in the first two cycles i.e. first 45 days of mating.
5. Pregnancy percentage of >90pc.
7. Weaning rate of >85pc.
8. Achieve average weaning weight of 200kg.
CQ producers weigh up forage research

THE second phase of a project co-funded by QDAAF and Meat and Livestock Australia (MLA), to examine the relative profitability of alternative forage options for finishing cattle in the Fitzroy Basin area, is in its final year.

The objective of the “High-output forage systems for meeting beef markets” project, is to provide research data and recommendations on integrating and managing high-quality sown forage systems in Central Queensland.

Twenty forage sites have been established and studied on cooperating producer properties across the Fitzroy Basin since the project started in 2011. The forages studied include the annual varieties of oats, forage sorghum and legume-grass pastures – butternut y pea-grass, leucaena-grass and grass pasture (buffel grass or native pasture, as appropriate). The latter is the baseline for comparing productivity to the higher output forage options.

An additional three forage oats sites are being studied over the winter, and data collection from perennial conditions, for comparison.

This will provide a better understanding of the expected forage, animal and economic performance under management conditions that represent commercial beef properties, and at the key drivers of profit tability within these grazing systems.

In addition to individual margin gains for each of the co-operator sites, gross margins have also been conducted for case study scenarios based on what is deemed best-practice management and average seasonal conditions, for comparing whole farm economic studies are also being developed based on actual co-operator data to examine the effect of different high-output forage systems on whole farm profitability. Scenarios under consideration in the case studies include substituting annual forages, animal and economic performance when forage systems are still unutilised.

There is a wide range in the profitability of annual and perennial forage options in the Fitzroy Basin, depending on management, seasonal and market factors.

Both annual forages and perennial legume-grass pastures can improve production output and profit tability when appropriately implemented and managed. Under current market and cost conditions, perennial legume-grass pastures have an economic advantage over annual forages.

Three herds across the region will be held in February to March 2014 to present the project 9 findings and demonstrate the tools developed as part of the project, such as the economic spreadsheet calculators.

Information in the spotlight:

**KEY MESSAGES:** PHOSPHOROUS NUTRITION

*Phosphorus management of beef cattle in northern Australia include:

- Animals that most need phosphorus are growing stock, late-pregnant heifers and cows, and lactating cows.
- Deficient animals respond best to P supplement when their diet has adequate protein and energy. This is why P supplementation is most effective during the wet season.
- Signs of acute phosphorus deficiency include bone chewing, broken bones, piggish, poor body condition, lameness and bad temperament.
- There are no simple diagnostic tests for the P status of cattle. Blood and faecal P are the most useful indicators. P levels are another indicator.
- Deficient cows are related to soil P status. As a general rule, where soil P levels:
  - are deficient (5 mg/kg or less), all classes of stock are likely to respond to feeding P.
  - from marginal (6–8 mg/kg), young breeders are likely to respond to feeding P.
  - exceed 8 mg/kg, the economic benefit from feeding mature cows diminishes.

- If P is fed over the wet season on drier country:
  - young growing stock can increase their growth by 30–40 kg/yr.
  - breeders can increase weaning rates by 10–30 percent.
- Responses to P supplement may be lower if animals running on P-deficient country have access to adjacent areas of high-P soils, such as frontage country.
- Supplementation should be compared on the cost of P per kg of gain, the practicality of feeding additional P and on whether the animals will be able or willing to eat target amounts.
- A typical wet season loose-mix P supplement should contain at least 8 percent P and also non-protein nitrogen (e.g. urea).
- On drier country, lowering the stocking rate will not reduce the need to feed phosphorus.
- Where the native pasture on deficient country contains suff cient soil P, cattle may respond significantly to P supplement during the dry season because of the extra protein in their diet.
- Because cattle eat more pasture when P supplements are fed, stocking rates should be reduced to avoid overgrazing.

- The economic benefit is from feeding P as maximised when done in conjunction with other aspects of good herd management.
- The full document from which this summary was taken is available at: www.mla.com.au/Publications-tools-and-events/Publications
  
- To order a free hardcopy phone the MLA membership services hotline (18000 617 717 or email membership@mla.com.au (refer Publication code 9781741919561).

**NEW POISONOUS PLANTS BOOK**


Cattle grazed forage oats in the Taranum-Wandoan region, one of the sites monitored as part of the “High-output forage systems” project.

**Is your herd protected from 3-day sickness?**

As the weather creates peak conditions for disease-transmitting insects, cattle producers in Queensland are being urged to protect herds from one of the most costly insect born diseases, bovine ephemeral fever (BEF).

BEF, otherwise known as 3-day sickness, is a viral disease of cattle transmitted by biting insects such as midges and mosquitoes. As the name implies, BEF symptoms may only last a short time, but infection can result in long-term economic losses.

BEF is a particular concern in larger, valuable classes of cattle and can cost the industry millions of dollars per year.

Three-day sickness can be more severe in bulls, fat, well-conditioned cows and pregnant and lactating cows. It results in serious economic losses through reduced milk production, weight loss, lowered fertility, mum-mothering of calves and deaths. These losses take time to regain and can severely impact profit tability of cattle enterprises.

In all of the economic burden of 3-day sickness, Meat and Livestock Australia’s donor company co-funded research to examine the efficacy of the current BEF vaccine against current strains of the BEF virus. However, it is important to recognise that immunity is not instantaneous.

Based on our research a peak seasonal response is expectd to protection generally occurring around two to four weeks after the initial vaccination course, said Dr Delany.

“The optimal time to provide the initial dose is generally in the months leading up to summer, with a second dose two to four weeks later. In animals that have been vaccinated in previous years, an annual booster eight to 10 weeks before peak BEF season is recommended.”

Producers should speak to their veterinarian for more information on an appropriate vaccination plan for their herd.

MLA’s donor company generates funds through commer- 
cial agreements with clients and the publishers of MSF. No profits were used to implement this BEF vaccines research.

Vanessa Ebrum, professional sales representative, Zoetis, Animal Health, 0418 482 269.
GOVERNMENTS around the world are attempting to reduce the amount of greenhouse gases in the atmosphere. Australian beef producers (responsible for 11 percent of Australia’s reported emissions) can reduce greenhouse gas emissions through a range of carbon farming practises. The Climate Clever Beef project, led by DAFQ’s research and FutureBeef team, is assessing the business case for integrating carbon farming practices into beef businesses. Can a beef business sequester carbon and reduce greenhouse gas emissions? Is carbon farming an opportunity, a new income stream, or a distraction from productivity with no profit-ability or efficiency advantages? These are important questions the project is seeking to clarify, with the help of Queensland beef business managers.

A PRODUCER CASE STUDY – OAKLANDS

A case study site has been established on the 10,570 ha Oaklands property owned by the Dunne family, 80km south of Duaringa, in Central Queensland. The case study will involve on-ground assessment of the pasture, land condition, woody vegetation, soil carbon and beef herd dynamics. Whole-property modelling will be used to assess scenarios over time and across the property. (Photo 1 above) The treatments being measured will utilise the current woody vegetation variation at the site: remnant box woodland, retained 10-year-old box regrowth, recently cleared 10-year-old box regrowth and completely cleared with Graslan herbicide 10 years ago (Photo 1 above).

For each vegetation type, two grazing treatments have been applied – continuously grazed and wet season-spelled. Utilising the existing woody vegetation differences will allow comparisons of soil and vegetation carbon to be made at the start of the project and vegetation carbon change and land condition over the three years of the project.

RESULTS TO DATE

Tree carbon assessments indicate that remnant woody vegetation contained five to eight times more carbon than 10-year-old woody regrowth, indicating substantial scope for carbon storage by allowing regrowth vegetation to regrow (Fig. 1 top of page). Pasture assessments in May 2013, six months after spelling began, indicated improved pasture biomass with a six-month spell in the regrowth and recently cleared areas (Fig. 2 above) and a slight improvement in land condition.

Two herd scenarios have been initially evaluated (Table 1 below). The base herd scenario (current situation) has 1005 breeders mated and 68pc weaning rate. Spayed heifers go to a separate fattening property before 24 months. Cull cows are spayed and sold straight to the meatworks after fattening. The weaner steers go to the fattening property.

Management sees the current stocking rate as unsustainable due to low pasture biomass and poor land condition. In addition, if the decision is made to retain regrowth for carbon trading, stocking rates will need to be lowered. The second scenario involves having a lower stocking rate (896 breeders) and supplementing the cows for three months in the dry season, increasing weaning rate to 75pc. Herd gross margin declined by 7pc with a reduced stocking rate, even though gross margin per adult equivalent improved by 4pc.

NEXT STEPS

Ongoing evaluations will assess the balance between profitability, emissions and land condition for a range of woody regrowth retention levels, stocking rate adjustments and supplementation.

ACKNOWLEDGEMENTS

Thank you to John Dunne and family and the Mimosa Creek Landcare Group for their support and enthusiasm for the project. This project is supported by funding from the Commonwealth Government’s Action on the Ground program.
Oaklands day gets clever with climate

Producer profile – John and Alicia Dunne

JOHN and Alicia Dunne recently hosted a field day at Oaklands, 70km south of Duaringa. The field day was to showcase their involvement in the Climate Clever Beef project’s carbon-farming case studies (see previous article).

While Oaklands (10,500ha) is run by a manager, John and Alicia manage neighbouring Mimosa Park (3000ha) and have some involvement in the running of Oaklands. John says the Mimosa Park and Oaklands land types are “everything but the good stuff – the country is predominantly eucalypt-torrego country”.

Stevie and growing heifers are transferred to fattening country at weaning, and the extended Dunne family also runs a farming operation on better country in the Duaringa district.

When asked why they are involved in the trial John responds, “Having on-ground information that is relevant to your local area is invaluable”. He also offers a range of free webinars (online seminars), as well as their other involvement in the climate project.

When the winning projects come out John is pleased to be involved in the project, “There is a lot of enthusiasm in the industry. FutureBeef website, www.futurebeef.com.au.

Luke, John and Colin Dunne inspect the Oaklands carbon-farming on-farm demonstration site.

A world of beef information at your fingertips

FutureBeef harnesses technology

Did you know you can sit in the comfort of your home or office and summon a world of beef information to be delivered electronically to your computer, iPad or smartphone?

This is just one of the ways the FutureBeef program brings the latest research-based information to beef producers.

FutureBeef regularly runs webinars, distributes ebulletins and publishes material on its website and through social media channels, in addition to directly working with producers in training workshops, information days, demonstration sites and field days.

Webinars are a great way to hear the latest information from anywhere in the world, plus they allow you to engage with the speakers through online polls and typing questions that can be answered by the presenters.

You can participate in the webinar using a computer (Mac or PC), iPad, tablet or smartphone. To do so, you just need to register for the event by going to the event’s web page and entering your contact details.

A personalised email will then be sent to you by the clever system, though sometimes that will be put in your junk folder, so watch out for that.

In that message is the link you will need to click on to join the webinar at the specified time. It is often best to join 10 minutes early in case you need to download some extra files on your device.

When the webinar commences, you watch the presentation on the screen and listen either through your device’s speakers or on the telephone.

Webinars are usually free for you to attend, with the only real cost being any data usage (usually fairly minimal) and if you need to phone a long-distance number (though toll-free numbers are often provided).

A recent BeefConnect webinar about the Pasturefed Cattle Assurance System, brought to you by the QDAFF FutureBeef team and Beef Central, had more than 600 people across Australia register for it, and not one person needed to travel to participate in it.

While not everyone is able to attend the live event, the sessions are recorded and placed on the FutureBeef website, together with the presentation slides for anyone to view.

To see all our webinar recordings and other multimedia presentations, go to www.futurebeef.com.au/resources-multimedia.

Toowoomba, (07) 4688 1125

John James, eExtension Team Leader, QDAFF Pasturefed Cattle Assurance System, brings to you by the QDAFF FutureBeef team and Beef Central.

The FutureBeef website is also your one-stop shop for beef information across northern Australia. It contains over 300 pages of information, including many videos and webinar recordings.

Check out the upcoming events, information on Producer Demonstration Sites, and contact details at the FutureBeef website. Use the search box to find information quickly and easily.

Social media is a great way to hear the latest news and views of interest to the northern Australia beef industry.

Join the hundreds of people who have already engaged with us through Facebook and Twitter – just search for FutureBeef and you will find us.

John James, extension team leader, QDAFF Pasturefed Cattle Assurance System, brings to you by the QDAFF FutureBeef team and Beef Central.

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PRODUCTION from sown pastures in Central Queensland, particularly buffel grass pastures, have been declining for many years. This reduction in production in most cases can be attributed to a process called pasture rundown, where the plant’s available nitrogen supply declines over time, effectively starving the plant for nitrogen.

One way to determine how rundown pastures are, and investigate the magnitude of benefit that can be achieved by improving nitrogen supply, is to apply nitrogen fertiliser to smaller areas, as trials, across one or more paddocks. The benefit of using one area for this exercise is that all the nitrogen is readily available, so the response can be seen over a short period of time, rather than years, such as with organic fertilisers.

WHAT DID WE DO?
Over the past two summer seasons, we have been investigating the benefit of improving nitrogen supply by supplying small amounts of urea to interested graziers, all of whom have attended one of the Sown Pasture Rundown Workshops coordinated by QDAFF. Graziers have marked areas 20m long, and using a hand sprayer distributed urea in a strip 4m wide. Some have replicated these strips in the same paddock to gain more reliable results, or have applied urea in a number of different paddocks. This is an effective way to determine which soil type or paddock provides the best response, as it identifies the first paddock to target for improving nitrogen supply.

WHAT HAPPENED?
In both years, significantly higher grass yield and plant nitrogen content were increased with extra nitrogen, so the next step is to determine how maximising responses from improved nitrogen supply. Without nitrogen fertiliser, the grass yield in the brigalow soil area that was ripped is similar to the area that wasn’t ripped. When nitrogen supply was increased, grass yield in the non-ripped area improved by about 43%, whereas in the ripped area grass yield improved 53% to 106%, depending on the rate.

WHAT DOES THIS MEAN?
These trials were not designed to investigate the profitability of applying nitrogen fertiliser. Rather they were implemented to determine how rundown pastures are and to investigate the magnitude of benefit by increasing nitrogen supply. We have adequately identified that grass yield and protein levels are increased with extra nitrogen, so the next step is to assess the most economical way to improve nitrogen supply. The options include fertiliser, legumes or improve nitrogen cycling through vage.

Buffel scrub soil site at Theodore. 100kg/ha nitrogen strip. Photo taken about four weeks after application and almost 100mm of rain.

Guarding against deadly disease

Hendra update
HENDRA virus is a disease passed from bats to horses. It is also one of our most serious zoonotic diseases. This means a disease which can pass from animals to humans. It has occurred in Queensland and to far northern NSW. Most cases have occurred on the coastal stretch. The virus was originally recognised as the cause of horse fatalities in the Brisbane suburb of Hendra in 1994. Vic Rail, the horse trainer, also succumbed to the then mystery illness.

Hendra virus is transmitted directly from carrier bats. Bats carry the virus but may not be affected by it. Periods of stress, such as poor feed, winter rain and pregnancy, cause these bats to shed the virus in their secretions. Saliva, faeces, urine and birthing fluid can all contain a large amount of virus.

Horses ingest the virus by feeding under trees where bats have been roosting, picking up fruit which bats have discarded or having bats in their feed bins.

It takes about a week on average for the horse to show signs of illness after it has been infected.

The first signs are usually a lethargic horse, lagging behind in the paddock, dragging its feet and appearing a bit depressed. They may stand for long periods and not respond. After a period of illness lasting only a day or two, the horse becomes dramatically worse.

Any horse displaying the early vague signs is best not to be handled. It may still be excreting a large amount of virus and could be highly infectious. Seek veterinary advice as soon as possible. Also remove any other animals, especially horses, from its vicinity straight away, again without handling the sick horse.

Horses ingest the virus by feeding under trees where bats have been roosting, picking up fruit which bats have discarded or having bats in their feed bins.

It can readily pass the virus on to other horses and people. With the onset of these serious signs, the horse will usually die some hours later.

Any horse which displays the early vague signs is best not to be handled. It may still be excreting a large amount of virus and could be highly infectious. Seek veterinary advice as soon as possible. Also remove any other animals, especially horses, from its vicinity straight away, again without handling the sick horse.

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**Technique is key to establishment**

ADAPTED perennial forage legumes are seen as the most economical long term approach to improve nitrogen supply and therefore productivity of rundown sown grass pastures. However, commercially, legumes have not established reliably in sown grass pastures.

Although good establishment is recognised as critical to the long-term productivity and persistence of legumes, most producers use low-cost and low-reliability establishment techniques such as broadcasting out of planes after either no or minimal pasture disturbance (e.g. fl re) or severe soil disturbance and a rough seed bed behind a blade plough. Although broadcasting seed into undisturbed native pastures has worked in some years in monsoonal areas, for inland central Queensland the chance of follow up rainfall is much lower for legume seedlings to reach maturity before running out of moisture.

In the black spear grass zone of central and southern Queensland, surface sowing has been shown to be unreliable with an 80 percent failure rate (Cook et al. 1992). It is likely that sowing into buffer grass pastures in lower rainfall areas has even higher rate of failure.

To investigate the establishment results from using improved agronomy, we undertook two legume establishment trials this year near Wandoan. These trials demonstrated that controlling competition from existing grass pastures, storing soil moisture and having good seed to soil contact provide the best opportunity for improving the reliability of legume establishment.

**WHAT DID WE DO?**

Two replicated trial sites, both with existing buffer grass pastures were established with 16 treatments. One trial was on a sandy loam alluvial box soil, the other a brigalow grey cracking clay. The trials were planted on February 13-15, 2013. Legumes used were Progades desmarrantus on the clay soil site, and fine stem stylo and Progades desmarrantus on the loam soil site.

Plant legume numbers and size were recorded five weeks after planting, and nine weeks after sowing. Treatments were a combination of seedbed preparation or fallow period, seedbed treatment, and post-emergent weed control as follows:

- No disturbance of the grass pasture, with and without slashing at plant (two treatments).
- Grass pasture disturbed at plant; seedbed treatments were herbicide spray, deep rip or cultivate (tynes) with no post-emergent weed control (three treatments).
- Short fallowed of approximately four months. Seedbed treatments were spray with and without post-emergence herbicide, cultivate with and without Spinnaker; and a spray followed by cultivation at plant (five treatments in total).
- Medium fallowed of approximately four months. Seedbed treatments were spray fallow with and without post-emergence herbicide; cultivated fallow with and without Spinnaker; sprayed fallow with both grass and legume sown; cultivated fallow with both grass and legume sown (six treatments in total).

**WHAT WERE THE RESULTS?**

Both sites received very little rainfall during spring and early summer leading up to planting, which reduced the efficiency of the sprayed fallows. However both sites received close to average rainfall in the nine weeks after planting.

Loam soil site:

- When legume seed was broadcast into either undisturbed grass, slashed grass, deep ripped or cultivated at plant (with a tyned implement), it resulted in establishment failure with low numbers of plants (<8 plant/m2) that were poorly grown (average 4cm high).
- However, sprayed or cultivated fallows resulted in good plant numbers (>8 plant/m2) and moderate to high numbers of plants (>12cm).

Clay soil site:

- Regardless of whether legume seed was broadcasted or drilled, undisturbed grass, slashed grass, deep ripped or cultivated at planting treatments all resulted in establishment failure with low numbers of plants (<1 plant/m2) that were poorly grown (average 4cm high).
- However, sprayed or cultivated fallows resulted in good plant numbers (>8 plant/m2) and moderate to high plant size (>12cm).

Participants observing legume growth in the cultivated four-month fallow treatment at the clay soil site during the field day April 2013.

- No disturbance of the grass pasture, with and without slashing at plant (two treatments).
- Grass pasture disturbed at plant; seedbed treatments were herbicide spray, deep rip or cultivate (tynes) with no post-emergent weed control (three treatments).
- Short fallowed of approximately two months. Seedbed treatments were spray with and without post-emergence herbicide, cultivate with and without Spinnaker; and a spray followed by cultivation at plant (five treatments in total).
- Medium fallowed of approximately four months. Seedbed treatments were spray fallow with and without post-emergence herbicide; cultivated fallow with and without Spinnaker; sprayed fallow with both grass and legume sown; cultivated fallow with both grass and legume sown (six treatments in total).

Regardless of whether legume seed was broadcasted or drilled, undisturbed grass, slashed grass, deep ripped or cultivated at planting treatments all resulted in establishment failure with low numbers of plants (<1 plant/m2) that were poorly grown (average 4cm high).

However, sprayed or cultivated fallows resulted in good plant numbers (>8 plant/m2) and moderate to high plant size (>12cm).

Loam soil site:

- When legume seed was broadcast into either undisturbed grass, slashed grass, deep ripped or cultivated at plant (with a tyned implement), it resulted in establishment failure with low numbers of plants (<8 plant/m2) that were poorly grown (average 2cm).
- However, drilled the seed resulted in dramatically higher plant number with all treatments resulting in good legume numbers (>10 plants/m2). Legume plant size was smaller in treatments that did not control competition from the grass (>2cm without grass control; <6cm with a fallow). The smaller plant size will likely result in higher losses over winter.

- On both soil types, medium-length cultivated fallows (about four months) improved plant size (>25cm on the clay; >11cm on the loam), most likely from more soil moisture and better nutrient availability from greater mineralisation of soil organic matter.
- SO WHAT DOES THIS MEAN?

Controlling competition from the existing grass, fallowing to store moisture and ensuring good soil seed contact are much more likely to improve legume establishment than increasing sowing rates. Establishment will be measured in the 2013-14 summer to determine plant survival through winter and dry matter production over the second summer.


Authors: Stuart Buck, Pasture Agronomist (Sown Pastures), QDAFF, (07) 4992 9187, and Gavin Peck, Senior Pasture Agronomist (Grain Pastures), QDAFF, (07) 4688 1382.
Drought help package out

State offers updated range of measures

Water infrastructure now included

The Queensland Government is offering assistance to primary producers affected by drought. The new drought assistance package announced May 30, 2013, includes a range of new and existing measures to help farm families, farm businesses and farm communities affected by the drought. Assistance is available to producers with properties in drought declared areas or with an individually droughted property (IDP) declaration. A full list of drought declared areas is available on the QDAFF website www.daff.qld.gov.au.

The emergency water infrastructure rebate announced as part of the new package is very timely and has created a lot of interest across the region. The rebate is for emergency water infrastructure only. To be eligible a QDAFF officer needs to approve a water availability statement completed by the claimant. Once this statement is approved the applicant can claim up to 50 percent of costs up to a maximum of $20,000 per property per year in that financial year. The $20,000 maximum is inclusive of all drought declared claims under the Drought Relief Assistance Scheme, such as the fodder transport allowance.

Some current examples of where the rebate has been applied include piping water to areas where dams have dried out or will dry up before expected inflow; installing a tank and trough and pumping out of low dams where stock are bogging; putting in a bore to supply an area of the property where surface water is at risk of running out. This is not an exhaustive list but it gives an idea of some of the applications of the rebate. All forms for claiming water and freight rebates are available on the QDAFF website or at local DAFF offices. More information is available on the QRAA website www.qraa.qld.gov.au.

Emergency water infrastructure rebate

The rebate is offered to help producers in a drought-declared area or on an individually droughted property (IDP) with the establishment of water infrastructure to supply water for emergency animal welfare needs. More information is www.daff.qld.gov.au.

Drought Relief Assistance Scheme (DRAS): DRAS provides freight subsidies on fodder and water whilst an area is drought declared and freight subsidies for restocking and returning from agitation after the drought declaration is revoked, www.daff.qld.gov.au.

Land rent relief: Rural land rents will be frozen in the 2013/14 financial year for those farm businesses in drought declared areas. For more information please visit the Department of Natural Resources and Mines www.dnrme.qld.gov.au.

Transport concessions and assistance for road trains: Assistance to drought-affected primary producers may be available for the payment of fees and permit requirements, including vehicle inspection fees, drought road train permits, pilot escorts and vehicle height limits when transporting mechanised hay. For more information visit the Department of Transport and Main Roads www.tra.qld.gov.au.

School transport allowance: Families that drive their children to school or connect with a school bus run may be eligible for an increase in the school transport allowance. For details visit the Department of Transport and Main Roads www.tra.qld.gov.au.

Mental health support workshops: Queensland Health will be providing a series of mental health and psychological support workshops across drought affected areas. Workshops aim to enhance mental health and wellbeing in communities affected by drought and will provide community members and human service workers with skills to support and protect people that may be coping during drought conditions. More information on this program will soon be available at the Queensland Health www.health.qld.gov.au.

Information and assistance: The State Government’s Long Paddock website provides climate information, including seasonal climate outlooks, rainfall and pasture growth and a drought conditions update. For more information please visit the Long Paddock www.longpaddock.qdaff.qld.gov.au.

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SEVERAL producers and advisers or sales staff in the pasture seed industry have suggested that increasing seeding rates, but still sowing with no seed bed preparation, will improve the reliability of establishing legumes into sown grass pastures. Two trials near Wandoan town in February 2013 demonstrate that increasing seeding rate is a risky and unreliable approach to improving legume establishment in inland districts of Queensland. Contrasting competition from the existing grass, following to store moisture and ensuring good soil seed contact are much more likely to improve reliability of legume establishment than increasing seeding rates.

A major constraint to the successful use of legumes in sown grass pastures is the lack of establishment reliability. Graziers report a few successes (normally in exceptionally wet years), but many failures (there are very few pastures with good numbers of legumes), especially in inland areas of southern and central Queensland as the likelihood of follow up rain is much lower than in monsoonal or coastal areas. Although good establishment is recognised as critical to the long-term persistence of legumes, many producers don’t think they can afford to use more expensive establishment techniques to allow establishment.

WHAT WE DID

Two seeding rate trials were established near Wandoan: one on an alluvial sandy loam poplar box soil, the other on a brigalow grey clay. Fine-stem stylo was sown on the loam soil. Progredes desmanthus was sown on the brigalow clay. There were 4 ve seeding rates – 1, 2, 4, 8 and 16 kg seed/ha with four replicates. Seed was broadcast into undisturbed grass in February 2013. Legume plant numbers and size were recorded 1 ve and nine weeks after plant.

RESULTS AND DISCUSSION

The sites had a very dry spring and early summer leading up to plant with little grass growth. The sites received close to average rainfall in the nine weeks after planting. Figure 1 shows a classical response of increasing seeding rates leading to increased seeding numbers at 1 ve weeks after sowing for desmanthus on a clay soil. By nine weeks most (almost all) of the seedlings had died, succumbing to the competition of existing buffalo grass pasture. The plants recorded there nine weeks after planting were very poorly grown and unlikely to survive until winter, let alone surviving winter to grow next summer.

These trials will be re-measured next summer to see if any seedlings emerge from hard seed. Given that any seedlings that emerge still have to compete with the existing buffalo grass, it is unlikely they will reach maturity in high numbers in the pasture (unless they receive consistent follow up rain after germinating). Broadcasting seed into existing grass pasture with or no seedbed preparation is the most commonly used and recommended establishment technique by industry. These trial results demonstrate a large part of the reason why oversowing legumes into grass pastures in inland Queensland (where the chance of follow up rain is low) has been unreliable.

These results demonstrate that increasing seeding rate and planting directly into existing grass pastures is a risky and unreliable approach to improving legume establishment in inland areas of Queensland. Controlling competition from the existing grass, following to store moisture and ensuring good soil seed contact are much more likely to improve legume establishment than increasing seeding rates.
Clermont producers vie to become ‘Cattle King’

Eighth show draws large numbers

The Clermont Cattlemen’s Challenge is in its eighth year and is a highlight of the Clermont Show. The event continues to draw a large number of producers from across the region, each wanting to try their hand at becoming the next Clermont Show Cattlemen’s Challenge Cattle King. It provides an excellent showcase for the district’s beef industry.

Challenge Overview

Local exhibitors enter a pen of five weaner steers with a target entry weight of 290 – 320 kg. The competition has seven components over 12 months, taking the animals from weaning through to a 100-day grain-fed animal.

Weaner Judging

This phase occurs at the Clermont Show in late May with steers delivered the day preceding the show. After an overnight wet curfew the steers are weighed and judged as stores most suitable for growing out for the 100-day grain-fed market.

Grass Phase

The cattle are run as one mob and spend approximately nine months at the grow out property. In the following February the group is transferred to a local feedlot. Liveweight is recorded on arrival.

Feedlot Phase

The steers are granted for 100 days. Weights are recorded to monitor performance. At the end of this phase exhibitors select animals from their pen of five for the carcase competition and show classes.

Carcase Competition

Exhibitors select one steer each for the carcase competition. The carcase competition allocates points for dentition, carcase weight, P8 fat depth, eye muscle area, fat colour, meat colour, fat distribution, marbling and market suitability.

Grainfed Steer Competition

Three steers are selected to be judged for the pen of 100-day grainfed steers class. Points are allocated to each exhibitor.

Overall Weight Gain

The same three steers are judged for the pen of steers with the highest weight gain. Liveweight gain is calculated from the rail weight fed and the induction weight from the show the previous year.

Taste Test

A cube roll from each of the carcase competition steers is entered in the Taste Test competition at the show. A panel of four judges allocate points for each entry on juiciness, flavour, tenderness and overall liking.

Points from each section of the Challenge are aggregated to determine overall placing. Results are announced and prizes presented at the Clermont Show beef dinner.

2012/13 Cattlemen’s Challenge

The 2012/13 Challenge had a total of 85 steers from 17 local exhibitors. Steers were inducted into the competition on May 28, 2012 with an average entry weight of 286 kg. Contour Park gained highest points for stores most suitable to grow for the 100-day grain-fed market.

The Burnett family hosted the grass phase at Frankfield, 110 km north of Clermont. On February 4, 2013, after 251 days on grass, the steers were transferred to Laurel Hills Feedlot. Average feedlot entry weight was 354 kg (Figure 1). Average weight gain for the steers on grass was 68 kg/d (Table 1).

On May 17, 2013, after 101 days on grain, the steers were weighed and selected for the carcase competition and show classes. Average weight was 594 kg. Average weight gain for the steers on grain was 233 kg/d (Table 1).

The 17 steers selected for the carcase competition were processed at the Kilcoy Pastoral Company’s Kilcoy plant on May 20, 2013. The steer owned by Merrigang won the carcase competition. Steve and Lizzy Burnett from Monteagle, Clermont, won the overall Clermont Show Cattlemen’s Challenge competition.

2013/14 Cattlemen’s Challenge

The 2013-14 Challenge has 85 steers from 17 exhibitors. Weaner steers were inducted at the show on May 28, 2013, with an average entry weight of 294 kg. St Omer gained the highest points for stores most suitable for 100 day grainfed market.

The Burnett family hosted the grass phase at Wyena, 100 km north of Clermont.

For further information, please contact the chief steward David Miller, Treelawney, Clermont on 4983 3338 or by email treelawney@hotmail.com or Cattlemen’s Challenge Secretary, Nadine Ferguson, Trelawney, Clermont on 4983 3338 or by email nferg42@gmail.com

Table 1 (left): Liveweight gain for exhibitor groups of 5 steers in the 2012/13 Clermont Cattlemen’s Challenge.

Table 2 (below left): Carcase competition data summary for the 2012/13 Clermont Cattlemen’s Challenge steers (17 head).

Table 2

<table>
<thead>
<tr>
<th>Phase</th>
<th>Avg daily gain (kg/hd/day)</th>
<th>Total gain (kg/d)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grass grow out</td>
<td>0.18 - 0.36</td>
<td>46 - 91</td>
</tr>
<tr>
<td>Feedlot</td>
<td>1.80 - 2.59</td>
<td>198 - 282</td>
</tr>
<tr>
<td>Overall weight gain</td>
<td>0.71 - 0.90</td>
<td>258 - 380</td>
</tr>
</tbody>
</table>

One of the winning steers from Monteagle, Clermont.
CATTLE Council launched the new Pasturefed Cattle Assurance System (PCAS), a voluntary certification arrangement that will enable producers to supply ‘Certified Pasturefed’ cattle to the marketplace.

PCAS allows for premium, high-quality, grassfed beef to be branded and recognised. A large portion of Australia’s cattle herd is exclusively pasturefed, but beef from these cattle is rarely differentiated in the marketplace.

PCAS will provide producers with a valuable marketing opportunity. Underpinning PCAS are the PCAS standards which govern the on-farm feed requirements and traceability of the cattle, as well as pre-slaughter handling practices which influence eating quality.

The standards also include two optional modules to support claims relating to freedom from hormone growth promotants (HGPs) and antibiotics.

Consumers are more discerning than ever before about the origins of their food. Teys views the launch of PCAS as a critical element in delivering supply chain integrity around a certified pasturefed offering, while capitalising on Australia’s unique position as a world leader in supplying high-quality grassfed beef to the marketplace.

The PCAS, launched in April by the Cattle Council of Australia, has received more than 150 registrations from producers in Victoria, South Australia, NSW and Queensland. There has been strong interest from beef producers in PCAS, particularly with Teys Australia announcing that Certified Pasturefed beef will receive a 20c premium above MSA-graded beef. Cattle Council is thrilled that key industry processor Teys Australia sees value in the PCAS system and will be using it to underpin its Grasslands brand.

Casino-based Aron Enterprises has also newly come on board and has announced they too are willing to offer a 20c premium above their MSA rate. Strong interest in Certified Pasturefed products is also coming from the food service and retail sectors, emphasising the fact that consumers are driving the need for such a product. PCAS has been featured at a number of events and field days, including targeted workshops to assist producers in becoming ‘audit ready’.

More than 600 registrations were received for the Beef Connect webinar held on July 4, where Beef Central’s Jon Condon was joined by Teys Australia’s Geoff Teys and PCAS program coordinator Angela Schuster to discuss the program requirements. The webinar, facilitated by FutureBeef’s John James, attracted viewers throughout Australia, as well as the US, Canada and New Zealand.

Producers can obtain a Certified Pasturefed status in three steps:
1. Undertaking an online self-audit to determine eligibility.
2. Registering their property and paying an administration fee.
3. Successfully completing an on-site audit.
For more information: www.certifiedpasturefed.com.au

Mary Johnson, communications and stakeholder relations, Cattle Council of Australia, (02) 6269 5600, or email mjohnson@cattlecouncil.com.au

You are invited to...

EDGEnetwork - The Breeding EDGE
Meet your herd’s breeding potential
Emerald 30 October to 1 November 2013 (8.30am-5.00pm each day)

Presented by John Bertram

The Breeding EDGE package has been customised for producers in northern Australia and is designed to assist you develop a breeding program or improve your existing one, using reproductive and genetic knowledge and technologies to achieve desired production targets.

During the workshop you will:
• Work through the steps involved in developing a successful breeding program
• Gain a thorough understanding of reproduction and genetic principles
• Develop skills that can be applied on-farm
• Evaluate the reproductive and genetic options that best suit your situation
• Select strategies to optimise genetic gains and achieve desired change
• Begin developing a breeding plan for your business

The workshop package consists of:
• Three-day workshop (with a yard session)
• Follow up day (approximately 3 months later)

The workshops use an interactive style, building on the participant’s knowledge. Materials provided include workshop notes and reference material.

The price also includes all morning teas, afternoon teas and lunches for the duration of the workshop.

For more information and to register for the workshop:
Visit the FutureBeef website (futurebeef.com.au) to register and pay securely online, or phone Laura Devlin or Bryony Daniel on 07 4983 7400.

Enquiries about this course can be directed to Désirée Jackson 07 4650 1223 or mobile 0428 107 885.

Currently this course is priced at $1,782 (inc. GST) for one person and $2,035 (inc. GST) for two people from a business.

Due to generous funding from ReefPlan, Grazing BMP and the Climate Clever Beef Project, you can attend this workshop for $880 (Inc. GST) for one person or $1,110 (Inc. GST) for two people from the same business.

Numbers are strictly limited. Please register by the 8th October to ensure your place.

A joint initiative of...
Evaluating practices

From p3 of feature
To date, the team have implemented three manage-
ment strategies that will help achieve their business
objectives.
1. AI program using selected genetics to improve perfor-
mance.
2. Used link sires to achieve Group Breeding Plan linkage.
3. Introduced BBSE on all bulls for benchmarking.

The team identify a number of benefit they have gained from assessing their business:
- An improved understanding of genetics, the back-
ground behind Breeding Plan and how to use Breeding Plan in selection of genetics.
- An improved understanding of the importance of setting objectives for the herd in order to meet fertility,
production and market specifications.
- A better understanding of the linkages and correla-
tions of traits, and how they influence fertility, produc-
tion and carcass parameters.
- A clearer, more confident attitude to manage genetic improvement in the herd and how to make it happen.

The ability to acquire more information to make decisions on the herd. This has always been a firm
focus in this business.

According to Susan: “The main thing that is in it for us is the amount of valuable information that we now
have available to us.

“We’ve increased our understanding of that information and how we use it to make business decisions
based on fertility, production and market compliance.

“Our ability to set objectives within our business and the confidence to know they are realistic has become
very important to us. In addition to this, we have built greater confidence in our product, both in the commercial and seedstock herds.

“In particular with the seedstock herd, we know that the bulls we produce have a level of credibility and
carcase definition that justify the price.

“While the benefit to the team at Salisbury Plains has been evident, they do acknowledge that the ever
increasing pressure of modern time has been a matter
to manage.

“When you manage a beef business, you sometime
get caught up in the day-to-day operations, and
this detracts from time spent working on the business.

“We (the team) need to continually make time to implement the big decisions. We acknowledge that this
is a necessity.”

Susan’s conscious effort to focus on the performance
of their business and breeding enterprises has proved to be the ultimate factor to their early achieve-
ments. There is no doubt that together they will accom-
plish their breeding objectives and reap the rewards.

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Email to Lauren Williams at Lauren.Williams@daff.qld.gov.au
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Heifer management in northern beef herds 2nd edition
Hormone growth promotants and beef production – A best practice guide
Managing the breeder herd – Practical steps to breeding livestock in northern Australia
Recommendations for integrated buffalo fly control revised edition (e-version only)
Weaner management in northern beef herds

NUTRITION

Beef cattle nutrition – An introduction to the essentials
Phosphorous management of beef cattle in northern Australia

GRAZING LAND MANAGEMENT

Grazing land management – Sustainable productive natural resource management
Not just watching the grass grow: Graziers who monitor their land
Pastures: Mackay Whitsunday region (limited copies available)
Plants of Central Queensland – Their identification and uses ($68.75)
Weedy Sporobolus grasses – Best practice manual
What weed is that – Central Queensland?

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