FutureBeef

CQ Beef

Information for rural businesses in Central Queensland

in this edition

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Queensland Government

QUEENSLAND Country Life

Fertility drives herd direction

Selections made today impact herd proftability in the future

Choosing new bulls wisely

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

Your business 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 the fertility performance of your herds can improve your financial gains. Over the past 15 years, gains have been made in measuring the current and future ability of a bull to produce calves that will improve the fertility, growth and carcase performance of your herd.

Measuring the ability of a bull to produce calves: During the years 1992 to 2003, a major bull fertility research project called the 'Bullpower project' was conducted across northern Australia. There were about 1000 bulls, aged two to four years, studied in the project from breeds including Santa Gertrudis, 5/8 Brahman, Brahman and Belmont Red. The bulls were subjected to physical and reproductive examinations prior to mating. Many of these were followed through multiple-sire joinings and mating outcomes were recorded.

Key findings from the Bullpower project:

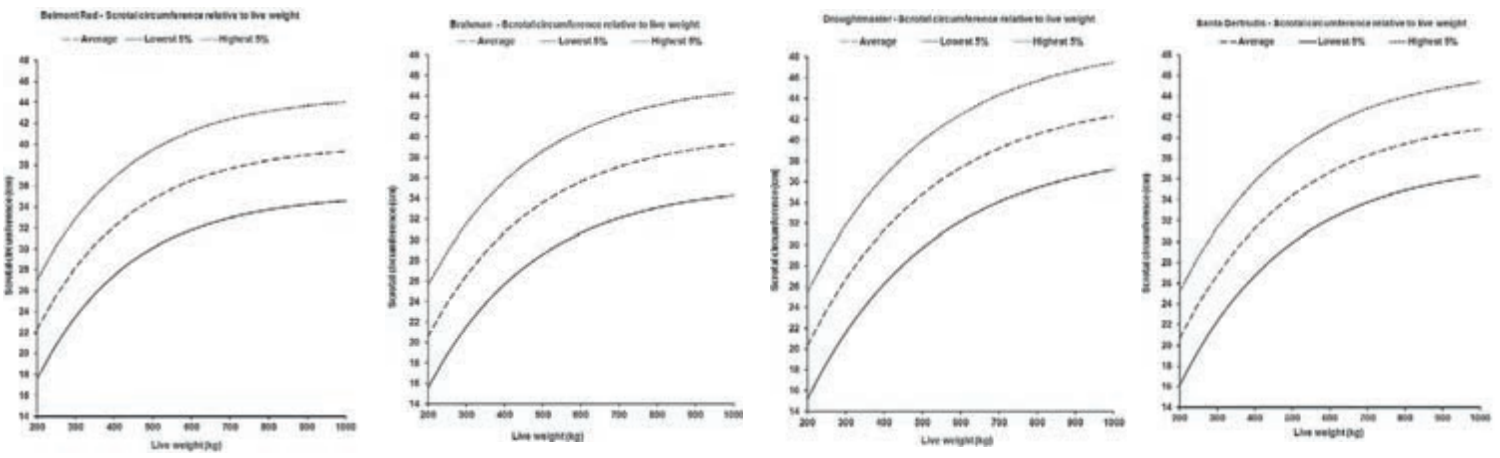
- Sperm morphology of bulls has been shown to be an important pre-mating predictor of calf output of bulls in multiple-sire situations in Bos Indicus and Bos Indicus-cross herds in northern Australia.
- These studies showed that in general, bulls with <50pc normal sperm sired few calves, while bulls with high calf outputs had >70pc normal sperm.
- Normal sperm was poorly repeatable in bulls that were still sexually maturing (14-24 months). How ever, the repeatability of normal sperm was high in Brahman and composites once they reached sexual maturity.
- Sheath depth in Brahman bulls was negatively related to calf output – that is, deeper sheathed bulls sired fewer calves.

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

Australian Cattle Veterinarians (ACV) developed the Bull Breeding Soundness Evaluation (BBSE), now called the Veterinary Bull Breeding Soundness Evaluation (VBBSE), from the outcomes of the Bullpower project. These standards were developed to standardise bull-fertility testing, provide a consistent descriptor of bull fertility and give an assessment of risk of reduced fertility. This process can be used to screen bulls prior to sale or to check bulls before mating.

The BBSE contains objective information in terms of 'what we see' (phenotype) and what we can see only with a microscope. The VBBSE is not a genetic evaluation of reproductive traits, but an indication of the animal's present reproductive function. The evaluation indicates whether a bull has met a set of standards for key fertility components which indicate whether a bull has a high probability of being fertile. The components are:

- Scrotal circumference (cm) and tone or resilience.
- Physical examination for faults in the head, legs, joints, hooves, sheath and penis.
- Semen examination for motility.



- Semen morphology (structure of the individual sperm cells).

Semen morphology is a measurement of the structural soundness of a bull's sperm. At semen collection, a semen sample is placed in a tube with a special diluent and sent to a morphologist, who will examine 100 individual spermatozoa and prepare a report showing the percentages of normal sperm and of the various abnormalities. There are internationally accepted maximum percentages of these various abnormalities.

Accredited veterinarians produce a detailed certificate report. It's wise to seek professional interpretation.

> Your business is driven by the number of animals it can sell.

Predicting the value of a bull relative to other bulls in the genetic merit of their progeny: Research into fertility traits has been carried out by the CRC for Beef Genetic Technologies (Beef CRC) over the 12 years up until late 2011. The research involved 1027 Brahman heifers by 54 sires and 1132 tropical composite heifers by 51 sires. The heifers were studied from weaning through to weaning of their sixth calf. The breeding studies with the CRC females produced 3648 bull calves of the two tropical genotypes. From weaning to 24 months, these bulls were evaluated for a comprehensive range of production and reproduction traits.

Genetic correlations of young bull and heifer puberty traits with measures of early and lifetime female reproductive performance were estimated in the two tropical beef cattle genotypes.

Beef CRC outcomes: Recently published results showed the following:

- Male scrotal size at 12 months was found to be highly heritable in Brahmans and moderately so in tropical composites.
- Scrotal circumference at 12 months in Brahmans and at six months in tropical composites were correlated with heifer age at puberty. That is, larger testicle sires, sire daughters that reach puberty earlier.
- A critical finding was the large influence of sires on heifer age at puberty. Brahman sires differed by up to 5.6 months in the average age at puberty of their daughters.
- Younger age at puberty was genetically associated with increased lifetime reproductive performance.
- The Beef CRC found a large genetic variation between sires in the interval between calving and the first oestrus cycle after their daughters first calving. That is, sires have a large effect on the time taken to return to cycling after calving.
- In the Beef CRC Brahman sires, this difference was 4.4 months. This can equate to a 40pc difference in the calving rate of different sires' daughters.
- Percent normal sperm is heritable and was genetically correlated with lactation anoestrus and female lifetime reproductive traits in both genotypes. Bulls with high percentage normal sperm are more likely to produce daughters with higher lifetime calving rates.
- Preputial eversion (pink skin showing at the pizzle) and sheath scores were genetically associated with lifetime calving and weaning rates in both genotypes. Bulls with better sheath structure are more likely to sire daughters with better lifetime calving performance.

Scrotal size: There are new ACV standards for minimum scrotal circumference to pass a VBBSE. Circumference is mostly influenced by weight and breed. The normal range in 13 common breeds of Australian beef bulls was established using ~260,000 observations of bulls that were mostly within 250-750kg live weight and 300-750 days of age. The recommended minimum scrotal circumference is the bottom 5pc value at any weight within breed. Bull breeders and breed societies may impose higher thresholds where breeding objectives require increasing scrotal circumference. Use bulls with average or above average scrotal size for their weight to assist earlier age at puberty in females and greater lifetime calf output in progeny.

The above graphs provide, by weight, the predicted 5th percentile (lowest 5pc in scrotal size), average and 95th percentile curves (highest 5pc in scrotal size) for four of the common beef breeds.

Making progress with genetic tools: Real progress requires making long-term genetic gains where the progeny of the stock used this season produce more calves per year than previous generations. As part of genetic gain, these progeny also need to meet market objectives. Breedplan Estimated Breeding Values (EBVs) are the most accurate genetic tool to make long-term gain in growth, fertility and carcase traits. It is critical to use balanced selection across the economically important traits:

- Scrotal size EBV is superior to the actual scrotal size measure, and a valuable tool for identifying bulls that will produce daughters which reach puberty earlier.
- Days to calving EBVs (available for some breeds) are a selection tool to address quicker re-breeds after calving. Select bulls with negative figures.
- Use growth EBVs to improve weight for age (i.e. bet ter grown replacement heifers, heavier sale animals).
- Use carcase EBVs to improve carcase traits.
- Set minimum standards. Use breed EBV data (e.g. averages, 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 a balance of traits in selection. Selection for these traits will not compromise tropical adaption. Female fertility can be improved through genetics from the sires selected. Use bulls with above 70pc normal sperm at 24 months for both genetic improvement in the progeny and for those bulls that are to be single-sire mated or used for semen collection for processing.

Scrotal size and days to calving EBVs are available for identifying superior genetics for fertility. Phenotypically, bulls should have above average scrotal size at 12 months and again at pre-mating VBBSE.

Alan Laing, senior beef extension officer (FutureBeef), QDAFF Ayr, (07) 4720 5115.

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 Australia who excel in three fi elds:

- 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 fi eld of practical genetic improvement and bull selection.

John joins past extension medal winners Bernie English (QDAFF Mareeba) and Bob Shepherd (QDAFF 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 M8U and supplementing regimes for urea 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.

LEFT: Chairwoman of the central Queensland regional beef research committee Libby Homer with John Bertram.

RIGHT: Chairwoman of the central Queensland regional beef research committee Libby Homer with Stu McLennan and NBRUC chairman Ralph Shannon.

- 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 QDAFF (formerly DPI) and CSIRO for the past 45 years, and have identifi ed 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 to many improvements to the management of their breeding operations.

"Initially we 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 have 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.

Salisbury Plains breeders.

Salisbury Plains cattle.

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 fi rst two cycles i.e. fi rst 45 days of mating.
5. Pregnancy percentage of >90pc.
6. Branding percentage of >85pc.
7. Weaning rate of >85pc.
8. Achieve average weaning weight of 200kg.

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 paddock 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) specifi cations to obtain premium price.
2. Breed and sell cull heifers that will meet MSA specifi cations
3. Overall, breed better carcases at younger ages.

"With the help of QDAFF we are working to develop a management strategy that will lead us to meet these business 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 signifi cant and/or costly more risk averse.

● To p12 of feature

CQ Beef joins with the 'bible of the bush'

Special collaboration for 18th issue

WE are very excited to be collaborating with *Queensland Country Life* and presenting the *CQ Beef* newsletter as a hardcopy feature in the 'bush bible'.

This is the 18th issue of our *CQ Beef* publication. You can access old versions of any of our beef industry newsletters from our FutureBeef website, www.futurebeef.com.au.

The FutureBeef website is also where you'll fi nd high-quality, research-based information across a range of topics including breeding and genetics, nutrition, grazing land management and business management, to name a few. You'll also fi nd an events calendar to see what's on in your area, as well as what's being offered online. There's an increasing number of webinar (online seminar) recordings, too, so you can access the latest information at your fi ngertips 24/7.

Just last month, more than 600 people registered for the free live webinar on Pasturefed Cattle Assurance System – a great way to keep up with industry news and ask questions. If you missed it, you can still access the recording from the FutureBeef website.

You can also sign up for an online version of *CQ Beef*, and while you're there, sign up for one of our free eBulletins – just visit our website at www.futurebeef.com.au/resources/newsletters/

Recently, a group of producers at Emerald were the fi rst to fi nish all fi ve of the Grazing Best Managemen Practice (Grazing BMP) modules including soil health, grazing land management, animal production, animal health and welfare, and people and business. Grazing BMP is a voluntary, industry-led program that allows producers to benchmark their current practice online against an industry-developed set of standards.

These standards have been verifi ed by a producer reference group and are based on industry experience and the best available science. Since January there have been 59 Grazing BMP workshops. About 90pc of the businesses who participated are using practices at or above industry practice standard.

The grazing land management, animal production, and people and business modules have the highest percentage of businesses assessing their practices as above BMP standard.

There will be a Breeding EDGE network workshop in Emerald, from October 30 to November 1.

To register, please visit futurebeef.com.au or call (07) 4983 7400.

CQ Beef features some interesting producer stories in this edition. The Salisbury Plains producer profi le is a great testimonial for attending a Breeding EDGE workshop. I'm sure you'll enjoy reading how this business is putting into practice their Breeding EDGE learnings.

A breeder management fi eld day was held at Oaklands, Duaringa, recently. You can read about the Oaklands carbon farming trial in this newsletter.

You can contact me for a copy of the Breeder Management booklet used at the fi eld day.

Byrony Daniels, CQ Beef editor and beef extension offi cer (FutureBeef), QDAFF. Phone: (07) 4983 7467. Email: byrony.daniels@daff qld.gov.au

CQ producers weigh up forage research

Trial sites aim to show way for commercial properties

THE second phase of a project co-funded by QDAFF and Meat and Livestock Australia (MLA), to examine the relative profi tability of alternative forage options for fi nishing cattle in the Fitzroy Basin area, is in its fi nal year of data collection.

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 lablab, and the perennial pastures – butterfl 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 sites will continue until the end of December 2013. An assessment of forage, animal and economic performance data for each of the forage sites is still underway.

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

In addition to individual gross margin data 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 comparison.

Whole farm economic case studies are also being developed based on actual co-operator data to examine the effect of different high-output forage systems on whole-farm profi tability. Scenarios under consider ation in the case studies include substituting annual forages for improved pastures, grain cropping and perennial forages.

A series of economic spreadsheet calculators have been developed to allow beef producers to calculate their own gross margins based on production and input fi gures relevant to their business. These calculators will be released at the end of this project and will be available on the FutureBeef website.

Cattle graze forage oats in the Taroom-Wandoan region, one of the sites monitored as part of the 'High-output forage systems' project.

In addition, an updated guide to forage use, titled "Using high-quality forages to meet beef markets in the Fitzroy River catchment", will be available at the end of the project. It will include information on best-practice agronomic and grazing management, expected forage nutrient content and animal performance as well as economic analyses for example scenarios. The objective of these resources is to provide better information to beef producers to support their decision making on how best to utilise the land they have allocated to forage production.

Preliminary results from the co-operator sites support the fi ndings from the desktop evaluation conducted in Phase 1 of this project, that:

- It is important to consider economic performance as well as agronomic and livestock performance when comparing forage options as the ranking of forages may differ for each aspect.
- There is a wide range in the profi tability 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 profi tabil ity when appropriately implemented and managed.
- Under current market and cost conditions, perennial legume-grass pastures have an economic advantage over annual forages.

Three fi eld days across the region will be held February to March 2014 to present the project fi ndings and demonstrate the tools developed as part of the project, such as the economic spreadsheet calculators.

For more information:

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Stuart Buck, Senior Agronomist (Sown Pastures), QDAFF Biloela, 07 4992 9187.

Fred Chudleigh, Agricultural Economist, QDAFF Toowoomba, 07 4688 1586

Is your herd protected from 3-day sickness?

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

BEF, otherwise known as three-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 signifi cant, 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, mismothering of calves and deaths. These losses take time to regain and can severely impact profi tability of cattle enterprises.

In light of the economic burden of 3-day sickness, Meat and Livestock Australia's donor company co-funded research to examine the effi cacy of the current BEF vaccine across a range of BEF virus fi eld isolates collected in northern Australia from 1980 through to 2011.

The results confi rmed that the vaccine reliably neutralises fi eld strains of the virus. In effect, this means the current vaccine remains effective in protecting against 3-day sickness in Australia.

"Vaccination is the only method of preventing BEF. The research indicates there has been no signifi cant change to the virus in Australia inover 30 years and the current vaccine was shown to be effective across a range of viruses collected in the fi eld," said Dr Georgia Deliyannis, senior principal scientist, Zoetis Veterinary Medicine Research and Development (VMRD), which conducted the research. "Proper and timely vaccination is one of the most important measures producers can implement to safeguard their business".

"The research, conducted by Zoetis' VMRD team, provides reassurance that vaccination offers protection against current strains of the BEF viruses. However, it is important to recognise that immunity is not instantaneous. Based on our research a peak serological response equated to protection generally occurring around two to four weeks after the initial vaccination course," said Dr Deliyannis.

"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 from commercial and government contributions. No producer levies were used to implement this BEF vaccine research.

Andrew Bottomley, professional sales representative, Zoetis, Animal Health, 0418 492 289

Information in the spotlight:

KEY MESSAGES: PHOSPHOROUS NUTRITION

KEY messages from MLA's recently released 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.
- Defi cient 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 defi ciency include bone chewing, broken bones, peg-leg, poor body condition of breeders and botulism.
- There are no simple diagnostic tests for the P status of cattle. Blood and faecal P are the most useful indicators. Soil P levels are another indicator
- Defi ciency is related to soil P status. As a general rule, where soil P levels:
  - are defi cient (5 mg/kg or less), all classes of stock are likely to respond to feeding P
  - are marginal (6–8 mg/kg), young breeders are likely to respond to feeding P
  - exceed 8 mg/kg, the economic benefi t from feeding mature cows diminishes.
- If P is fed over the wet season on defi cient country:
  - young growing stock can increase their growth by 30–40 kg/year.
  - breeders can increase weaning rates by 10–30 percent.
- Responses to P supplement may be lower if animals running on P-defcient country have access to adjacent areas of high-P soils, such as frontage country.
- Supplements should be compared on the cost of their P content, on the practicality of feeding out 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 8pc P; a typical dry season supplement will contain 2–4pc P and also non-protein nitrogen (eg. urea).
- On defi cient country, lowering the stocking rate will not reduce the need to feed phosphorus.
- Where the native pasture on defi cient country contains suffi cient stylo, cattle may respond signifi cantly 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 benefi ts from feeding P are maximised when done in conjunction with other aspects of good herd management.

The full document from which this summary is taken is available at: www.mla.com.au/Publications-tools-and-events/Publications

- *To order a free hardcopy phone the MLA membership services hotline on 1800 675 717 or send an email to publications@mla.com.au (refer Publication code 9781741919561).*

NEW POISONOUS PLANTS BOOK

AUSTRALIA'S Poisonous Plants, Fungi and Cyanobacteria – A guide to species of medical and veterinary importance (2012) by Ross MacKenzie.

Poisonous plants, fungi and cyanobacteria potentially impact on everyone, from the urban gardener, pet owners, mothers with young children exploring the world through taste, through to beef producers.

In this book Ross describes an amazing number of poisonous plants including blue-green algae, grasses, weeds, shrubs and trees from across Australia.

The beautifully clear, informative photos of each species help make plant identifcation easier.

Ross' introduction to understanding plants and plant poisonings and explanation of different types of poisoning (e.g. oxalate "big head of horses" and nitrate-nitrite poisoning) tells the whole story in a straightforward, easy read.

- *Read more about this book at CSIRO Publishing www.publish.csiro.au/pid/6507.htm*

WEED APPS

WEEDS of Southern Queensland 3rd edition app.

Now available from the Google Playstore http://www.wsq.org.au/WSQ%20app.htm

Weeds Ute Guide app by GRDC.

Available on the App Store http://www.grdc.com.au/Resources/Ute-Guides

Climate-clever beef project

Cattle versus carbon: the tug of war begins

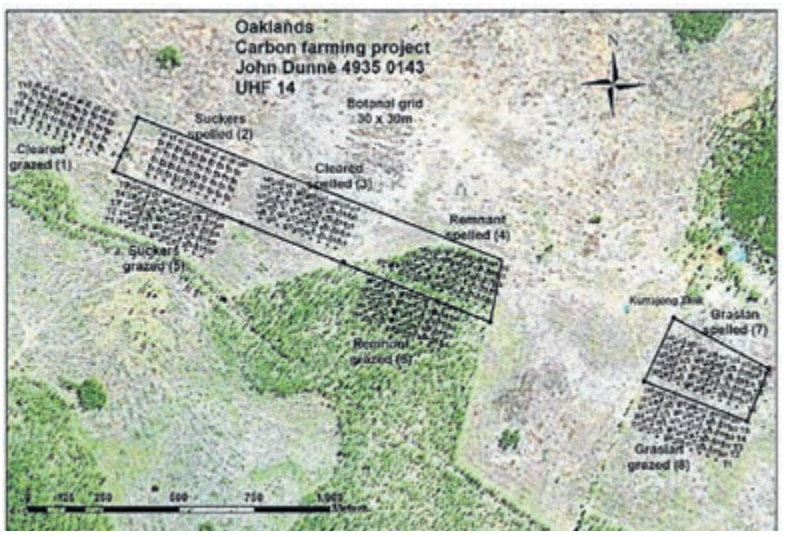

Photo 1: Aerial view of the trial site on Oaklands

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 DAFFQ'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 profitability 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.

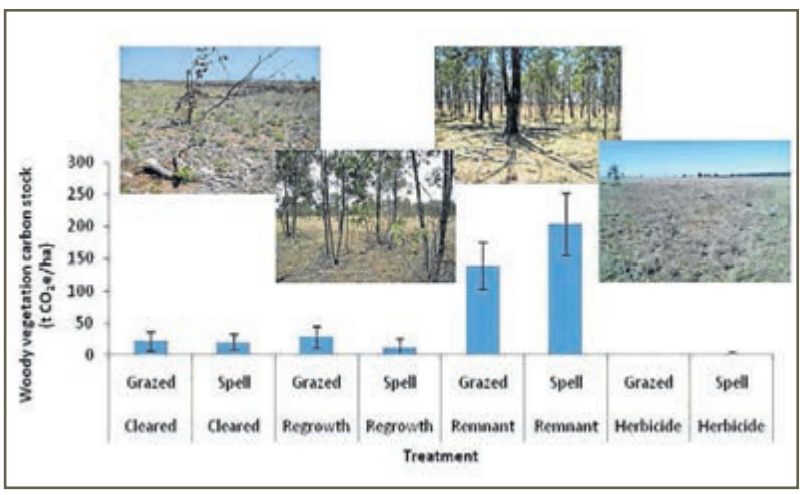

Fig. 1: Woody vegetation carbon stock and representative photos. Cleared plots were measured before chaining.

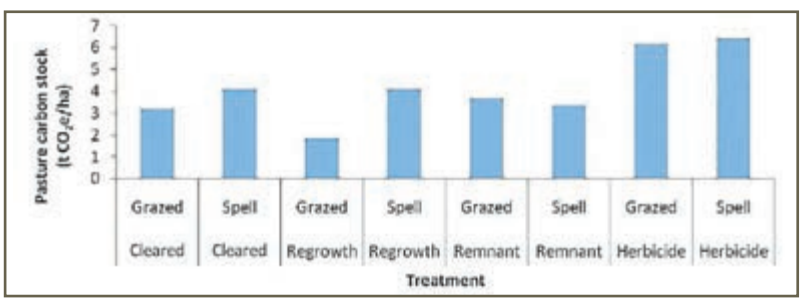

Fig. 2: Pasture biomass six months after establishment of treatments. The herbicide treatments were in a separate paddock and in better land condition.

Two herd scenarios have been initially evaluated (Table 1 below).

The base herd scenario (current situation) has 1005 breeders mated and 68pc weaning rate.

The heifers are joined at two years of age. 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 some paddocks.

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.

SUPPLEMENT COST OFFSETS PRODUCTIVITY GAINS

Reducing the stocking rate by 10pc reduced livestock emissions by 10pc, however combined with providing supplement, herd emissions intensity improved by 8pc.

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.

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Table 1: Breedcow herd and greenhouse gas emissions data.

Scenario	GM/AE	GM herd	Herd emissions (t CO_2e)	Emissions intensity (t CO_2e per t LW sold)
Current Situation 1,552 AE	$125	$194,000	2,606	13.6
Reduce stocking rate by 10% increase weaning rates, supplement 4 months of year	$130	$182,000	2,324	12.6

Oaklands day gets clever with climate

Collecting on-ground, local information

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

Producer prof le – John and Alicia Dunne

JOHN and Alicia Dunne recently hosted a fi eld day at Oaklands, 70km south of Duaringa. The fi eld 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 (9000ha) 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 forage country".

Steers 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 makes comment that getting the information out to the wider industry through fi eld days like the Oaklands day is very important. "We have all the right questions but until something like the Oaklands fi eld day happens, we don't discuss it in enough detail together. Being on property out among the suckers brings an element of reality to it. We are hoping to run some more days with the Mimosa Creek Landcare group and anyone else who is interested is welcome to attend. There is huge potential for learning," John says.

John believes information has never been so accessible before and makes special mention of the FutureBeef website, www.futurebeef.com.au.

"I feel like even though it's pretty tough at the moment, there is a lot of enthusiasm in the industry. People are now getting a foundation of knowledge that will put them in a good position when the industry does improve," John says.

"We're in the organic market, but even before we were we didn't drench, dip or spray too much."

While it saves money, the Dunnes also note that often in 18 months' time there is not a lot of difference in the mob-treated and the control mob.

"We try not to let breeders get too soft and we aim for less than a quarter European content in our replacement females," John says.

The Dunnes are vigilant when it comes to selection and cull on softness for ticks and fl y susceptibility.

"We've tried control mating before and it hasn't worked for us, mainly because we've had trouble with fences at creek crossings for the past three wet seasons. But I've got neighbours who make it work, so next year I'm not going to concentrate too much on bull control and will use an April pregnancy test to sort the breeders out into management groups and spay the empties. It's an idea I got from the Oaklands breeder management fi eld day," John says.

Getting an accurate weaning rate fi gure can be hard when you've got breeders and weaners moving in and out of the mob in a non-control mated system.

"The way we've been doing it is to divide the total number of calves born throughout the year at the last muster at the end of winter (August 2013) by the number of breeders bushed at the last muster the year before (August 2012). You have to make sure you're not fudging the fi gures by removing cows that weren't wet at branding that had access to a bull or adding in calves from a cull mob that accidently got pregnant and are not counted in your total breeder fi gures.

"The fact that we spay any culls probably helps us here," John says.

He admits the past few seasons have been above average and breeder management is going to be crucial to keep condition on breeders in an organic production system where supplementation is expensive when the seasons turn dry.

"Seasons defi nitely haven't been a limiting factor the past few years, but I'm using the CliMate iPad application through August to keep an eye on the probability of rainfall. The CliMate app bases its prediction on historical data. It's just another new tool available to assist producers."

John wishes to thank Chook the manager at Oaklands for his hard work and cooperation. John is also thankful to his family for the opportunities they have given him.

To learn more about the Climate Clever Beef project, or any other beef-industry projects that QDAFF is leading, go to www.futurebeef.com.au. FutureBeef also offers a range of free webinars (online seminars), so visit our events calendar to see what's coming up.

Byrony Daniels, beef extension offi cer, FutureBeef, DAFF Emerald, (07) 4983 7467.

A world of beef information at your f ngertips

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 smart phone?

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 smart phone. 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/

Maybe you're interested in receiving one of our free eBulletins?

These are email messages that allow you to keep up to date with the latest information, news and events.

Just click the 'sign up' link on any page on the FutureBeef website (www.futurebeef.com.au), enter your contact details and select which eBulletins you would like to receive.

You will then receive emails that include headlines and brief summaries of the stories. Often you will be able to click on a link to read further information related to the story.

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 for all the FutureBeef staff. 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, eExtension Team Leader, QDAFF Toowoomba, (07) 4688 1125

How rundown are CQ's grass pastures?

Determining declines in nitrogen levels

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 benefi t that can be achieved by improving nitrogen supply, is to apply nitrogen fertiliser to small areas, as trials, across one or more paddocks. The benefi t of using urea 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 benefi ts 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 spreader 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 identifi es the fi rst paddock to target t improve long-term nitrogen supply.

WHAT HAPPENED?

In both years, signifi cantly higher grass yield and grass quality (protein) have been measured across all sites. Higher grass yields have occurred in both sown pastures, such as Rhodes and buffel, as well as native pastures, such as bluegrass.

The data from the Theodore site (table 1) is very interesting and it demonstrates two points. The fi rst is by applying fertiliser across a number of paddocks, the paddock with the best response is easily identifi ed.

The owner now knows which paddock to target fi rst and plan strategies to improve nitrogen supply, and in this case the buffel scrub soil paddock is the one to target.

The second point is that soil water is very important when 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 43pc, whereas in the ripped area grass yield improved 93pc to 196pc, depending on the rate.

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

WHAT DOES THIS MEAN?

These trials were not designed to investigate the profi tability of applying nitrogen fertiliser.

Rather they were implemented to determine how rundown pastures are and investigate the magnitude of benefi t by increasing nitrogen supply. We have adequately identifi ed 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 increase nitrogen cycling through tillage.

Stuart Buck, pasture agronomist (sown pastures), QDAFF, (07) 4992 9187.

Location	Pasture	N rate (kg/ha)	DM (kg/ha)	DM increase %	Protein (%)
Rockhampton	Native	0	3417	-	n/a
		100	4960	45	n/a
Dululu	Rhodes	0	3595	-	3.6
		25	4143	15	3.2
		50	5030	40	3.6
		100	6420	79	3.9
		200	9643	169	4.3
Theodore	Buffel	0	2852	-	2.7
	scrub soil	50	6869	141	2.8
		100	9599	237	5.6
	Buffel	0	2736	-	2.9
	Brigalow soil	50	5285	93	3.9
	ripped	100	8106	196	5.4
	Buffel	0	2697	-	3.4
	Brigalow soil	50	3930	46	5.1
	non ripped	100	3764	40	6.9
	Buffel/silk	0	3455	-	3.3
	Blade plough	50	4656	35	4.3
	with legume	100	5959	72	5.6

'Green urea' – table 1. Grass yield and quality responses to nitrogen fertiliser application in 2013.

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 mid 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 fl uids 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 fi rst 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.

It may develop a respiratory-type infection, be uncoordinated, fall over, appear unable to see and may seizure. At this stage the horse is at its most infective.

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 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.

Shower and wash your clothes if you have any doubt about your contact with the sick horse.

With any horse which has died and you're unsure of why, it needs to be treated with the same caution. Call your vet for advice before doing anything.

A vaccine has been available for Hendra virus for the past year. This is one of the ways to help safeguard you and your horses against this devastating infection.

The vaccine is available through your local vet. They will draw up a vaccination schedule to suit your situation. Remember that vaccination is very important but must be used together with good horse-management practices. These are:

- Don't allow horses to forage under trees, if possible, but especially when they are fruiting or fl owering.
- Cover fed bins.
- If a horse is sick, don't handle it. Remove other horses. Then shower and wash your clothes.
- Call your vet for advice.

Derek Lunau, senior veterinary offi cer, DAFF Rockhampton, 0467 814 322.

Good legume establishment comes from better agronomy

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. fi 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 buffel grass pastures in lower rainfall areas has even higher rate of failure.

Participants observing legume growth in the cultivated four-month fallow treatment at the clay soil site during the fi eld day 4 April 2013.

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 buffel 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 Progardes desmantus on the clay soil site, and fi ne stem stylo and Progardes desmanthus on the loam soil site. Plant legume numbers and size were recorded fi ve 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 fallow 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 (fi ve treatments in total).
- Medium fallow 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 effi cacy of the sprayed fallows. However both sites received close to average rainfall in the nine weeks after planting.

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 good 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, drilling the seed resulted in dramatically higher plant numbers 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 (<3cm without grass control; >6cm with a fallow). The smaller plant size will likely result in higher loses over winter.

On both soil types, medium-length cultivated fallows (about four months) improved plant size (>20cm 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 seeding rates. Establishment will be measured in the 2013-14 summer to determine plant survival through winter and dry matter production over the second summer.

Reference: Cook S, MacLeod N, Walsh P (1992) Reliable and cost-effective legume establishment in black speargrass grazing lands. In 6th Australian Society of Agronomy Conference, Armidale, NSW pp. 406-409.

Authors: Stuart Buck, Pasture Agronomist (Sown Pastures), QDAFF, (07) 4992 9187, and Gavin Peck, Senior Pasture Agronomist (Sown Pastures), QDAFF, (07) 4688 1392.

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 shires 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 offi cer 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 in each fi nancial year. The $20,000 maximum is inclusive of all drought freight claims under the Drought Relief Assistance Scheme, such as the fodder freight subsidy.

Some current examples of where the rebate has been applied for include piping water to areas where dams have dried up or will dry up before expected infl ow; 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 offi ces

Another area that created a lot of interest at the time was the grazing of national parks and reserves. Expressions of interest have now closed and offers of agistment have been made to more than 25 landholders.

Following is a summary of the current drought assistance package including the government department responsible.

● **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 while an area is drought declared and freight subsidies for restocking and returning from agistment after the drought declaration is revoked. www.daff.qld.gov.au

● **Land rent relief:** Rural land rents will be frozen in the 2013/14 fi nancial year for those farm businesses in drought declared areas. For more information please visit the Department of Natural Resources and Mines www.nrm.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 machined baled hay. For more information visit the Department of Transport and Main Roads www.tmr.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.tmr.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 the skills to identify, support and protect people that may be not coping during diffi cult times. 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.qld.gov.au.

DAFF offi cers throughout the region can answer drought enquiries or direct you to the right person. Give them a call. Loan packages are available through Qld Rural Adjustment Authority (QRAA). For full details and assistance contact your local QRAA representative or visit www.qraa.qld.gov.au .

High seeding rate did not improve legume establishment in grass pastures

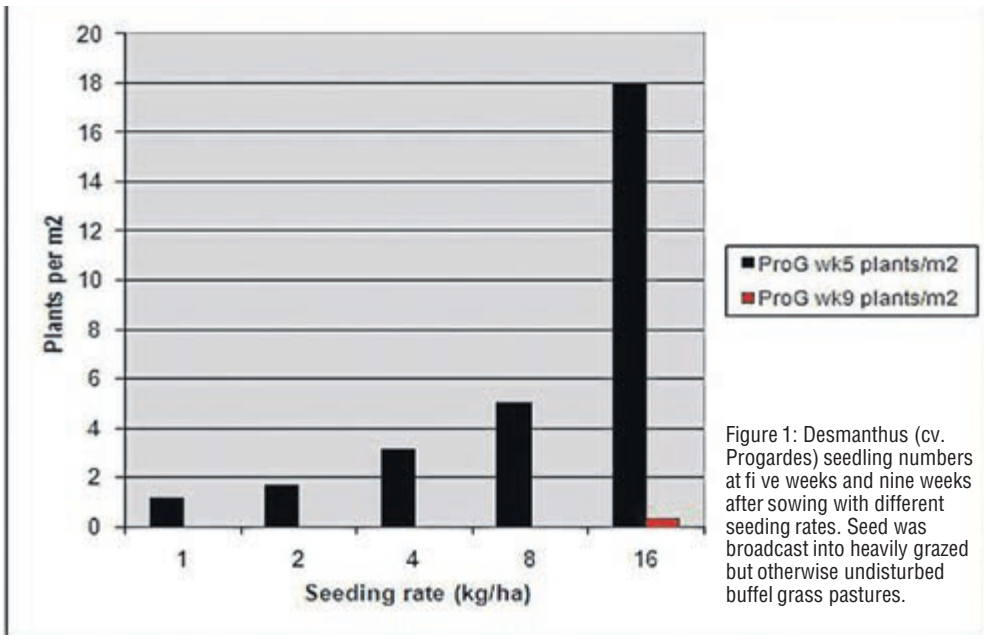

Figure 1: Desmanthus (cv. Progardes) seedling numbers at fi ve weeks and nine weeks after sowing with different seeding rates. Seed was broadcast into heavily grazed but otherwise undisturbed buffel grass pastures.

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 sown in February 2013 demonstrate that increasing seeding rate is a risky and unreliable approach to improving legume establishment in inland districts of Queensland. Controlling competition from the existing grass, fallowing 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. Progardes desmanthus was sown on the brigalow clay. There were fi 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 fi 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 seedling numbers at fi 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 buffel 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 remeasured next summer to see if any seedlings emerge from hard seed. Given that any seedlings that emerge still have to compete with the existing buffel 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 little 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, fallowing to store moisture and ensuring good soil seed contact are much more likely to improve legume establishment then increasing seeding rates.

Gavin Peck, senior pasture agronomist (sown pastures), QDAFF

Cattlemen's Challenge turns 8

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 fi ve 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 grainfed 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 grainfed market.

GRASS PHASE

After the show the steers are delivered to a local property and receive health treatments (botulism, 5 in 1, 3-day and Dectomax) and Compudose 400 at induction.

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

FEEDLOT PHASE

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

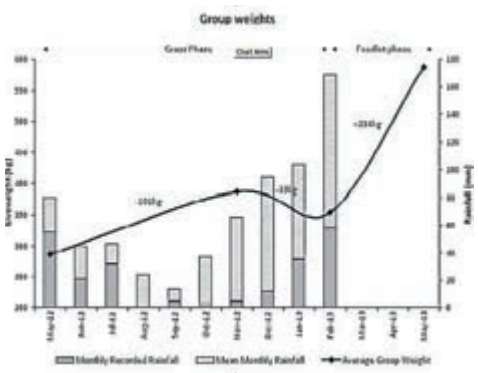

Figure 1. Average liveweight gain for the 2012-13 Clermont Challenge steers over the grass and grainfed phases and rainfall during the grass phase.

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 fi nal feedlot weight 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, fl avour, 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. Cantour Park gained highest points for stores most suitable to grow for the 100-day grainfed market.

The Burnett family hosted the grass phase at Frankfi eld, 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/hd (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 599 kg. Average weight gain for the steers on grain was 239 kg/hd (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 and the Tayglen steer took out the taste test competition. A summary of carcase competition results are shown in Table 2.

The grainfed show classes were judged on May 28, 2013. Tayglen won the pen of three steers suitable for 100 day grainfed market. Steers from Tayglen also won the overall weight gain competition. Steve and Lizzy Burnett from Monteagle, Clermont, won the overall Clermont Show Cattlemen's Challenge competition.

One of the winning steers from Monteagle, Clermont.

Phase	Avg daily gain (kg/hd/day)	Total gain (kg/day)
Grass grow out	0.18 - 0.36	45 - 91
Feedlot	1.80 - 2.59	196 - 282
Overall weight gain	0.71 - 0.99	258 - 360

Table 1 (left): Liveweight gain data 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)

Carcase trait	Carcase competition specifications	Carcase specifications for maximum points	Percentage of carcases achieving maximum points
Dentition (teeth)	0-6	0	88%
Carcase weight (kg)	250-390	300-340	71%
P8 fat depth (mm)	5-32+	10 to 12	53%
Eye muscle area (sq cm)	90+	90 +	47%
Fat colour score	0-5	0-1	100%
Marbling score	0-5	5	0%
Meat colour	1a-4	1b-1c	71%

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 to grow out for the 100-day grainfed market. The Philp family is hosting the grass phase of the Challenge at Wyena, 100km north of Clermont.

● *For further information, please contact the chief steward David Moller, Trelawney, Clermont on 4983 5318 or by email trelawneystn@bigpond.com or Cattlemen's Challenge Secretary, Natalie Finger, Hillview, Clermont on 4983 3338 or by email snfi nger@bigpond.co*

Cattle Council launches PCAS

Pasturefed Cattle Assurance System valuable opportunity

CATTLE Council launched the new Pasturefed Cattle Assurance System (PCAS), a voluntary certifi cation arrangement that will enable producers to supply 'Certifi ed 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 infl uence 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 about the origins of their food.

Teys views the launch of PCAS as a critical element in delivering supply chain integrity around a certifi ed pas turefed offering, while capitalising on Australia's unique position as a world leader in supplying high-quality grass-fed 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 Certifi ed 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 Atron Enter prises 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 Certifi ed 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 fi eld days, including tar geted 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 Future Beef's John James, attracted viewers throughout Australia, as well as the US, Canada and New Zealand.

Producers can obtain a Certi fi ed 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.certi-fi edpasturefed.com.a

Mary Johnson, communications and stakeholder relations, Cattle Council of Australia, (02) 62695600, or email mjohnson@cattlecouncil.com.au

Evaluating practices

● From p3 of feature

To date, the team have implemented three management strategies that will help achieve their business objectives.

1. AI program using selected genetics to improve performance.
2. Used link sires to achieve Group Breedplan linkage.
3. Introduced BBSE on all bulls for benchmarking.

The team identify a number of benefi ts they have gained from assessing their business:

- An improved understanding of genetics, the background behind Breedplan and how to use Breedplan in selection of genetics.
- An improved understanding of the importance of setting objectives for the herd in order to meet fertility, production and market specifi cations
- A better understanding of the linkages and correlations of traits, and how they infl uence fertility, production and carcase parameters.
- A fi rmer, more confi dent attitude to managin 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 fi rm 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 confi dence to know they are realistic has become very important to us. In addition to this, we have built greater confi dence 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 confi dence that justifi es the price.

While the benefi ts for the team at Salisbury Plains have 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 sometimes get caught up in the day-to-day operations, and this detracts from time spent working on the business.

"We identifi ed the 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 achievements. There is no doubt that together they will accomplish their breeding objectives and reap the rewards.

Terry and Susan Vail, Salisbury Plains, Bowen, (07) 4786 1440.
Alan Laing, FutureBeef DAFF Ayr, (07) 4720 5115.
Lauren Williams, FutureBeef DAFF Mackay, (07) 4967 0732.
Jim Fletcher, FutureBeef DAFF Mackay, (07) 4967 0731.

BREEDING EDGE COMING TO EMERALD

A Breeding EDGE workshop will be held in Emerald from October 30, 2013 to November 1, 2013.
Visit our events calendar on www.futurebeef.com.au to see what else is coming up in your area.
If you are interested in attending, please contact Byrony Daniels by phone, (07) 4983 7467, or by email, byrony.daniels@daff.qld.gov.au

– Lauren Williams, beef extension offi cer (FutureBeef), QDAFF Mackay, (07) 4967 0732.

Northern Beef Publications

Complete this form for a copy of the publications below.
Email to Lauren Williams at Lauren.Williams@daff.qld.gov.au
For a full list of available publications visit
www.futurebeef.com.au/resources/publications/

ANIMAL HUSBANDRY AND MANAGEMENT — TICK THE BOX

- ☐ A guide to best practice husbandry in beef cattle – Branding, castrating and dehorning
- ☐ Heifer management in northern beef herds 2nd edition NEW
- ☐ 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 fl y control revised edition (e-version only
- ☐ Weaner management in northern beef herds NEW

NUTRITION

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

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 identifi cation and uses ($68.75
- ☐ Weedy Sporobolus grasses – Best practice manual
- ☐ What weed is that – Central Queensland?

BUSINESS MANAGEMENT AND MARKETS

- ☐ Is it fi t to export
- ☐ FutureBeef Technical Library (CD compilation of publications and reports)

FACT SHEETS

- ☐ $Indexes for beef cattle
- ☐ A guide to taking out contracts for cattle
- ☐ Attracting and retaining staff in the northern beef industry NEW
- ☐ Buying better bulls
- ☐ Calculating cost of production in beef enterprises
- ☐ Expanded use of molasses for intensive beef cattle feeding
- ☐ Giant rat's tail grass and other weedy Sporobolus species
- ☐ Managing ground cover to reduce run-off and water loss
- ☐ Managing soils to keep them healthy and productive
- ☐ Managing weeds after drought
- ☐ Maximising eating quality with tropical breed beef
- ☐ Minimising land transport stress in live export Brahman steers
- ☐ Native vegetation 1 – Assessing the condition of remnant vegetation
- ☐ Native vegetation 2 – Improving the value of remnant vegetation
- ☐ Native vegetation 3 – Revegetating the farm
- ☐ Preparation of cattle for live export
- ☐ Small-scale employers attracting & retaining staff in the pastoral livestock industry NEW
- ☐ The accuracy and success of EBVs
- ☐ The European Union Cattle Accreditation Scheme (EUCAS)
- ☐ Using BeefSpecs to help meet market specifcations
- ☐ Weed removers, pasture improvers – effective weed control
- ☐ Yard weaning methods for preparing feeder cattle

NAME:.....

PROPERTY NAME:.....

PHONE NUMBER:.....

POSTAL ADDRESS:.....

FutureBeef CQ BEEF feedback

Please spend a minute to let us know your thoughts on CQ Beef as a way of keeping you up to date on current issues in the beef industry.

Do you find the CQ Beef useful? ❑ Yes ❑ No

Why did you give this answer?
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What would you like to see in future issues?
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Name (optional).....

Which of the following best describes you?
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