



ISSUE 28 WINTER 2016

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# CO BEEF

Information for rural business in Central Queensland

## FutureBeef workshops and training opportunities

A list of available training workshops & contacts

## Improving beef cattle fertility with genetics

Using the tools available to buy fertile bulls with the genetics you want to improve your herd and business



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# Welcome to CQ Beef 28



Observing, learning about and feeling the digestive tract of a cow at the Emerald Nutrition EDGE workshop.

**Dietary quality faecal** Near Infrared Reflectance Spectroscopy (NIRS) reports from around the region reported that diet quality cut out early (April) in 2016, which made winter rainfall very welcome!

The phosphorous status of properties in central Queensland is largely unknown so we've been doing some testing and the results and management implications are shared in this issue.

Bull buying season is here. Paul Williams from Tropical Beef Technology Services writes about some of the tools available to help you select sires to improve fertility within your breeding herds.

To see who has been out and about at FutureBeef events, check out the photos. To find out about FutureBeef events coming up, including the second of the Grazing



DAF pasture agronomist Stuart Buck talks about desmanthus establishment at the Progades legume farm walk at "Cungelella" Springsure.



Beef producers discuss the finer points of their biosecurity plans at the Livestock Biosecurity Network workshop at "Barfield" Banana.



Nick Corbet from CQ University demonstrates ultrasound scanning for carcass traits at the Clermont Cattleman's Challenge Field day at Laurel Hills. Nick also discussed learnings from the Brahman Beef Information Nucleus (BIN) project with the group.



Learning how to measure the pelvic area of heifers at "Shawlands", via Biloela.

Best Management Practice Expos in Emerald on October 11 and 12 please visit [www.futurebeef.com.au](http://www.futurebeef.com.au).

Byrony Daniels, DAF, Emerald  
(07) 4983 7467



## Stu McLennan hangs up the bucket

**Stu McLennan's 43-year** research career in the field of tropical beef cattle nutrition was celebrated with 70 friends, colleagues and family at a farewell dinner at the University of Queensland on 6 May 2016.

Stu joined the Department of Primary Industries in March 1973, spending 12 years as a Husbandry Officer based at Swans Lagoon Research Station in North Queensland.

After completing a Masters at James Cook University and a PhD at the University of New England, Stu moved to the Animal Research Institute, Yeerongpilly in 1991. After 37 years with DPI in its various forms, Stu joined the

University of Queensland's Queensland Alliance for Agriculture and Food Innovation (QAAFI), in October 2010, retiring in January 2016.

During his career, Stu has made major contributions to the knowledge and understanding of the nutrition of beef cattle in tropical environments.

With an early colleague, Lyle Winks, he did much of the pioneering work in developing strategic feeding systems based on the use of molasses for survival and production feeding. His research into the use of urea as an intake regulator in molasses supplements lead to the very successful M8U (molasses with 8 per cent urea) feeding system.

This system is widely acknowledged as the major advance in practical cattle nutrition in northern Australia over the past 40 years. These feeding systems have contributed greatly to the improved viability of beef producers, especially in drought situations.

Stu's systematic, practical approach to nutrition based on fundamental principles and knowledge of the industry has been greatly appreciated by producers, other scientists, extension staff and students across northern Australia. This was recognised with the North Australian Beef Research Council (NABRC) 2013 Scientist/Researcher Medal, which is widely acknowledged as the highest honour Australian cattle producers can bestow on a research scientist.

Stu has published prolifically throughout his career with over 120 publications to-date. Many of these (69) were authored in partnership with

long term colleague, Dennis Poppi (formerly of CSIRO and now The University of Queensland).

In retirement, Stu remains active as a DAF volunteer fellow completing papers and providing support and guidance for colleagues.



Stu McLennan

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## FutureBeef workshops and training opportunities

You can get all the latest information, tools and skills in animal nutrition, sustainable grazing, reproduction and genetics, animal behaviour and health, and business management at FutureBeef workshops. Make sure you check out our events calendar for scheduled workshops and field days in your region [www.futurebeef.com.au/events](http://www.futurebeef.com.au/events).

We've added a new workshop to our suite of accredited Meat and Livestock Australia EDGEnetwork training workshops – Grazing fundamentals: climate, land types, grazing management. This workshop looks at local influences on pasture yield and quality and how you can use seasonal planning and strategic management to maximise productivity.

### Available workshops include:

- Nutrition EDGE
- Artificial insemination
- Breeding EDGE
- Bull selection
- BREEDPLAN: beef cattle recording and selection
- Pregnancy diagnosis
- Better decisions in the beef business (Breedcow Dynama)
- Business EDGE
- Testing management options
- Northern Livestock Transporters Course
- Managing your livestock business through drought
- Grassfed beef production and production feeding
- Stocktake: balancing supply and demand
- Rangeland management
- Grazing land management EDGE
- Grazing fundamentals

### Register your interest

If you'd like more information about a workshop, or to discuss customised training opportunities please email FutureBeef ([info@futurebeef.com.au](mailto:info@futurebeef.com.au)) or contact:

**Customer Service Centre**, Queensland  
T: 13 25 23 (only within Queensland)  
or 07 3404 6999

## Livestock industries urged to be FMD prepared



*It is important for livestock owners to check their animals regularly for signs of diseases such as foot-and-mouth disease or FMD.*

### Help prevent FMD

FMD is the biggest single threat to Queensland's livestock industries.

Queensland is particularly vulnerable to the threat posed by FMD given our livestock industries' heavy reliance on the export of livestock commodities. Our beef exports alone in the last financial year were worth around \$5 billion annually.

FMD has not occurred in Australia since 1872, but it is common in some countries in the Middle East, Africa, Asia and South America.

The illegal importation of contaminated food, especially salted or cured meats, is the most likely means by which the virus could be introduced to Australia.

FMD is a serious and highly contagious viral disease affecting cloven-hoofed animals. This includes livestock such as cattle, pigs, sheep, goats, deer and camelids including camels, llamas and alpacas. Horses are not susceptible to FMD.

The social and economic impact of an FMD outbreak would be severe and prolonged.

A recent study by the Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES) estimates that a large, multi-state FMD incident could cost Australia more than \$52 billion in lost revenue over 10 years.

The impact on the Queensland economy, our livestock sector and rural communities would be catastrophic.

This is why Queensland has implemented a Biosecurity Preparedness Program for FMD.

The program is designed to reduce the risk of FMD being introduced, establishing and spreading in Queensland.

### Recognising the signs of FMD

Given the significant impacts of FMD it is important that everyone, particularly those working with and or around livestock, can recognise the signs of FMD.

FMD can cause severe disease, including blisters in the mouths and around the hooves of infected animals. This produces lameness and excessive salivation (particularly in cattle), reduced milk yield in dairy cattle and fever.

### Key points:

- Foot-and-mouth disease or FMD is the single greatest disease threat to our livestock industries
- Preventing FMD is a shared responsibility between government, industry and community
- It is important for livestock owners to check their animals regularly and to be able to recognise the signs of FMD
- If you suspect your livestock may have FMD, contact your local veterinarian immediately
- Learn more about preventing FMD at [www.biosecurity.qld.gov.au/FMD](http://www.biosecurity.qld.gov.au/FMD)

The disease is extremely contagious and multiple animals within the herd or flock are likely to be infected at the same time.

Prolonged or permanent production losses may result and in some young stock, the disease may be fatal.

There are other diseases which involve the formation of blisters and may result in clinical signs similar to FMD. As a result, FMD may be confused with some diseases commonly found in Australia as well as various other exotic diseases like swine vesicular disease.

It is important for livestock producers to regularly check their livestock and contact their veterinarian immediately if they notice clinical signs consistent with FMD in their livestock.

Confirmation of FMD requires laboratory testing of samples taken from livestock.

Suspected cases of FMD must be reported to Biosecurity Queensland on 13 25 23 or the Emergency Animal Disease Watch Hotline on 1800 675 888.

You can find out more about how to prevent FMD and the Queensland Biosecurity Preparedness Program at [www.biosecurity.qld.gov.au/FMD](http://www.biosecurity.qld.gov.au/FMD)

*Dr Allison Crook,  
Chief Veterinary Officer  
Biosecurity Queensland, DAF*



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CO BEEF

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# Do I need to supplement Phosphorous?

## Three central Queensland beef businesses find out!



The Silver-leaf Ironbark paddock at Monklands.

**The importance of phosphorous (P)** in beef production across northern Australia is well known. Phosphorous can become the limiting factor to production, particularly during the wet season when pasture quality is high and protein and energy in the diet are not limiting.

What is not well known is the prevalence of P deficiency in central Queensland. Three central Queensland grazing businesses wanted to know the phosphorus status of their cattle to determine if there would be production benefits from feeding phosphorous supplements.

To investigate the phosphorus status we used the P-Screen test with dry growing stock at the end of the 2016 wet season.

The P-Screen test is best used at the end of the wet when body stores of phosphorous may be depleted due to animals' requirements for growth over the wet season. Testing is best done with dry growing stock in their second year. Breeders are not good test animals because they can mobilise phosphorus from their muscles and bones making it more difficult to interpret the results for blood phosphorus.

### P screen testing undertaken in 2016

Rob and Annie Donoghue undertook testing in two paddocks comprising Bulloak country and box flats at Redcliffe in the Baralaba/Bauhinia district. As the paddocks are used for breeders, No 5 steers were put in the paddocks in October of 2015 so there would be dry animals running in the paddocks over the wet season.

David and Adele O'Connor tested dry No 4 maiden heifers running with older breeders on Mountain Coolabah woodlands in their cell grazing paddocks at Mountain View, Springsure.

Reid and Julie Bauman tested spayed No 5 heifers in a Silver-leaf Ironbark breeder paddock at Monklands, Alpha.



The Monklands spayed heifers tested using the P-screen test.

Initial results from samples taken February through to April at all three properties showed blood inorganic phosphorus (Pi) concentrations above 50 mg P/L (Table 1). This indicated that the cattle were in adequate phosphorus status and would not have responded to phosphorus supplements. Diet quality is a critical component of assessing phosphorus and the faecal nitrogen percentage is used to assess diet quality. The faecal nitrogen percentage needs to be maintenance (1.3%) or above to assess phosphorus status.

The faecal total nitrogen (FN) concentration in the Redcliffe paddocks (1.6 and 1.8 %FN) indicated fair pasture quality when sampled in February and March. The concentrations of 1.4%FN at Monklands (sampled 11 April) and

Location	Land type	Sampling date	Mean blood Pi (mg/L)	Range blood Pi (mg/L)	Faecal nitrogen (% DM)	P status
Redcliffe, Bauhinia Downs - Paddock 1	Bulloak country & box flats.	24/2/16	56	44-67	1.8	Adequate
Redcliffe, Bauhinia Downs - Paddock 2	Box flats	3/03/16	67	41-88	1.6	Adequate
Mountain View, Springsure	Mountain Coolibah woodlands	6/4/16	70	57-85	1.4	Adequate
Monklands, Alpha	Silver-leaf ironbark	11/4/16	58	47-68	1.4	Adequate

Table 1. P-Screen results for cattle tested on three Central Queensland properties from February to April 2016.

Location	Land type	Sampling date	Mean blood Pi (mg/L)	Range blood Pi (mg/L)	Faecal nitrogen (% DM)	P status
Redcliffe, Bauhinia Downs - Paddock 2	Box flats	27/5/16	44	33-54	1.3	Marginal
Monklands, Alpha	Silver-leaf ironbark	24/5/16	28	17-42	1.3	Deficient

Table 2. P-screen results from May 2016 tests at Redcliffe and Monklands.

Mountain View (sampled 6 April) approached the threshold of 1.3%FN when the diet quality will only be sufficient for maintenance and the cattle are likely to respond to urea supplements. This shows that at these sites pasture quality was declining quickly. Graziers reading this article may like to submit their own NIRS faecal samples to determine pasture quality.

Redcliffe and Monklands undertook additional testing in May, to assess the impact of a longer growing period on phosphorus status. The Monklands paddock returned a deficient mean Pi reading of 28 mg/L. The Redcliffe paddock was marginal with a mean Pi reading of 44 mg/L of blood.

Both the Redcliffe and Monklands paddocks returned faecal nitrogen percentages of 1.3%, indicating a response to urea supplementation was likely.

### What do the test results mean for management?

At Monklands, the April Pi concentration was quite high at 58 mg/L. The much lower Pi concentration of 28 mg/L in May is not a major concern for dry animals as growth and consequently phosphorus requirements would be limited by the diet quality being at maintenance. For weaned breeders a small amount of supplementary phosphorus (1-2 grams per day) would be adequate, but breeders continuing to suckle calves would need more supplementary P.

The Bauman's have been feeding their breeders a lick containing 2.75% phosphorous. With a lick intake of 150 g/hd/day the breeders would be receiving 4 grams of phosphorous per day. The test results indicate that the phosphorus content of the lick for weaned cows could be reduced and this would lower supplementation costs.

Reid and Julie Bauman plan to sample at Monklands again during the 2016-17 wet season to get a better picture of the status of their breeder paddocks. "We're keen to get to the bottom of how much Phosphorous we need to feed". Reid says. A bigger wet season may affect the phosphorus content of the grass and change pasture species composition which in turn will affect the phosphorus status of the cattle.

At Redcliffe, Paddock 2 (Table 2) returned a high Pi reading of 67 mg/L at the February test, and a borderline reading of 44 mg/L in May. These results indicated that there is unlikely to be a response to phosphorous supplementation in the wet season.

Graziers are encouraged to test paddocks to gain a better understanding of the P status, which is critical information for supplement management.

This work was completed with the support of the Grazing Best Management Practices project.

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## Improving beef cattle fertility with genetics

**Reproductive performance** is a key determinant of profitability in a beef cattle enterprise. Consequently, selection for improved female fertility should be an important consideration for all beef cattle producers.

More calves from a set number of breeders over a defined period (12 months) equals more dollars, with the job of a female in a beef producing herd to conceive, preferably as early in the joining period as possible, carry a foetus during gestation, deliver a live calf and raise it until weaning, within every 12 month period of her breeding life. A female that does not do this is failing to do her job and will be eroding herd profitability.

While many producers manage the reproductive performance of their female herd using different management strategies, in particular the culling of females that fail to get in calf, research has shown that female fertility is influenced by the genetics of the breeding herd.

The next bull you purchase is one factor that will impact on the fertility of your breeder herd.

This will arise from keeping a selection of his daughters to enter the breeding herd (a self replacing herd).

The question to ask yourself is "how do I know that the bull(s) I am selecting will have the genetic package to produce very fertile daughters?"

There are currently two pieces of information that can be used as a guide to selecting bulls with "good" fertility genetics. These being genetic differences (BREEDPLAN Estimated Breeding Values) for Scrotal Size (SS) and Days to Calving (DC).

### Scrotal Size

Scrotal Size (SS) EBVs are estimates of the genetic differences between animals in scrotal circumference (cm) at 400 days of age.

Scrotal size is measured by BREEDPLAN members from behind the animal (Figure 1). The scrotum containing both descended testes is measured using a tape positioned where scrotal circumference is greatest. At the same time, the scrotum can be palpated to detect abnormalities.

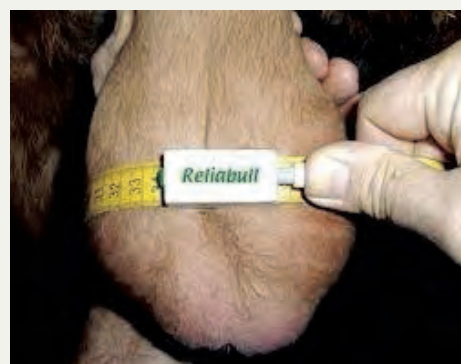


Figure 1. Measuring scrotal size.

Increased SS is associated with increased semen production in bulls, and earlier age at puberty of bull and heifer progeny. SS also has a small favourable relationship with Days to Calving (DC), such that bulls with larger SS tend to have daughters with shorter DC.

Larger, more positive, SS EBVs are generally more favourable. For example, a bull with an SS EBV of +1.7 cm would be expected to produce sons with larger testicles at yearling age and daughters that reach puberty earlier than the progeny of a bull with an SS EBV of +0.4 cm.

A raw SS (e.g. 36cm) and SS EBV (+1.7 cm) on sale bulls should not be confused as they explain slightly different attributes. A raw SS should be used to indicate if a bull has a higher probability of being fertile himself (i.e. is able to get his share of cows in calf).

Bulls selected for high SS EBVs are expected on average to breed daughters with earlier puberty and with shorter days to calving.

### Days to Calving

Days to Calving (DC) EBVs are estimates of genetic differences between animals in female fertility, expressed as the number of days from the start of the joining period (i.e. when the female is introduced to a bull) until subsequent calving (Figure 2).

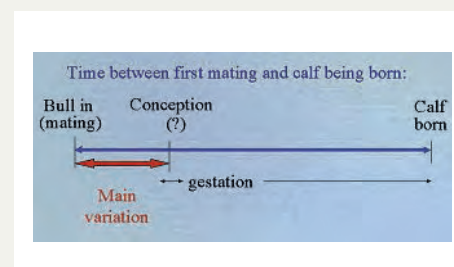


Figure 2. Measure of Days to Calving.

DC promotes those cows that calve earlier in the season compared to those that calve later, while penalising those cows that do not calve. Negative DC EBVs indicate a shorter interval from the start of joining season until calving.

Variation in DC is mainly due to differences in the time taken for females to conceive after the commencement of the joining period (Figure 2). Females with shorter DC EBVs tend to be those which also show early puberty as heifers, which return to oestrous earlier after calving and conceive early in the joining period.

DC EBVs are reported in days and will generally have low accuracies until a sire has a large number of daughters with days to calving records.

Lower or negative DC EBVs are generally more favourable and indicate sires that will produce daughters with shorter number of days to calving and this effect will be cumulative over the life of those daughters. For example, a bull with a DC EBV of -10 days would be expected to produce daughters that conceive earlier in the joining period than the daughters of a bull with a DC EBV of +10 days.

Note that there is only a small favourable relationship between SS and DC. Therefore it is strongly recommended that you select for the DC trait directly if you want to improve female fertility.

### Conclusion

Progress can be made in fertility by selecting bulls that have the right genetic package. Indicators of bulls with a good fertility genetic package are those with an above average SS EBV and below average (negative) DC EBV.

You may notice in some sale catalogues that have weight EBVs available for selection do not have fertility EBVs available (e.g. SS & DC). We encourage all BREEDPLAN members to record these fertility traits, submit for analyses and have EBVs available for their own selection and for their clients.

Commercial bull buyers should ask for this information on the bulls they will be potentially purchasing and taking home.

Other EBVs (weight, carcass), visual appraisal, Bull Breeding Soundness Evaluation (BBSE) and the components below, should also be included in your bull buying decisions.

- Scrotal circumference (cm) and tone or resilience
- Physical examination for faults in the head, legs, joints, feet, sheath and penis
- Semen analysis for motility,
- Morphology (or structure of the individual sperm cells), and
- Mating behaviour / mating ability.

Paul Williams  
Tropical Beef Technology Services - Rockhampton  
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# New biosecurity laws for livestock producers

Biosecurity Queensland is urging livestock producers to be aware of the new biosecurity laws and what they mean for their business. Queensland's new Biosecurity Act 2014 commenced on 1 July 2016.

A new cattle tick framework commenced on 1 July 2016. It provides producers with more options for managing cattle tick on their property. The framework supports reduced travel times and costs for producers impacted by cattle tick and provides more flexibility for low risk activities such as moving livestock to feedlots and abattoirs.

It also allows for accredited certifiers – people trained to inspect and certify livestock as free from ticks. Accredited certifiers can issue certificates at any location, not just a dip or clearing facility. This allows livestock to be certified at their place of origin and moved directly to their destination, saving the producer additional loading, travel and costs.

All producers still have an obligation to report cattle tick and tick fever in the free zone. Infested properties in the free zone need to ensure their livestock are tick free before they are moved and eradicate the ticks from their property. Biosecurity Queensland continues to provide surveillance for cattle ticks in the free zone to identify and monitor high risk areas, and to ensure that eradication programs on infested properties are effective.

The property identification code (PIC) system is continuing. If you keep designated animals, you are considered a registrable biosecurity entity and must register your details with Biosecurity Queensland. This is similar to the previous property registration requirements – the terminology of who must register is a little different, but what is considered a designated animal remains unchanged.

## You must register if you keep:

- One or more cattle, sheep, goats, pigs, bison, buffalo, deer, members of the camel family, members of the equine family
- 100 or more designated birds – those that are raised for human consumption (poultry) or the

production of eggs for human consumption (e.g. chickens), or that have been released into free flight since they started being kept in captivity (e.g. racing pigeons)

- One or more bee hives.

In most cases the owner of the animals needs to register because they normally have ultimate care and control of the animals. If you keep livestock, when you register as a biosecurity entity a PIC will be issued. If you already held a PIC you were automatically registered as a biosecurity entity on 1 July 2016 and registration will remain effective for three years.

A major theme of the new laws is that of shared responsibility – that everyone is responsible for managing their own biosecurity risks. The laws introduce the general biosecurity obligation, meaning livestock producers must take an active role in managing biosecurity risks under their control and must ensure their actions do not spread plant and animal pests, diseases or contaminants.

You are not expected to know about all types of pests and diseases, however you are expected to know about those that you could potentially come across as part of your daily activities. You need to ensure you can recognise and manage the various pest animal and plant species present in your area. Under the Act, and as part of your general biosecurity obligation, you must take specific actions to limit the spread and impact of these pests, known as restricted matter, by reducing, controlling or containing them. You must not share, sell, trade or release restricted matter into the environment unless you are authorised to do so in a regulation or under a permit.

There are also new reporting requirements and restrictions on the movement of some restricted matter contained in newly introduced biosecurity zones. These zones can be specific to the type of restricted matter being managed, for example red imported fire ant biosecurity zones and horticultural biosecurity zones.

To find out more about your responsibilities visit [www.biosecurity.qld.gov.au](http://www.biosecurity.qld.gov.au) or call 13 25 23.



# Producers and researchers to connect at Northern Beef Research Update Conference

**Beef producers and researchers** are invited to come together at the Northern Beef Research Update Conference (NBRUC) in Rockhampton, to strengthen lines of communication between industry and the research and development (R&D) sector.

The 16–17 August conference is themed It's Time to Connect and will showcase the latest beef industry research through presentations, keynote speeches and interactive poster displays. Delegates are also invited to attend a Welcome Reception on 15 August and an optional one-day field trip on 18 August.

The Department of Agriculture and Fisheries is a platinum sponsor of this event.

The triennial conference is organised by the North Australia Beef Research Council (NABRC), an independent body that provides leadership and advice to organisations that invest in or undertake beef cattle R&D and extension in northern Australia.

Chair of the NBRUC organising committee, Libby Homer, Baralaba, said the conference would allow producers direct access to scientific findings that could positively impact their bottom line.

'Researchers will be sharing insights from current and planned projects that can help the northern beef industry overcome production challenges and be more innovative and profitable,' Ms Homer said.

The two day conference program will highlight a range of economically important research areas including supplementation and nutrition, animal health and welfare, and reproduction.

Noted guest speakers include the 2015 Kondinin Group Australian Livestock Producer of the Year, Prue Bondfield, Palgrove Charolais stud, Millmerran.

Ms Bondfield is also the Chair of the steering committee tasked with developing a sustainability framework for the Australian beef industry and will

discuss opportunities for producers to influence research investment and outcomes.

The final conference session will be presented by inspiring 2015 Telstra Australian Entrepreneur Award winner Marie Piccone, Managing Director of Manbulloo Ltd: Australia's largest producer of Kensington Pride mangoes and a major supplier to Coles and a number of lucrative export markets.

A celebratory conference dinner will be held on 16 August to present the 2016 NABRC Medals, which recognise the achievements of those who have made a significant contribution to the northern Australia beef industry in the fields of production, R&D, and communication or extension.

Ms Homer said a Welcome Reception and an After Party would provide further opportunities for delegates to interact and have fun.

'We promise to leave delegates better informed and better connected, and encourage all producers and researchers to attend this very relevant beef industry conference, which only happens once every three years.'

The conference will be held at the Leichhardt Hotel in Rockhampton CBD and delegates have the option of joining a post-conference field trip to Belmont Research Station and Central Queensland University.

Conference registration should be made online at [www.nbruc.com.au](http://www.nbruc.com.au), but please note that registrations received after Tuesday 2 August cannot be guaranteed.

**Call the NABRC Secretariat** Jackie Kyte on 0409 564 729 for further information.



## Editorial committee

Byrony Daniels, Michael Sullivan (DAF)

## Enquiries

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## FLOCK TALK



# Strategic management boosts Mitchell grass recovery post drought

After four years of drought the most common question western Queensland-based scientist David Phelps gets asked isn't about rain, it's about grass and it's asked anxiously.

The Longreach Department of Agriculture and Fisheries (DAF) principal scientist said one of the biggest concerns for western landholders was whether Mitchell grass would recover after the prolonged dry.



Dr David Phelps from the Department of Agriculture and Fisheries in Longreach believes Mitchell grass will recover from drought with strategic management.

Speaking at a Leading Sheep restocking forum in Longreach he offered sheep and wool growers historical evidence indicating the resilience of the native pasture, but explained good management would play a critical role in its recovery.

"People can be optimistic that their Mitchell grass pastures will recover with rain, even though there may be losses due to a prolonged period of low rainfall and high evaporation," Dr Phelps said.

"But how well pastures come back will depend on how long they are rested or spelled as they start growing after rain."

Given relief rain has been sporadic through western Queensland and much of the region remained drought-affected his talk to Leading Sheep producers had two aspects: estimating critical feed budgets for those with sheep still in paddocks, and spelling country for those who had destocked.

"Accurately estimating what feed you have available is critical, especially when it's very dry and your pasture management is challenged," Dr Phelps said.

"Ideally with Mitchell grass you should not graze (alive) tussocks below 15 cm, because the taller the plant the more responsive it is to rain."

"For example if you have 15 cm stubble it will respond with fresh leaf along the stalk, if you get just 25-50 mm of rain."

"If you graze Mitchell grass right to ground level, it is more susceptible to dying and will need 100-150 mm of rain to get a real response."

For those producers fortunate enough to have had rain are now preparing to bring stock back from agistment, Dr Phelps urged them to try to spell Mitchell grass for a minimum of six weeks before restocking.

"I understand the financial pressure and it's a tough situation to be in, because agistment is expensive but if you can give your country 6-12 weeks to recover it will work better for your long-term pasture levels."

If daytime temperatures were around 30 degrees and the nights were above 12 degrees then rain would benefit the predominately summer growing grass.

"In 2007 we had 4-6 inches (100-150 mm) of general rain in June and mild temperatures for a fortnight and the Mitchell grass responded incredibly," Dr Phelps said.

"It is an extraordinarily resilient grass, individual plants can live for 20 to 30 years, so the more you look after it in the good years, the better it will see you through the dry."

He said historical data from the millennium drought between 2001 and 2009 showed Mitchell grass country, which had been spelled during summer, had a better response to rain, than even areas that had been lightly stocked.

Wet season spelling should ideally be for a minimum of six weeks, but pasture that was struggling to respond could need 4-5 months' rest.

"If you give it time and rest it will usually recover. The other question I have been asked



Plant 1 was spelled for six months (ungrazed), plant 2 was spelled for eight weeks then grazed, plant 3 was grazed as soon as leaves grew.

is: is it worth putting out Mitchell grass seed? My advice is save your money," he said.

"Trials in the 1990s found there was more Mitchell grass seed in the soil than we could commercially put out, so it really is about managing your country so it has a chance to recover. Ideally you will have at least one Mitchell grass plant every square metre, but as few as 12 or so Mitchell plants in a hectare can produce the equivalent of commercial sowing rates. Taking good care of those isolated plants can save you hundreds of thousands of dollars in sowing costs."

"Yes there will be tussocks in the paddock that are dead, but there will also be Mitchell grass that survives and that's what makes it such a valuable pasture."

### Top 5 tips for Mitchell grass management

1. Give pasture a minimum of six weeks, and ideally 12 weeks, to spell after rain and before restocking.
2. Ideally Mitchell grass tussocks should not be grazed below 15 cm – the taller the plant the more responsive it is to rain.
3. If you have 15 cm stubble it will respond with fresh leaf along the stalk, with just 25-50 mm of rain.
4. If Mitchell grass is grazed to ground level, it is more susceptible to dying and will need 100-150 mm of rain to get a response.
5. Annual wet season spelling should be for a minimum of six weeks, but pasture that is struggling to recover could need 4-5 months' rest.



## Leading Sheep

leading the way with new technologies, knowledge and skills

For many this has been one of the worst droughts in memory, but hopefully by the time of printing it will be a distant memory and the much needed relief rain has arrived.

This edition of *Flock talk* is focusing on pasture management and although the articles are centred on Mitchell grass the principles apply to all grasses.

If you have received some rain then hopefully you are able to spell your pasture for a minimum of six weeks as recommended by Dr David Phelps. If not then you will need to consider destocking or agisting before your pasture is eaten down too far. This will allow it to recover more quickly and easily when it does rain, similar to what happened on Somerset, Dave Owen's property.

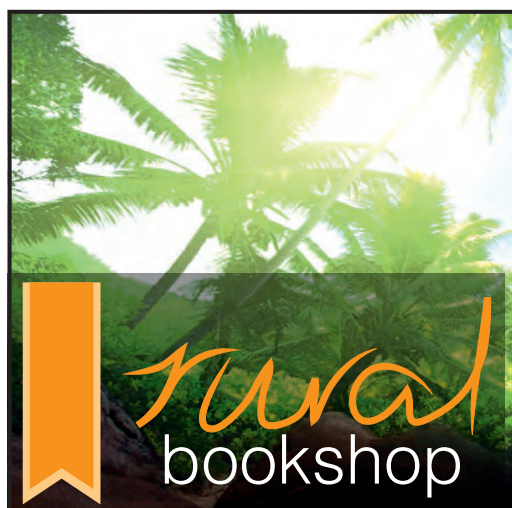
If you want to know more about pasture management then the Leading Sheep website, [www.leadingsheep.com.au](http://www.leadingsheep.com.au), has a range of useful resources on this topic as well as many more including:

- a series of three short webinars on the changes to the Ovine Johne's Disease framework for Queensland
- two short webinars on the transport subsidy available for restocking and stock returning from agistment
- a fact sheet on important considerations when restocking.

If you want to keep up to date with upcoming events and activities, please sign up to our monthly e-newsletter 'Around the Camp' at [www.leadingsheep.com.au](http://www.leadingsheep.com.au).

*Leading Sheep is a proactive network of Queensland sheep and wool businesses; at the forefront of practical and relevant information and technology to equip progressive and thriving producers for the future.*

Nicole Sallur  
DAF senior sheep extension officer  
Leading Sheep project manager  
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# Making grass budgets a base for business

Traditionally, **Dave Owens** has described himself as a ‘wool grower’, but he says today it would be more accurate to say he was in the ‘Mitchell grass business’.

**A seventh generation landholder**, Mr Owens runs a 11,500 ha sheep and wool operation at Somerset, a grazing property 70 km south east of Longreach in western Queensland.



Dave Owens ‘Somerset’ Longreach describes himself as being in the Mitchell grass business.

For him, a run of dry seasons, coupled with the predatory challenges of wild dogs, the grazing pressure of kangaroos and a volatile wool market forced him to reassess his operational approach. This brought him face-to-face with the base element of his business: grass and land condition.

“The average rainfall here is about 14-15 inches and we had that in 2014, but last year we measured less than half that, so early on I knew I was in trouble grass-wise,” Mr Owens said.

“I was forced to start feeding lambing ewes and while I’m accustomed to supplementary feeding in late August/September I couldn’t afford to feed from May so I had to sell, completely destock. It was a tough decision, but I knew it was the right one for my country.”

He said the decision was made easier and significantly less stressful by the fact he knew the feed budget figures wouldn’t stack up.

“It gave me hard data to work with instead of emotion. I could look ahead and see the implications of my actions on my finances and importantly on my Mitchell grass in the long-term,” Mr Owens said.

“In my case the Mitchell grass was only about 15 cm high from the rain at the start of the year. So as soon as the end of March came I knew that I had to enter into a destocking program.

“Agriculture has always been considered a bit of a gamble and there are still elements you can’t control like the weather, but the fact is we now have the capacity to put some hard data around feed budgets and stock number mixes. It empowers you when it comes to making management decisions.

“It has allowed me to see how and what I need to do in terms of stock rates, down to specific paddocks, to manage my grass for the long-term, because it is the basis of my operation.”

Rain earlier this year has allowed Mr Owens to buy sheep in to restock his country: he is now running around 3000 young merino ewes on a property with carrying capacity of 7000 dry sheep equivalent (DSE).

He said he was surprised by how his country responded once it rained.



Longreach producer Dave Owens has been impressed by how his pasture country responded to 150 mm of rain spread over three falls.

“This year I have been very impressed by the response from the rainfall events. I have had about 30 per cent mortality in the Mitchell grass tussocks overall, but the ones that survived have responded tremendously to the 150 mm (6 inches) in three falls.”

He works on spelling the majority of his country for 14-16 weeks during the wet season, but admits it isn’t always possible to give pasture such an extended break. But he believes resting or spelling country has paid dividends in terms of the Mitchell grass response this year.

“I am comfortable projected stock numbers at the moment match our grass budgets, however I am also very conscious I currently have significant roo pressure,” Mr Owens said.

“So when I do my stock calculations I have to factor in an additional 3000 DSE animals, because I estimated (based on paddock counts and local environmental figures) there are between 5000-6000 roos on Somerset at the moment.

“It is the downside of being one of the few places to get reasonable rain in a very large area, but that’s where feed budgeting allows you to get a realistic idea of what you really have available in the paddock.”

He admits calculating feed budgets can be a complex task, but he believes working through the figures becomes easier with practice.

“The information that you need to collect to do a feed budget is quite involved, but it’s all down to the quality of the soil and the quality of the grass, in particular, land type areas. Then the amount of your annual grasses and the amount of unpalatable types,” Mr Owens explained.

“This all goes into a calculation and you decide how much you need to leave to maintain pasture and land condition and gives you an amount of kilograms of dry matter that can be used for grazing.”

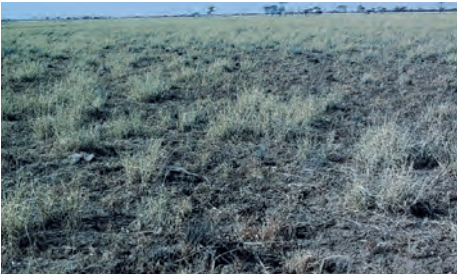
Despite the situational challenges facing his enterprise and the sheep and wool industry in general, the 33-year-old landholder is optimistic about the future of agriculture.

“My immediate plan is to stay in the sheep industry, it is what this country is best suited for,” he explained.

“Yes we have had some issues with wild dogs, in the worst affected paddocks I lost 50 per cent of my lambs. But I now have a 14 km dog



A dry paddock on Somerset in December last year. The Mitchell grass was grazed to a height of about 15 cm.



The same paddock in April this year - despite the dry 70% of the Mitchell grass tussocks survived.

fence with one neighbour and we are looking to do more exclusion fencing this year, so I am confident that will make a significant difference to the dog pressure.

“Overall I think, what makes it easier to determine the direction your business should be taking, or whether it really is worth doing, are the facts and figures available now for individual grazing enterprises.

“For me personally, the more science and data available, the better tools I have to make decisions about managing grass and land condition. These two things are first and foremost in a grazing business like mine.”



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