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# BEEF TALK

*Taking stock of your future*

## Perseverance pays off

Craig and Leslie Hanson on a journey to become Grazing BMP accredited and organic in Kandanga.

## Pimelea poisoning

More research needed.

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## Welcome to Beeftalk 47

Hopefully there is some good rain ahead. New season pasture growth is the ideal time to wet season spell some pastures. For heifers and breeders on phosphorus deficient country it is also time to provide phosphorus supplements. New research has measured the significant impact that phosphorus deficient diets can have on breeder liveweight, milk and weaner production. The P-screen article describes how blood samples from growing stock at the end of the wet season can be used to test for phosphorus deficiency.

Fire is a critical tool for managing land condition in Southern Queensland woodlands. A project in the Maranoa has been collaborating with producers in making fire plans. The project also wants to capture landholders' valuable knowledge and understanding on the best use of fire. To add to this knowledge base please phone Rhonda on 0428 759 235 or do the online survey using the link in the fire article.

Pimelea poisoning is an ongoing problem costing producers in southern inland Queensland dearly. There is hope for renewed research into reducing its impact on livestock.

Shane Webcke has joined forces with Workplace Health and Safety Queensland to remind people that working on the land is a risky business. Their new campaign encourages people to stop and think about doing your job safely as this could save your life and livelihood.

On the finance front our Rural Financial Counsellors also remind you that they are spread across Queensland and ready to help with your finances, talking with banks and applying for available assistance.

Our "Perseverance" story is about the Hanson's move from the city and their journey in learning about the land and how to improve it.

Thanks Sandy Adsett (Biosecurity QLD) for the front cover photo.

Happy reading,

**The Beeftalk team.**

# Fire – feed base friend or foe?

**Absence, frequency and timing of fire is a grazing land management decision which can influence long term carrying capacity.**

In southern Queensland woodlands, fire is a key driver of changes to the total feed base available for production, land condition, carbon balance and biodiversity.

In the Maranoa, indeed across Australia, fire remains an important part of our landscape's ecology but the use of fire as a tool has regularly been put in the "too hard basket" as we've added infrastructure, introduced pastures, crops and new land uses. The need to use and manage fire remains, the challenge now is ensuring the skills needed to use it safely and effectively exist.

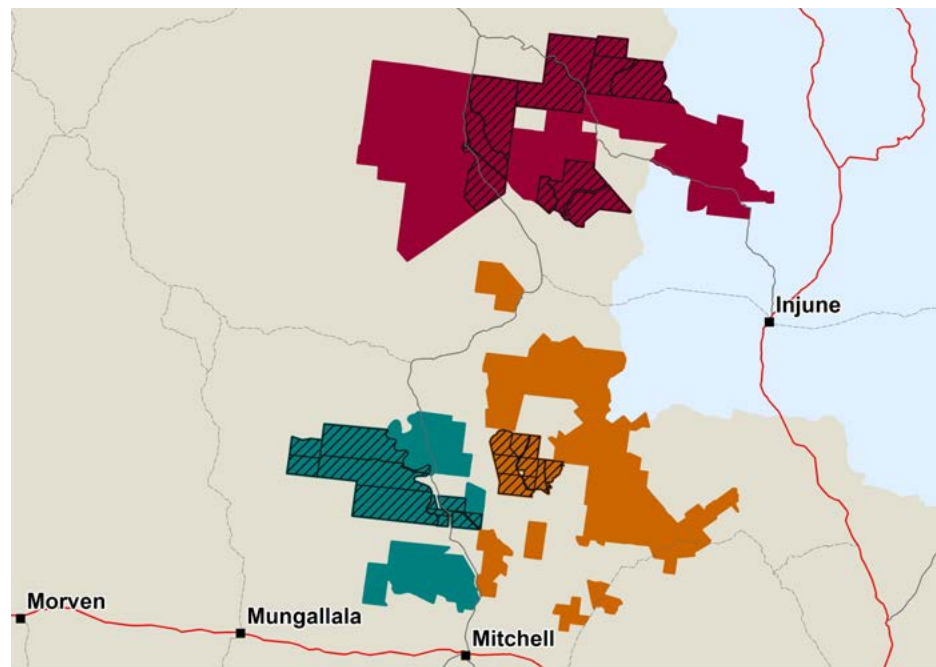
The Queensland Murray-Darling Committee's (QMDC) federally-funded "Landscape Fire Planning in Poplar Box Grassy Woodlands" project in the Maranoa is helping producers talk about this challenge, learn from each other and explore options for managing and respecting the role of fire in the landscape.

The project has helped more than 70 farming businesses covering more than 413,000 ha over four years to work through developing individual and group fire strategies to support improved fire management planning.

Fire planning decisions will vary each season but deciding to burn or not still requires considerable forward planning to achieve your goals.

To simply say, "I don't use fire" doesn't mean you won't experience a fire on your property; it's just more likely to be unexpected, unwanted and untimely. A fire plan does not stop at your front gate. It must include your neighbours for fire exclusion or burning adjacent areas across property boundaries and collaborative communication across the fence. QMDC's Fire Project has brought neighbours and other stakeholders together to draw up district and catchment level fire management plans.

The best place to start fire management planning is with a property map. At a minimum, mark infrastructure and areas for asset protection while discussing and developing



*The extent of QMDC's Fire Project in the Maranoa*

appropriate strategies to protect these from fire losses and damage.

If you decide to burn to achieve a particular goal, then important preparation is grazing management to retain fodder and protect the required fuel loads.

Forage budgets will help you to match stock numbers to available feed (fuel for fires). In lower rainfall environments this may take more than 12 months depending on prevailing seasonal conditions. However, in better seasons higher pasture growth rates are likely to affect fire behaviour requiring a strategy rethink.

The approach taken in the Fire Project is to match the fire regime (fuel load, timing and intensity) to land types to achieve specific outcomes, e.g. improved production, biodiversity and/or carbon. These tips may help you with fire planning this season:

1. Map the dominant land types across your property and identify the ones you want to burn, when and why
2. Identify the condition these areas are in, either A, B, C or D condition
3. Decide what you want the land condition to be, i.e. maintained, improved or rehabilitated

4. Calculate if fire is the most cost-effective way to achieve these goals
5. Determine what you must do to match fire behaviour at the site with your land condition objectives – a forage budget can help you manage grazing for the necessary fuel load and fire intensity
6. Plan how will you manage grazing after the fire to achieve your objectives
7. Talk with your neighbours and fire warden about your plans well in advance and get the paperwork in order so when the conditions are favourable you are right to go
8. Take photos before and after, make notes in your diary and review whether your land condition objectives were met in subsequent years and what you would do the same or differently next time.

The Fire Project is still gathering landholders' knowledge and understanding of fire use via a short survey. You can do the survey online at [www.qmdc.org.au/climatewaste-energy-and-fire/qmdc-fire-project-.html](http://www.qmdc.org.au/climatewaste-energy-and-fire/qmdc-fire-project-.html) or phone Rhonda Toms-Morgan on 0428 759 235.

Visit [www.qmdc.org.au](http://www.qmdc.org.au) for more information.



# Perseverance pays off

Craig and Leslie Hanson started their journey with 'Perseverance' in 2004 as a weekend escape caretaking their friends' 260 hectare property at Kandanga, near Gympie.



Leslie and Craig Hanson

Born and bred in the city with no relatives in farming the Hanson's were "complete novices with no preconceived ideas on farming." Their journey began under the guidance of the young farmhand on the property. In 2008 their ownership dream became reality and in 2012 they moved from Brisbane to the farm fulltime.

The four years of weekend work prior to ownership gave the Hanson's time to determine their direction for the property. To achieve their goals and gain knowledge they attended workshops and field days, chatted with neighbours and become involved with local catchment groups. This desire to learn led them to the Grazing BMP program.

Craig and Leslie have made a number of changes inspired from groups and programs like Grazing BMP. Perseverance's history includes pineapples, vegetables, dairy and beef cattle. With this in mind Craig and Leslie started

by resting the farm for two years. During this period they extensively slashed and mulched to return much needed organic matter to the soil. They now run 60 Brahman breeders.

The Hanson's sourced funding through their local catchment group the Mary River Catchment Coordinating Committee (MRCCC) to fence some riparian areas and add watering points to improve grazing of the hills. Due to inexperience they preferred smaller paddocks for easier stock handling which led to cell grazing. They hope to improve their pastures using cell grazing and sowing Rhodes grass and white clover. Cell grazing is also allowing them to slowly open up more grazing country.

After attending a number of workshops, field days and seminars the Hanson's "consider themselves soil farmers, as without good soil you will not get good grass, and without good grass you will not get great cattle." Their focus

on soil and pasture health led to an interest in dung beetles and the purchase and release of over 1000 beetles to the property. A desire to source natural fertiliser and use cell grazing gave them the opportunity to become involved with the 'Green Chicken Project' led by Central Queensland University (CQU).

"It is an exciting program that consists of feeding biochar to chickens and collecting the litter to spread on our cells." The control cell is seeded, while all other cells are seeded, aerated and then either receive biochar litter or normal chicken litter treatment. Leslie described the trial as "an exciting plus for Perseverance and a huge learning curve for us all".

One of the biggest challenges the Hanson's currently face, along with many other farmers in the area, is the threat of Giant Rat's Tail Grass to their pastures. Due to their dislike of poisons they want to trial alternative natural control methods with acetic acid and are looking to establish trials with CQU to gather data.

Craig and Leslie are grateful for the various programs and organisations they have become involved with stating "as city folk turned farmers we are proud of what we have achieved so far and are grateful to programs like Grazing BMP which have helped us shape the direction we wish to take our business."

"Without programs and organisations like Grazing BMP, MRCCC, Gympie Beef Liaison Group, Landcare and government departments we would not have gained the knowledge or courage to take on the challenges we have."

"We thank the Grazing BMP program for their workshops, which cater not only for raw beginners like us, but also those that have farmed for generations. We urge everyone to take the time to stop and listen, chew it over and consider changes they could make to improve their businesses. We have come to the conclusion that healthy soil and healthy grass means healthy cattle and healthier human beings and has the potential to give our next generation a better place to live."

Craig and Leslie plan to become Grazing BMP accredited and organic in the future.



## Editorial committee

Roger Sneath, Damien O'Sullivan, Felicity McIntosh, Rebecca Farrell, Megan Gurnett, Tracy Longhurst (DAF) and Carli McConnel representing the South East Queensland Regional Beef Research Committee.

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# Rural Financial Counselling Service provides assistance and information



The Rural Financial Counselling Service (RFCS) provides free rural financial counselling to farmers, fishing enterprises, forestry growers and harvesters, and small, related businesses who are experiencing financial hardship.

Queensland is covered by two service providers – RFCS Northern Queensland and RFCS Southern Queensland. The southern team has increased to 17 counsellors covering all areas of Southern Queensland and are based in Biggenden, Biloela, Charleville, Emerald, Goondiwindi, Gympie, Kingaroy, Lockyer Valley, Miles, St George, Toowoomba, Rockhampton, Roma and Warwick.

## Need some help assessing your business options?

Over the past few years rural communities have faced enormous challenges. The Rural Financial Counselling Service is available to support your business in the recovery phase.

If you are a primary producer and would like to discuss your businesses financial position the RFCS can help you. They can analyse your financial circumstances, help you identify your financial options and support you to make informed decisions for your future.

How they can help:

- preparing cash flows
- analysing risk
- developing a business plan
- negotiating with your lenders
- preparing for succession planning
- preparing for retirement
- assisting you to access the Farm Household Allowance (FHA)
- providing information about government and other assistance schemes

The RFCS Programme is funded by the Australian, state and Northern Territory governments to provide free, confidential and impartial financial counselling. Rural financial counsellors do not provide family or social counselling or financial advice—but they can provide referrals and information. The RFCS are a mobile workforce who can come to you.

## Better banking

It is important to maintain a strong working relationship with your lender and regularly review your loan to ensure you have the best interest rate and facility arrangements. When you are impacted by natural disasters, droughts or other events that will affect your bottom line, it is important to keep your lender informed.

Rural financial counsellors can assist with preliminary debt restructure options, finance applications or refinancing proposals and also assist in negotiations with lenders.

## Useful tips when dealing with your lender

- Communicate with your lender constantly and develop a good working relationship
- Have up to date financial information available in a timely manner
- Know and understand your financial position
- Clarify anything you don't understand
- Don't commit to anything you cannot meet
- Don't ignore deadlines

## Further financial help for you

During the drought many primary producers contacted the RFCS for information on assistance programs, application processes and to discuss business and financial queries regarding their enterprise. The following assistance schemes are still available and our counsellors can assist with applications:

- Farm Household Allowance
- Farm Household Allowance - off farm income offset
- Queensland Government Drought Relief Assistance Scheme (DRAS)

For any further information or assistance requests please contact one of the rural financial counsellors or RFCS-SQ Head Office on 07 4622 5500.

## New campaign to target agriculture industry work deaths



Shane Webcke, Queensland Work Safety Ambassador

## Did you know that only three per cent of Queenslanders work on farms, yet nearly 30 per cent of workplace deaths happen on them?

Around 13 Queensland agriculture workers die each year as a result of a workplace incident and 1700 are injured – affecting one in every 25 agriculture workers.

Workplace Health and Safety Queensland is focusing on reducing these unacceptable statistics through a new safety campaign.

The campaign is supported by Queensland Work Safety Ambassador Shane Webcke. Shane lost his father in a workplace incident so he knows firsthand how important health and safety is in the agriculture industry – he grew up on the land and today runs his own property.

“If you work on the land, stop and think about doing your job safely. Because those few seconds could save your life - and your livelihood.”

Farm deaths are preventable. The campaign aims to increase agricultural employers and workers' awareness of the over-representation of worker deaths and injuries among those who make their living off the land.

For more information, including a performance update of the agriculture industry, and to get involved, visit [worksafe.qld.gov.au/agsafetycampaign](http://worksafe.qld.gov.au/agsafetycampaign) or call 1300 362 128.

### Southern Queensland RFCs contact details:

Location	Rural Financial Counsellor	Contact
Biggenden	Kim Corfield	0427 296 848
Biloela	John Lacey	0448 124 016
Charleville	Fleur Morrish, Angie Bowden, Alicia East	07 4654 3455
Emerald	Emma Cook	0447 789 109
Gatton/Lockyer Valley	Zoe Burke	0477 056 074
Gympie	Derk Abberfield	0428 755 708
Goondiwindi/St George	Kay Barby	0447 760 743
Kingaroy	Belinda Clair	07 4160 0736
Miles	Glen Budden	0429 894 474
Rockhampton	Sally Ottaway	0427 803 706
Roma	Vicki Beitz, Nathan Wichlacz, Dale Murphy	07 4622 4858
Toowoomba/Western Downs	Lewes Golden	0447 764 483
Warwick	Michael Fagg	0419 732 591



# Pimelea poisoning in south and central west Queensland

Pimelea is one of several naturally occurring plants that can be toxic to livestock throughout significant areas of Australia.

The most affected regions are southern inland, south and central west Queensland, northern New South Wales and South Australia.

Pimelea poisoning, also known as St George disease or Marree disease, can result when cattle ingest these native herbaceous plants. Only three of the 99 Pimelea species in Australia are known to be toxic to cattle.

In recent years, pimelea growth has been prevalent in many parts of Queensland where dry summers have been followed by winter rain. Since early 2016, pimelea has been a primary cause of cattle deaths in southern inland Queensland.

The effects of pimelea have been exacerbated with increased stock movement as animals have been agisted from droughted areas or purchased after rain. Extraordinary winter rain in many areas has encouraged pimelea growth in southern inland and western Queensland – elevating grazier concern.

Pimelea poisoning has previously been estimated to cost the cattle industry up to several million dollars in a single year through lost production, stock deaths and costs of supplementary feeding, agistment and management and transport costs.

The effects of pimelea poisoning are not always predictable. While affected cattle can experience gastro irritation and diarrhoea, the full blown St George disease shows up as swellings, usually under the brisket, belly and jaw.



*Pimelea simplex in Quilpie area. Photo Jenny Milson*

This is caused by constriction of the smooth muscle in the lung veins which eventually leads to excess fluid or oedema. Affected cattle also lose their appetite and condition. They can eventually die from heart failure.

Sheep may show signs of gastro irritation and diarrhoea. However, they lack the smooth muscle that cattle have in their lung veins so they don't develop St George disease.

While generally unpalatable, pimelea is eaten when little else is available or when it is growing amongst other palatable feed and stock cannot separate it easily. While unpredictable, it appears that inexperienced, hungry cattle that are moved to new paddocks are more susceptible.

## Management options

Individual case consideration is often necessary as there are many influencing issues including country type, dominant Pimelea species and type of beef operation.

Animal management is the main means of minimising losses. Hungry stock must not be allowed access to green pimelea plants. It is especially important to closely monitor pastures and regularly observe stock in affected paddocks. At first signs of poisoning, move stock quietly and immediately to pimelea-free areas or feed them good-quality hay; those in the early stages of St George disease are likely to recover. Selective herbicides may be an option to create 'hospital paddocks' or where

farming or intensive property development occurs. Keep in mind you need a minor use permit in these instances and you need to consider the high costs involved using herbicides over large areas.

## Research potential

Feeding trials in 1969 and 1970 established the cause of pimelea poisoning, however attempts to produce a vaccine against the poisoning in 1990 were unsuccessful.

A significant collaborative project led by AgForce and the-then QDPI&F from 2006-2009 improved our understanding of pimelea plant ecology and pimelea poisoning epidemiology.

The research results also indicated that cattle consuming small amounts of pimelea daily can develop a tolerance to the toxin. We do not understand why; possibly it is via modification of rumen microflora.

With beef industry support, there is enormous potential to explore and better understand pimelea ecology, the pimelea-animal complexities and to research new management options such as isolating rumen microflora that break down the pimelea toxin.

*For more information, including recommended management practices and research results, download the 'Understanding pimelea poisoning of cattle' booklet from [futurebeef.com.au/resources/publications](http://futurebeef.com.au/resources/publications). Or call the Customer Service Centre on 13 25 23.*

## P-screen evaluates phosphorus deficiency in grazing cattle

Phosphorus (P) deficiency is arguably the most important nutritional problem limiting cattle production in many regions of northern Australia.

Symptoms like peg-leg make the problem obvious, but subclinical deficiency may also have large effects on productivity and is not so obvious. Depraved appetite and bone chewing are certainly indicators. There is also a test called the 'P-screen' test which is currently the most reliable diagnosis tool available.

The P-screen test involves using a group of growing cattle (20–25 steers or heifers providing they are not in late pregnancy) as a sentinel herd and grazing them in the paddock to be tested through the wet season on good quality green feed for at least three months.

Consideration needs to be given to the most important breeder paddock on a property to test. These sentinel cattle must not be fed any P supplement. Blood and faecal samples need to be sampled in the late wet season using a sampling kit.

The blood is used to measure the concentration of inorganic phosphorus (Pi or PIP) in the blood. The faecal sample is analysed using NIRS (near infrared reflectance spectroscopy) to estimate diet quality and phosphorus concentration is also measured.

Growing cattle are used because the test is less reliable with lactating cows. If results indicate the growing sentinel cattle are P deficient then it is expected that breeders should respond to a P supplement.

It is also possible to use faecal samples alone (no blood samples) to estimate the P in the diet of cattle but this is less reliable than using blood samples as well and the results should only be considered as a guide.

P-screen kits can be purchased from the Department of Agriculture and Fisheries Biosecurity Sciences Laboratory, Coopers Plains, Brisbane, 07 3276 6062, email [BSLCL0@daf.qld.gov.au](mailto:BSLCL0@daf.qld.gov.au).

*More information on phosphorus management and diagnosis is on the FutureBeef website ([futurebeef.com.au/knowledge-centre/nutrition](http://futurebeef.com.au/knowledge-centre/nutrition)) or contact your local DAF FutureBeef extension officer.*



*Animal showing clinical signs of St George disease. Photo Dan Burton*



# Research on phosphorus nutrition gives new ideas for breeder management

Cattle grazing many parts of northern Australia may become deficient in phosphorus for at least part of the year, and the problems of poor calf and cattle growth, low fertility and, in acute deficiency, 'peg-leg', are well known.

In recent decades phosphorus supplementation and better management have reduced the worst of these problems but subclinical phosphorus deficiency can still have major effects to reduce herd productivity and profitability.

Fixing phosphorus deficiencies can increase liveweight gains by 50 kg (and up to 100 kg) per annum and branding rates by 10–15 per cent.

Most of the research conducted in northern Australia on phosphorus nutrition and supplementation has been with growing cattle - much less is known about phosphorus nutrition in breeders.

While there are many reports that feeding phosphorus improves reproduction rates, the impacts and level of response are not well understood for northern Australian breeder herds.

Cows, unlike growing steers, have a natural ability to partly offset an interval of diet phosphorus deficiency during late pregnancy or early lactation. This is because they can use (mobilise) body reserves, mainly from bone, to supply some extra phosphorus to avoid the worst effects of phosphorus deficiency when pasture is very low in phosphorus.

This ability of breeders to access phosphorus from body reserves can be compared to their using body fat and muscle when they cannot get enough energy from pastures. In most years breeders use their body energy reserves at some time during some stages of the annual seasonal cycle.

In the case of energy we can assess cow body condition and liveweight to estimate if they can afford to lose weight to look after their calf. Unfortunately there is no such simple way to know if a cow has high phosphorus reserves.

The aim of a major research project 'Improved management of cattle phosphorus status through applied physiology' is to improve understanding of the phosphorus needs of reproducing cows and to look for better and more cost-effective phosphorus nutrition management options.

To better measure the impacts of phosphorus deficiency on pregnant and lactating cows and their calves the project team fed mature Droughtmaster-

Measurement	Experiment 1		Experiment 2	
	P-Adequate	P-Deficient	P-Adequate	P-Deficient
Cow LW change during first 3 months of lactation (kg)	+18	-36	+17	-27
Feed intake (kg/day)	10.2	8.5	7.1	6.5
Blood PIP (mmol/L) <sup>1</sup>	1.5	0.7	1.8	0.5
Blood PIP (mg P/L)	47	23	56	16
Milk production (kg/day)	5.8	4.6	–	–
Calf growth during the first 3 months (kg/day)	0.70	0.58	0.94	0.76
Calf LW at 3 months of age (kg)	94	83	128	109

<sup>1</sup> Blood phosphorus is usually measured as plasma inorganic phosphorus (PIP) and may be expressed as mmol/L or mg P/L. Multiply mmol/L by 31 to calculate mg P/L.

type cows in good condition (body condition score 3–3.5) high phosphorus diets during pregnancy.

After calving they moved the cows and calves to pens and fed half on diets adequate in phosphorus (P-Adequate) and the other half on diets very deficient in phosphorus (P-Deficient) for the first three months of lactation.

Detailed measurements were taken of cow and calf liveweight (LW), feed intake, milk production and blood phosphorus (also known as plasma inorganic phosphorus (PIP) which is measured in millimoles per litre (mmol/L)).

In both experiments feeding a very phosphorus-deficient diet instead of a phosphorus-adequate diet reduced the blood phosphorus to 0.5–0.7 mmol/L confirming that the cows fed the phosphorus-deficient diet really were severely phosphorus deficient. The results of the experiments are summarised in the table above.

These results showed that mature, Droughtmaster-type cows in good body condition and fed adequate phosphorus during pregnancy (with high body phosphorus reserves at calving) can maintain reasonable calf growth during early lactation even when fed a very phosphorus deficient diet. However there is a penalty – the cows maintained milk production and calf growth by losing a large amount of liveweight and some of their bone phosphorus reserves.

The phosphorus-deficient cows lost about 30 kg liveweight making them about 50 kg lighter than the phosphorus-adequate cows, or about one body condition score. The phosphorus-adequate cows gained about 20 kg during the first three months of lactation.

The growth of the calves of the severely phosphorus deficient cows was also affected so that at three months of age the calves were 11 and 19 kg lighter. These results were as expected given the lower milk production measurements of the phosphorus deficient cows.

Calves 10–20 kg lighter at three months of age may be considered acceptable given the costs of phosphorus supplementation. Similarly, breeder liveweight loss may also be an accepted management strategy, providing the liveweight and body phosphorus reserves can be recovered before the next calving. However allowing severe breeder liveweight loss in early lactation is likely to lead to three potentially serious longer-term problems for herd productivity:

1. Low liveweight breeders generally have low pregnancy rates and so cows phosphorus-deficient in lactation are much less likely to reconceive. If they do reconceive it is often delayed resulting in late calves and lighter weaners
2. On most northern Australian pastures it is usually difficult for breeders to recover body condition between weaning and their next calf
3. Cows probably have a limited capacity to quickly recover bone phosphorus reserves when grazing dry season pastures.

There are likely to be 'knock-on' effects of phosphorus-deficiency on cows during lactation. Effects on overall herd productivity may not be seen until the following year when the breeders have exhausted their body phosphorus reserves and have less body reserves of energy and phosphorus available to mobilise.

Unless cows have good nutrition in the dry season they are likely to skip a pregnancy – or if pregnant produce light calves at the next weaning. So while you may not see returns on supplementing breeders with phosphorus in the short-term the longer term benefits may well pay off.

An important caution: the capacity of cows to use body bone reserves to maintain calf growth also depends on their age. The results in the table are with mature breeders – the results from other experiments indicate that first-calf cows cannot use body reserves to maintain calf growth in the same way.

Dr Rob Dixon with QAAFI, University of Queensland (UQ), leads the project team of animal scientists in UQ (QAAFI, Veterinary and Biomedical Sciences Schools) in collaboration with Queensland Department of Agriculture and Fisheries (DAF) beef industry staff, including Stephen Anderson, Lisa Kidd, Marcelo Benvenuti, Mary Fletcher (UQ) and Kerry Goodwin and Brian Pastures Research Facility staff (DAF). The project is supported by Meat & Livestock Australia (MLA).

*For more detailed information about phosphorus deficiency download a free copy of the Phosphorus management of beef cattle in northern Australia booklet from MLA ([www.mla.com.au/news-and-events/publications](http://www.mla.com.au/news-and-events/publications)).*

*Read the P-screen test article in this issue for information about testing for phosphorus deficiency in cattle.*

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