FutureBeef

CQ Beef

Better Economic & Environmental Futures

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Queensland Government

QUEENSLAND Country Life

Drought relief ready for applications

Beef adviser available as a sounding board

Help with critical management

UNFORTUNATELY there has been no ripper wet season this year, and with the late break in many areas pasture growth will be restricted.
With a second light year in a row for a lot of properties, decisions and the timing of decisions on stock numbers, marketing, weaning and supplementation will be critical for the short and long term performance of businesses.

Should you need some advice, want to run some economics on your options or need a sounding board for your drought management plans, please contact your local beef adviser (contacts below).

These officers will also be able to guide you through applications for the Drought Relief Assistance Scheme help including paperwork for the water infrastructure rebate and freight subsidies.

The application forms are available on the DAFF website www.daff.qld.gov.au/environment/drought drought-relief-assistance-scheme-application-forms.

Should there be a group of you interested in a common theme, for example nutrition, marketing or weaning, please give one of us a call and we can organise someone with technical expertise in the topic to support you in a meeting in your local area.

The Grazing BMP program has been charging ahead running workshops on the modules soils and grazing land management, animal welfare and animal production and people and business.

The findings of the recently completed Cash Cow are now being made available in a variety of formats. The project has derived an enormous amount of information from the 142 breeding mobs on the 72 commercial properties which participated in the study. You will find a brief tutorial on the preliminary findings at www.futurebeef.com.au.

Byrony Daniels, beef extension officer (FutureBeef), QDAFF Emerald, (07) 49 837 467.

LEFT: The Dry season managment of a beef business booklet can be downloaded free from: www.futurebeef.com.

THE NINE CENTRAL QUEENSLAND BEEF ADVISERS ARE:

- **Jo Gangemi,** Biloela (07) 4992 9178.
- **Laura Devlin,** Emerald (07) 4983 7419.
- **Byrony Daniels,** Emerald (07) 4983 7467.
- **Mick Sullivan,** Rockhampton (07) 4936 0239.
- **Ken Murphy,** Rockhampton (07) 4923 6237.
- **Matt Brown,** Rockhampton (07) 4936 0324.
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- **Ross Dodt,** Mackay (07) 4967 0734.
- **Jim Fletcher,** Mackay (07) 4967 0731.

Climate watch: When is it too late?

AS the end of the summer rainfall season rapidly approaches, a key question springs to mind; when is it too late to realistically expect a significant improvement in seasonal conditions?

The answer to this question will depend on your definition of the end of the summer rainfall season or 'brown day', your location and your approach to normal risk management.

As always, it is important to have a realistic expectation of what your 'normal' rainfall is and how it can change throughout the year.

For example, St Lawrence has a median (that is, what happens 50 per cent of the time) wet season rainfall (October to April) of 840mm.

However, the distribution of monthly rainfall within that period varies greatly. For example the median monthly rainfall at St Lawrence for February is 138mm, March is 89mm and April is 35mm.

MEDIAN RAINFALL EXAMPLES (mm)

Month	St Lawrence	Emerald
January	158	91
February	138	74
March	89	51
April	35	22

Table 1 shows the median monthly rainfall at St Lawrence and Emerald for January to April.

A similar pattern can be found throughout the Queensland. For example, Emerald (with a median wet season rainfall of 491mm) has a median monthly rainfall for February of 74mm, March of 50mm and April of 22mm.

Therefore waiting until the end of April before making management and husbandry decisions such as the setting of stocking rates for our normally drier winter's is a higher risk approach.

This approach also does not allow adequate time for pasture growth and recovery between the end of the summer rainfall season and the arrival of cooler winter temperatures leading to tropical grass dormancy.

Another way to view this is if a minimum of 50mm event within a consecutive 3 day period is considered your 'green day' (or the minimum amount required to provide an improvement is seasonal conditions), what is the likelihood of it occurring during the last few months of the summer rainfall season.

Using Emerald as the example, historically only 50pc of the time is more than 50mm recorded during March.

This drops to less than 30pc of the time for April.

Therefore, a rule of thumb could be that if the season has not improved by the end of February, appropriate management decisions such as adjusting stoking rates or early weaning need to be considered.

For more information please email david.mcrae@science.dsitia.qld.gov.au

Dave McRae, DSITIA, Toowoomba, (07) 4529 1343.

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?
Beef producer ❑ Education ❑
Agribusiness ❑ Other ❑.....

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QC1635540

Toorila operation: improving breeder performance

Producers Lachlan and Trudy Mace share their experience and strategies

LACHLAN and Trudy Mace run a breeding and finishing enterprise at Toorila, Stannage Bay targeting the EU market.

Toorilla is 10,000 ha with about half the property marine plains and the balance principally narrow leaved ironbark forest country.

The marine plain country is very productive, but because it becomes very wet and a lot goes under water in the wet season, it has to be worked in conjunction with the forest country.

Managing the cattle and grazing to make best overall use of the property is a major challenge.

The Mace's have a Brahman based breeder herd and run a rotational crossbreeding program with Brahman and Angus bulls. Angus bulls are joined to the higher Brahman content females and Brahman bulls to the lower Brahman content females.

The aim is to maintain the Brahman content necessary for the cattle to handle the environment and ticks while capturing the benefits of hybrid vigour from crossbreeding and improved carcase traits from the Angus.

To improve the performance of the breeder changes have been made to the breeder vaccination program and management strategies.

Breeder management

Heifers are joined at two years of age and up until the 2012-13 mating, heifers were joined for 12 weeks and the balance of the breeder herd for 16 weeks. Joining was commenced on 1 December.

Weaning and pregnancy testing is undertaken in May-June.

Empty cows are finished on the marine plain country and sold in the summer following culling.

Cows that are dry at branding in December-January are culled as these have lost a pregnancy or calf and are usually sent straight to slaughter.

Health management

The Maces have a vaccination program to manage the key health risks for their herd (Table 1).

Vaccinations are given when cattle are handled for key activities such as weaning and pregnancy testing or when being moved as part of the grazing management program.

Group	Vaccinations
Calves	5 in 1 vaccine at branding
Weaners	Singvac 3 year botulism vaccine. Tick fever vaccine
Joiner heifers	Two leptospirosis vaccinations prior to joining
Breeders	Retained (pregnant) females receive annual vaccinations for botulism and leptospirosis
Steers	Two Three-day sickness vaccinations in the second dry season after weaning, for protection when heavy finishing steers in their last summer. The No 2 steers were vaccinated in 2013 and will be sold in 2014.
Bulls	Annual botulism, leptospirosis vaccination, vibriois and Three-day sickness vaccinations

Lachlan and Trudy commenced vaccinating their finishing steers for Three-day sickness following heavy losses in 2009. While expensive at $16/hd the Mace's consider it a sound investment as they have not seen a loss to Three-Day sickness in the heavy steers since vaccinating.

Breeder performance

Pregnancy rates across all breeders have averaged 79 per cent for 2007-2013. However, pregnancy/calf losses from pregnancy test to branding have been disappointing. From 2008 to 2012 the losses have ranged from 8.3pc to 17.2pc and averaged 14.0pc. Losses were higher in the first calf cows group (up to 23pc).

Investigating pestivirus status of herd

Because Lachlan and Trudy had effective vaccination programs in place for leptospirosis and vibriosis (Table 1) they decided to investigate the pestivirus status of their herd.

Testing found high levels of previous exposure to pestivirus in the older breeders but there was considerable variation between years in the exposure of the joiner heifers.

For example, all 21 No 8 heifers tested in 2009 showed previous exposure wheras, none of the 23 No 9s tested in 2010 showed previous exposure.

Pestivirus vaccination program

Lachlan and Trudy decided to implement a pestivirus vaccination program in 2011 commencing with the No 0 joiner heifers being vaccinated in mid 2011 ready for joining in December 2011.

The high level of exposure in older cows meant there was no need to vaccinate these animals.

Since 2012, as well as joiner heifers, previously vaccinated females that are pregnant and retained in the breeding herd receive an annual booster vaccination. In 2014, the females to be vaccinated are No 3 joiner heifers (2 doses) and the No 2, 1 and 0 retained females (1 dose). Over the next few years the herd will reach a point where all breeders are vaccinated. The Mace's are moving to a whole herd vaccination program as it will ensure all animals are protected and they have maximum flexibility in how they structure management and mating groups.

During the wet season cattle often have to be removed from the marine plain and this restricts the number of breeder groups they can have, while maintaining the Brahman and Angus bull mating groups.

Impact of pestivirus vaccination

While the program is still in its initial stage some promising results are occurring. The pregnancy/calf loss from pregnancy test to weaning in 2013 was 8.9pc and 8.3pc in 2014.

Other breeder management changes

Major changes have been made to the mating program, breeder management and grazing management to enable Lachlan and Trudy to calve the first calf cows out as a separate group.

> The aim is to maintain the Brahman content necessary for cattle to handle the environment and ticks while capturing the benefits of hybrid vigour from crossbreeding and improved carcase traits from the Angus.

Previously the first calf cows had to be run with the main breeder group from the end of mating, due to when and how cattle could be run on the marine plain. Having the first calve cows as a separate group is enabling better management of body condition as they can be weaned sooner and supplemented better if required.

Because of the high conception rates achieved in the maiden heifers (87pc average 2008-2012), the Maces have reduced the joining time for the maiden heifers from 12 to 9 weeks so they can identify and retain the most fertile heifers.

The balance of the breeders will continue to be joined for 16 weeks.

To help cows maintain body condition, the commencement of mating has been moved back from 1 December to 15 December.

This will reduce the time cows are lactating late in the dry season before a reliable seasonal break can be expected.

Mick Sullivan
Beef extension officer
DAFF Rockhampton
07 4936 0239

Weaning timeliness crucial in dry times

Seasonal Tips – Autumn to April/May

WE'VE just been through a harsh hot summer with a late break to the season and unfortunately some still haven't had much useful rain. The timeliness of weaning is very important every year, but in dry years it is imperative.

Removing the need to produce milk for its calf in the early dry season is equivalent to giving the cow a supplement of up to 2kg of grain or 3kg of fortified molasses every day.

Timely weaning is a lot more cost effective than supplementing the breeder herd.

Weaning in April/May this year will leave your breeders in better body condition and give them a much improved chance at re-conception than if they were weaned later in the year. Some droughted producers may have already weaned and done so very early on trying to save cow condition and reduce the demand for costly supplementation.

Weaning is also a great opportunity to educate stock through the yards and teach them about mustering by tailing them through the weaner paddock.

With year round mating calves are weaned at a wide range of ages.

Calves weaned under 150 kg will need supplements of highly digestible protein and energy if pasture is insufficient.

If weaners are of various sizes, draft them according to size and feed them accordingly. Make sure your weaner feed is on farm and ready to go.

A pregnancy test during the weaning muster will not only identify empty cull cows but foetal aging at the pregnancy test will also allow the removal of cows that are going to calve out of season from the herd.

Foetal aging at pregnancy testing is the best method to convert from continuous mating to controlled mating.

Drafting the breeders into three groups (those to calve at the preferred time of year, those to calve out side the preferred time and empty breeders) will make decisions on which animals to keep easier.

In central Queensland the generally preferred calving time is October to December.

Cows that are going to calve early will be lactating for longer before the break next wet season. If possible these cows should be drafted off and kept as a separate management group this year.

We've had a late break to the season, but don't be tempted to leave the bulls in longer. This will only start the out of season calving again.

The start of the dry season means it's also time to take a good hard look at your pastures and your stock numbers.

If you haven't got the feed in front of you that you need it's time to remake your marketing plans. Making these decisions earlier will present you with more marketing opportunities, than a forced sale later on will.

If you have sold extra stock due to the seasonal conditions, talk to your accountant about Farm Management Deposits or other tax management methods.

For a copy of the MLA weaner book please contact me or find a copy online at www.mla.com.au.

Byrony Daniels
Beef Extension Officer (FutureBeef)
QDAFF Emerald
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McVeigh welcomes extra drought support package

STATE Agriculture, Fisheries and Forestry Minister John McVeigh has welcomed the Federal Government's additional $320 million drought package.

Mr McVeigh said the package, including $280 million in concessional loans at four per cent over five years, would further help Queensland's drought-affected farms and keep jobs in the bush.

"More disposable cash in farmers' pockets means they can meet their local bills in town and get rural communities and economies going again," Mr McVeigh said.

"This assistance is for here and now, there will be a long recovery time so will still need to discuss long term drought policy with the Federal Government at the right time.


Agriculture, Fisheries and Forestry Minister John McVeigh.

"The Prime Minister recognises agriculture has a great future beyond this drought."

Mr McVeigh said the loans up to $1 million would allow eligible farm businesses to refinance existing debt at a lower interest rate and would cover up to 50 per cent of eligible debt.

"I'm also very pleased the Federal Government has brought forward the new Farm Household Allowance, starting March 3, which will put food on the table and help pay the bills," he said.

"The new payment comes with a more generous asset test ($2.5m) than the previous allowance ($1.5m), ensuring more farmers and their families can receive support in these difficult times.

"This will also include farmers automatically receiving a Health Care Card."

Mr McVeigh said other measures included an extra $12 million for water infrastructure, and for Queensland this would mean an additional $6 million to the Queensland Government's Drought Relief Assistance Scheme.

"Their extra $10.7 million for Mental Health programs will help support people suffering from depression, and the $10 million for control of feral animals, particularly wild dogs will be very welcome in Queensland."

Mr McVeigh said 70 per cent of Queensland was drought-declared, and while there'd been some good rain in the north west and central west, it had been patchy and many areas had missed out.

"This funding will add to the Newman Government's efforts, which include last month's announcement of an extra $20 million in support.

"This is in addition to the $11.2 million we announced in May last year, taking our total state commitment to more than $31 million.

"This is a record state contribution and $5 million more than was provided in 2007-2008 during the so-called millennium drought."

Rural drought aid available

Services offering assistance for business, personal and family

SEVENTY per cent of Queensland is now drought-declared. A full list of drought declared shires is available at www.longpaddock.qld.gov.au.

The Queensland Government announced a new drought assistance package in January 2014 that includes an expansion of the existing measures announced in May last year and a range of new assistance to help farm families, farm businesses and farm communities affected by drought.

FINANCIAL ASSISTANCE

Drought Assistance Package: http://www.daff.qld.gov.au/environment/drought/assistance/new-drought-assistance-package 13 25 23

Assistance is available to producers with properties in drought declared areas or with an individually droughted property (IDP) declaration, including:

- a freeze on rural land rents in the 2013-14 financial year
- transport concessions for drought-affected primary producers
- mental health and community support workshops to help those who may be finding it difficult to cope.

Drought Relief Assistance Scheme (DRAS): This scheme provides up to $20,000 (up to $30,000 with an approved property drought management plan) each financial year to help graziers transport fodder and water during drought, and after the drought has ended, freight subsidies for returning livestock from agistment or restocking after the drought.

DRAS now also includes the emergency water infrastructure rebate (up to 75 per cent) on water infrastructure purchased for emergency animal welfare needs. A DAFF officer needs to approve a water availability statement completed by the claimant, which ensures eligibility to apply for the rebate on the basis of emergency animal welfare need. Examples of emergency water infrastructure rebates include sinking a bore on properties where surface water has run out, or piping water to a trough in a grassed paddock that is too far from the nearest watering point for livestock to walk. All forms for claiming water and freight rebates are available at www.daff.qld.gov.au/environment/drought or at local DAFF offices 13 25 23.

Income support: Call the Drought and Farmer Assistance Hotline 13 23 16, visit the Federal Department of Human Services. Income support, Transitional Farm Family Payment, assistance for isolated children information is available at www.humanservices.gov.au.

Rural Financial Counselling Service: For free rural financial counselling visit Central/Southern region www.rfcsqcsr.com.au, South-west region www.rfcsqsw.org.au or call 1800 686 175.

QRAA: For information on farm finance concessional loans or productivity loans call 1800 623 946.

Land rent relief: Rural land rent increases will be frozen for the 2013/14 financial year for those farm businesses in drought declared areas. Visit www.nrm.gov.au or call 13 74 68.

Transport concession and assistance for road trains: Assistance for 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 livestock or machined baled hay. Visit www.tmr.qld.gov.au or call 13 74 68.

School Transport Assistance Scheme: 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. Visit www.tmr.qld.gov.au or call 13 74 68.

Farm Management Deposits: Visit the Department of Agriculture www.daff.gov.au/agriculture-food/drought.

Electricity rebates or concessions: Visit www.dews.qld.gov.au or call 13 43 87.

Ergon Energy: For drought relief rebates or concessions visit www.ergon.com.au or call 13 10 46.

Legal Aid Queensland: Rural legal services: For severe, debt-related problems, lender disputes, or financial hardship with farming businesses, visit www.legalaid.qld.gov.au or call 1300 65 11 88.

The Telstra Bill Assistance Program: Short term emergency relief to residential customers if you are unable to pay your Telstra fixed home telephone bill. Administered by national welfare organisations including Salvation Army, Smith Family Anglicare and St Vincent de Paul. Queensland-Salvation Army (07) 3222 6666; New South Wales-Smith Family (02) 9085 7222.

SOCIAL AND COMMUNITY SERVICES

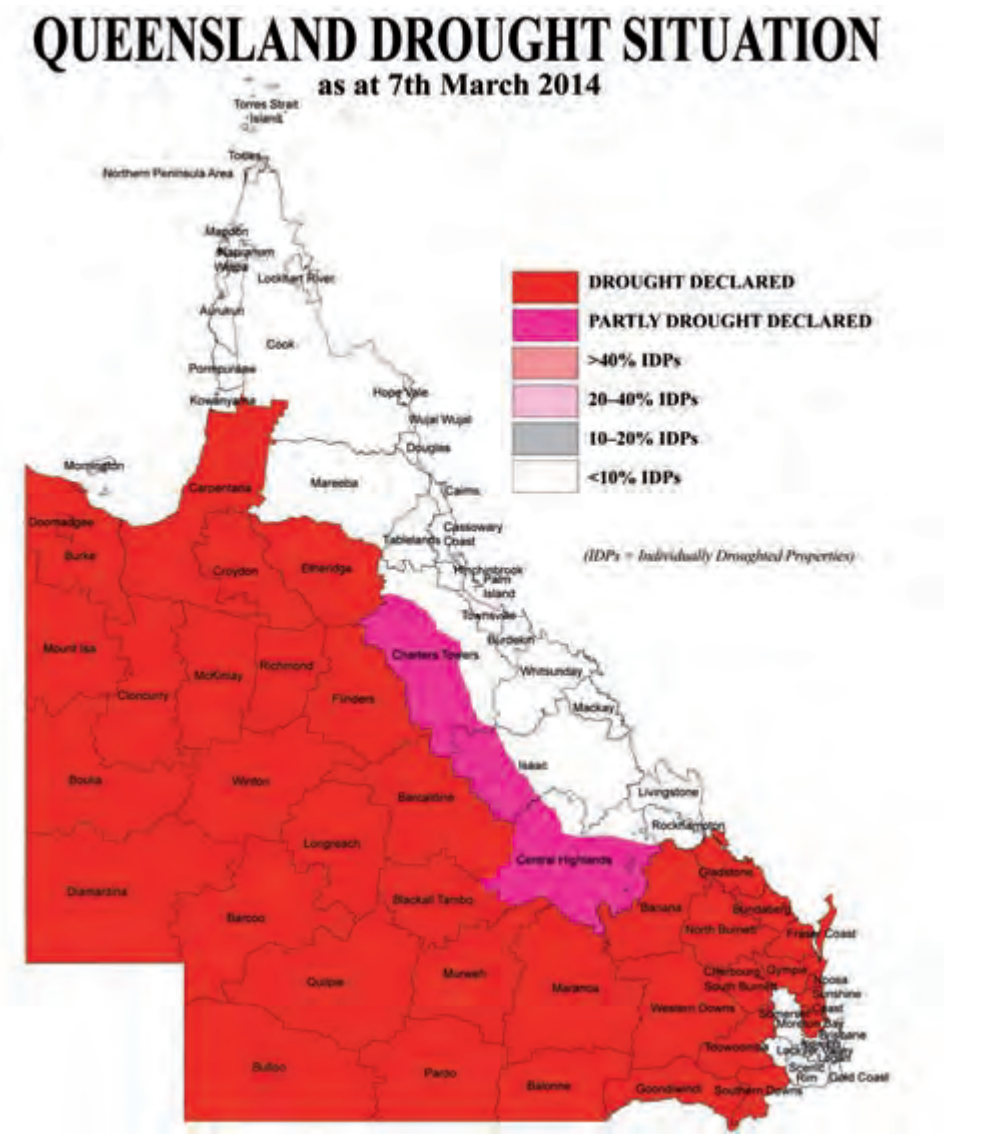
Lifeline: 13 11 14 Crisis Counselling Line 24-hours for individuals and families.

Salvation Army: 1300 36 36 22 telephone counselling 24 hours a day, 365 days.

BeyondBlue: 1300 224 636 help with personal issues, depression or anxiety.

Relationships Australia: 1300 364 277 confidential counselling and family support services.

Kids Helpline: 1800 55 1800 A national 24-hour telephone counselling service for children and young people (ages 5 to 18).



Women's Infolink: 1800 177 577 Free, confidential information and referral service Queensland-wide to support women.

Mensline Australia: 1300 789 978 help men with relationship issues.

Queensland Health: 13 43 25 84 provides 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 provide community members and human service workers with the skills to identify, support and protect people that may not be coping during difficult times.

Frontier Services: 1300 787 247 provides health, family, community services and pastoral support in remote Australia. 'Outback Links' 1300 731 349 places volunteers with rural and remote families for short periods.

The Bush Connection (07) 4639 7897 free confidential support and referral. Personal support, identify options, advocacy, in crisis situations.

Other assistance: Local doctors, clergy, hospitals or community health centres can also help.

CLIMATE AND MANAGEMENT INFORMATION

The current Queensland drought situation report, map and seasonal outlooks are at www.longpaddock.qld.gov.au/queenslanddroughtmonitor.

DAFF 13 25 23 and **FutureBeef** have resources on feeding and management of livestock during drought, strategies to help cope with stress and software packages to evaluate options and assist in decision making. Email callweb@daff.qld.gov.au or visit www.daff.qld.gov.au/environment/drought, www.futurebeef.com.au/topics/nutrition. A booklet "Dry season management of a beef business" can be downloaded free from www.futurebeef.com.

Rural Financial Counselling

Confidential assistance and information

WITH the majority of Queensland in drought conditions, many primary producers are contacting the Rural Financial Counselling Service to seek information on various assistance programs, the application processes, and to discuss other business and financial queries in relation to their enterprise.

The RFCS Queensland Central South Region provides services that are confidential, impartial and free of charge to rural producers and small rural businesses.

Drought Relief Assistance Scheme

The Queensland Drought Relief Assistance Scheme (DRAS) is available for eligible primary producers located within a drought declared area.

The scheme has been set up by the Queensland government to help primary producers in the grazing industries manage their livestock resource during drought and to help in the restoration of that resource after drought.

DRAS provides freight subsidies on the transport of fodder and water during the drought, the transport of animals returning from agistment, and animals purchased for restocking after the drought.

The DRAS scheme also provides a rebate on Emergency Water Infrastructure (EWI), which includes assistance for the purchase, supply and installation cost of water infrastructure purchased for emergency animal welfare need.

A completed Water Availability Statement to confirm water need must be approved by the Department of Agriculture, Fisheries and Forestry prior to applying for the EWI. Original tax invoices must accompany any DRAS application.

The Australian Government are now providing an additional 25 per cent rebate of the total cost of emergency water infrastructure.

The total rebate the applicant may now receive is now 75 per cent of the total cost of the water infrastructure only.

If the producer has no Drought Management Plan in place, the maximum amount of rebate/subsidy an applicant can receive under all of the DRAS schemes (incl freight and EWI) is $20,000.

With a Drought Management Plan in place, the maximum amount the applicant can receive is $30,000.

The extra 25 per cent only applies to EWI and is retrospective and will be automatically paid to those who have already received the 50 per cent Queensland Government rebate for EWI.

For any inquiries or assistance with a Drought Management Plan or an application for assistance a rural financial counsellor may be able to assist.

INCOME SUPPORT – Interim Farm Household Allowance

The Australian Government has announced a new Federal Government Program known as the Interim Farm Household Allowance (IFHA). Primary producers have been able lodge an application for this assistance from March 1.

IFHA is provided to help farm families experiencing financial hardship to meet basis household needs and improve long term financial security.

Claims for Interim Farm Household Allowance will be accepted until June 30, 2014.

Eligibility basics

- You must be a farmer.
- Contribute a significant part of your labour and capital to the farm enterprise based on specific criteria.
- Meet with a Rural Financial Counsellor.
- Meet an income and assets test.

Producers who currently receive Transitional Farm Family Payment will be automatically transferred over to Interim Farm Household Allowance.

Former primary producers who have previously received 12 months' support through Transitional Farm Family Payment or Transitional Income Support can submit a claim for Interim Farm Household Allowance.

RFCS can assist producers with further information on government assistance programs.

Location	Rural Counsellor	Financial	Contact Number
Biloela	John Lacey		0448 124 016
Emerald	Emma Cook		07 4987 5839
Mackay	Richard Lewis		0499 144 522
Longreach	Rachel Bock		0427 583 096

The contact numbers for the Rural Financial Counsellors are detailed above

The RFCS Program is supported by the Australian Government and Queensland Government.

NEED TO KNOW MORE?

More information on IFHA can be found at http://www.humanservices.gov.au/customer/services/centrelink/interim-farm-household-allowance, telephoning Department of Human Services on 132316 or by contacting your rural financial counsellor.

Interim Farm Household Allowance now available

PRODUCERS in financial need, whether they are drought-affected or not, have been urged to contact Centrelink on 13 23 16 regarding the Federal Government's Interim Farm Household Allowance package.

Agriculture, Fisheries and Forestry Minister John McVeigh said the money is available and supports the Queensland Government's election promise to grow agriculture as one of the four pillars of the economy.

"The Federal Government has brought forward the new Interim Farm Household Allowance to assist our Queensland producers affected by the drought," Mr McVeigh said.

"The allowance will help with daily living expenses like putting food on the table and paying their electricity bills. Agriculture is a key pillar of the Queensland economy and the Federal Government also recognises agriculture is a significant sector with a great future.

"The Interim Farm Household Allowance will be paid at a fortnightly rate equivalent to the Newstart Allowance. The new scheme replaces the old Transitional Farm Family Payment with the net asset test raised to $2.55 million.

"I am in discussions with the Federal Government about the other drought assistant measures, such as the concessional loans, pest control and mental health support measures, to ensure this assistance available as soon as possible."

Producers can contact Centrelink on 13 23 16 (Monday to Friday, 8am to 8pm) for more information and application forms or visit www.humanservices.gov.au/customer/services/centrelink/interim-farm-household-allowance

The Interim Farm Household Allowance will be available until the permanent Farm Household Allowance is implemented on July 1, 2014. Existing Transitional Farm Family Payment recipients will be automatically transferred to Interim Farm Household Allowance with no break in payments.

- For more information on the Newman Government's drought relief assistance scheme call 13 25 23 or visit www.qraa.qld.gov.au

Countering leucaena toxicity: new research to assist Queensland's grazing industry

GRAZIERS who rely on leucaena as a feed source for their herd will welcome new Queensland Government research exploring the shelf-life of the live bacterial inoculum that blocks the plant's toxicity.

The main toxin is mimosine, which is a non–protein amino acid of varying concentrations in the leucaena plant and occurring at highest concentrations in new leaf growth.

Department of Agriculture, Fisheries and Forestry staff from the Rumen Ecology Unit, located at the EcoSciences Precinct in Brisbane, have begun this research as part of a Meat & Livestock Australia-funded project.

DAFF has supplied graziers with the means to counter the toxic effects of the plant, in the form of a rumen bacterial inoculation, for the past 17 years.

As part of the new research, the bacterial composition of the inoculum is being determined and historical samples are being used to investigate whether the inoculum has changed significantly over the past 17 years of production.

The inoculum contains *Synergistes jonesii*, a rumen bacterium that breaks down DHP, a toxic by-product of the ruminal breakdown of mimosine.

Rumen contents from steers fed leucaena were initially used to start the first fermentation to produce the inoculum, while current batches are produced by sub-culturing from older batches.

The inoculum is mixed with cryoprotectant (glycerol) and stored frozen until it is shipped to producers. The bacteria in the inoculum are anaerobic, so careful handling is required to prevent killing the inoculum through exposure to oxygen.

This article was run in The Leucaena Network News February 2014. Visit the Leucaena Network website for more information about leucaena www.leucaena.net.au

Foraging for profitable beef production

Fitzroy basin research into high output forages

Cattle grazing lablab at a High Output Forage Project trial site near Baralaba.

High Output Forages Technical Officer Kylie Hopkins collecting real data from producer co-operator sites to assess forage profitability in the Fitzroy Basin.

KEY findings from a range of forage systems will be presented at field days across the Fitzroy basin district in April.

High quality annual and perennial forages play an integral part in beef backgrounding and finishing operations in the Fitzroy basin area.

Forages such as oats, forage sorghum, lablab, leucaena, butterfly pea, and perennial pastures are all used within beef production enterprises, but which ones perform the best?

The High Output Forages project worked with 13 beef producers between Taroom and Capella for over 3 years collecting forage, animal and economic information from 25 paddock sites.

The project, co-funded by the Department of Agriculture, Fisheries and Forestry and Meat & Livestock Australia, benchmarked the commercial performance of a range of forages to identify ways to improve their profitability.

Each site provided information on soil nutrients and moisture, forage yield and quality, cattle class, liveweight gain, diet selection, stocking rate, grazing management, input costs, sale data and gross margin economics.

The analysis of forage, animal and economic performance of the sites is almost finished, with some interesting results emerging:

- It is important to consider economic, forage and livestock performance when comparing forage options as the forage ranking may differ for these criteria;
- Forage profitability depends on a range of factors including plant biomass and quality, class of cattle, and grazing management (stocking rate, timing and length of grazing), as well as seasonal and market factors;
- Under current market and cost conditions, perennial legume-grass pastures may have an economic advantage over annual forages;
- The effect of annual forages on farm profitability can be marginal and the increase in business risk significant, therefore their use needs to be considered carefully;
- Not managing sown forages according to 'best-practice principles' may result in less than optimal productivity and profitability.

Along with data collection from these sites, five enterprises were selected for whole-farm economic case studies, to assess the importance of forages in the profitability of their wholefarm operation.

A Forage Decision Support Tool is being prepared that will help in deciding how to best use land for forage production.

The Forage Cost Calculator enables on-farm costs to be included so that the economics of different forages can be analysed using current costs and cattle prices.

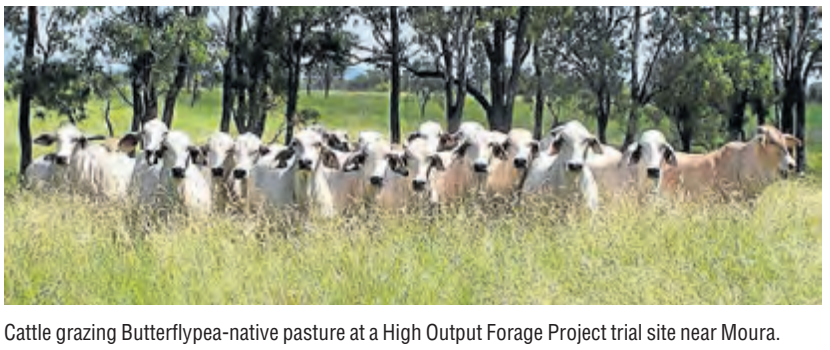
An updated Best practice guide to forage use for growing and finishing beef cattle will be available mid-year, which will be an invaluable guide to growing forages in the Fitzroy River catchment.

Maree Bowen, DAFF, Rockhampton
Phone: (07) 4936 0291
Email: maree.bowen@daff.qld.gov.au

FIELD DAYS CONTACTS

Contact DAFF staff to attend a free field day in your area:

- Capella, April 1 – Byrony Daniels (07) 4983 7467.
- Rolleston, April 2, – Kylie Hopkins (07) 4923 6215.
- Wandoan, April 3 –Tim Emery (07) 4622 9903.



Cattle grazing Butterflypea-native pasture at a High Output Forage Project trial site near Moura.

The Clermont Cattlemen's Challenge – an update

All the statistics on the 2013/14 event

THE 2013/14 Clermont Cattlemen' s Challenge is well underway. A highlight of the Clermont Show, the challenge has seven components over the 12-month period between shows. The components include weaner judging, grass grow-out phase (nine months), feedlot phase (100 days), carcase competition, grainfed steer judging, overall weight gain and a taste test. The challenge provides an excellent showcase for the district's beef industry. This article provides an update on activities and cattle performance up to feedlot entry on February 4, 2014.

CLERMONT CATTLEMEN'S CHALLENGE ACTIVITIES

This year's challenge has 17 local exhibitors with each entering a pen of five weaner steers.

The steers were delivered to the Clermont Showgrounds on May 26, 2013, the day preceding the Clermont Show.

WEANER JUDGING

After an overnight wet curfew the steers were weighed and judged as stores most suitable for growing out for the 100-day grainfed market.

Average weaner weight across the 85 steers was 294 kg (target 290-320kg). The heaviest steer was 355kg and the lightest 230kg. Greg and Alicia Magee of St Omer gained the maximum points in the weaner judging (5 points) followed by Laurel Hills (4 points), Trelawney (3 points), Parnu (2 points) and Clydevale (1 point).

GRASS PHASE INDUCTION

On May 27, 2013, the steers were transported to Hugh and Sherri Philp's property, Wyena, which is located approximately 120km north of Clermont.

They received health treatments (Botulism, 5-in-1, 3-day and Dectomax) and a Compudose 400 implant. The cattle grazed as one mob in a 405ha (1,000ac) pulled brigalow country paddock.

Buffel grass was the predominant pasture with some native grasses and legumes.

The paddock had been burnt in October 2012 and spelled until the arrival of the trial steers. Like most areas of central Queensland very little rain was received for 2012/13 wet season until late January 2013. Rainfall for January to April 2013 was 320.5mm.

	Liveweight gain (kg)			Avg daily liveweight gain (kg/hd/day)		
	27/5/13[a]-2/10/13[b]	3/10/13-7/2/14[c]	27/5/13-7/2/14	27/5/13-2/10/13	3/10/13-7/2/14	27/5/13-7/2/14
Mob average	94	51	145	0.73	0.40	0.57
Highest exhibitors group	119	79	184	0.93	0.62	0.72
Lowest exhibitors group	65	29	98	0.50	0.23	0.38

[a] Weight Clermont Show after overnight wet curfew

[b] Weight Wyena after overnight wet curfew

[c] Weight after 5 days at Paringa Feedlot on hay and grain ration, weighed after 4 hour curfew

Table 1: Liveweight gain summary grass phase Clermont Cattlemen's Challenge 2013/14.

GRASS PHASE

Wyena received 13mm of rain, 14 days before the steers arrived (13/5/13). Rainfall during the grass phase was 12mm 1/6/13, 51mm 13/11/13, 23mm 1/12/13 and 30mm 1/2/14, the day before the steers left.

FIELD DAY – WYENA

A field day and barbecue was held at Wyena on October 2, 2013 to inspect the cattle. Approximately 30 local families attended the event.

Guest speakers included Mark Connors, Zoetis, and the Department of Agriculture, Fisheries and Forestry's Jim Fletcher, who discussed 'Reproduction and genetics in northern Australia' and 'Northern genetics and fertility research findings', respectively.

A game of cricket was scheduled for the afternoon but as the mercury passed 35°C, play was abandoned and early drinks taken.

FEEDLOT INDUCTION

On February 2, 2014, after 251 days on grass, the steers were transported to Paringa Feedlot, Capella. Due to a lack of pen space, they were fed hay and a grain ration in a holding yard for five days before induction.

On February 7, they were weighed and inducted. Average steer weight was 439kg, with the mob ranging from 345kg to 532kg.

The steers will remain on grain for 100 days.

CATTLE PERFORMANCE

Over the 251 days from induction at the Clermont Show (27/5/13) to induction at Paringa Feedlot (7/2/14), the average liveweight gain of the steers was 145kg (0.57kg/hd/day) (Table 1).

Steers entered by Jeff and Sarah Cook, Eton Vale, had the highest weight gain on grass with a total gain of 184kg (0.72 kg/hd/day).

These were followed by Tayglen (175kg, 0.68kg/hd/day) and Merrigang (173kg, 0.68kg/hd/day). Highest individual steer gain was 207kg (0.81kg/day) and the lowest 89kg (0.35kg/day).

No points are allocated for weight gain over the grass phase.

FEED AVAILABILITY

Feed availability is arguably the most important factor affecting nutrient intake and beef cattle performance.

A Stocktake assessment of the 405ha paddock in June 2013, at the start of the grass phase, estimated a pasture yield of 4,000kg/ha.

Allowing 30 per cent (1,200kg/ha) for unpalatable and wasted feed, and a desired residual of 2,000kg/ha; available pasture was assessed as 800kg/ha.

Using the starting weight of 294kg, estimated final weight of 454kg and average dry matter intake of 2.2 per cent of liveweight, feed requirement was estimated to be 8.3kg/hd/day and a total of 2,083kg/hd for the 251 days of the grass phase.

With 3,811kg/hd of available pasture in the paddock, the steers had ample feed.

DIET QUALITY

Faecal NIRS testing was used to monitor diet quality during the grass phase.

Testing involves collecting fresh dung samples from 10-15 pats or animals and sending them to the Symbio Alliance laboratory in Brisbane for analysis. Important dietary attributes monitored were diet crude protein (CP), dry matter digestibility (DMD), and phosphorous (P).

The quality of the diet remained high during the grass phase (Figure 1).

Dietary DMD ranged from 56 per cent to 58pc for the majority of the grass phase which is well above the 50pc required by dry cattle for maintenance.

Dietary CP remained between 8.7 and 9.6 per cent, well above the maintenance level for dry cattle of 5 per cent.

The ratio of faecal P to metabolisable energy in the diet is considered a good indicator of whether the diet provides sufficient P for dry stock.

Testing in June 2013 showed 500mg P/MJ ME, which is above the threshold for dry cattle of 340mg P/MJ ME.

● To next page

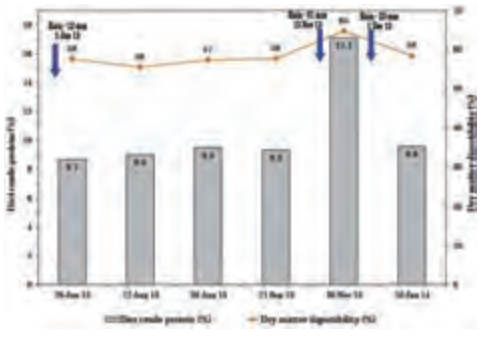


Figure 1: Faecal NIRS diet quality data grass phase Clermont Cattlemen's Challenge 2013/14.

Understanding, managing liveweight loss

Why regular weighing is a must

IN any beef cattle operation the aim is to maximise the kilograms of beef turned off per year. In order to know how many kilograms are being produced it must be measured, that is, regular weights recorded. It is important to understand what can influence these measurements and consequently the accuracy of data collected.

The liveweight of an animal includes the weight of body tissues and the contents of the digestive tract (gut fill) and bladder. Changes in gut fill have the greatest affect on liveweight, as gut fill can account for 12 to 22 per cent of an animal's liveweight.

Factors which determine gut fill are water intake, feed quantity and quality, the time since the last intake of feed or water and the rate of passage of gut contents.

Pasture type and quality and consequently season affect gut fill. Gut fill increases as feed quality declines due to slower passage of gut contents.

Grassfed cattle have a higher percentage of their liveweight as gut fill than grainfed cattle and lose liveweight faster.

If feed or water is not supplied, cattle will lose weight rapidly in the first 12 hours. Liveweight loss then slows with time.

Table 1 highlights the average liveweight loss over a 72-hour period when cattle are not on feed or water.

Hours without feed and water	Liveweight loss (%)	Estimated liveweight loss (kg)		
		200kg	400kg	600kg
6	2.5	5	10	15
12	4	8	16	24
24	6	12	24	36
48	10	20	40	60
72	12	24	48	72

Average liveweight loss up to 72 hours without feed and water for cattle of various liveweights. (WYTHES 2006)

Each individual animal will recover differently depending on how they were affected and how much weight loss they endured. Even within a mob treated the same there will be variation between animals in weight loss and recovery.

The recovery period to regain lost weight can be anywhere from three to 21 days depending on the per cent liveweight lost and the conditions the animal tolerated.

Weight loss example

The transport of steers in the Clermont Cattlemen's Challenge is a good example of how liveweight can be affected in a short period of time. After the 251 days of the grass phase of the challenge, the average weight of the No.3 steers after mustering (full weight) and immediately before trucking was 474kg.

The cattle were transported about 200km to the feedlot, where they were fed hay and a starter ration for five days before induction. The cattle were off feed and water for about four hours before induction and weighing.

The average weight of the cattle at induction was 439kg, meaning they lost an average of 35kg, or 7.4 per cent of their full weight from the paddock. Handling, transport and change in diet would have contributed to the weight loss.

Weighing procedures

Consistency in weighing procedures is crucial to reducing errors and gaining a better picture of animal performance.

If curfews/fasting periods are used, the period must be standardised, whether animals are given water (wet curfew) or not (dry curfew).

Where full liveweights are used, the time of day when animals are weighed should be standardised.

If cattle have had long periods off feed and water, as often happens with cattle transported long distances, it is important to allow cattle time on feed and water to recover before an initial weight is taken.

If empty weights are compared with full weights there will be considerable inaccuracies in the average daily gains calculated.

Minimising weight loss

Recommendations to help minimise liveweight loss when buying or selling cattle:

- Avoid unnecessary delays between mustering and selling – generally time is more important than the distance travelled.
- Provide rest periods during and after transit.
- Provide water and hay during rest periods.

Laura Devlin
Beef Extension (FutureBeef)
QDAFF Emerald
(07) 4983 7419

Clermont Cattlemen's Challenge: All the details on the 2013/14 event

From previous page

Factors contributing to the high diet quality during the grass phase were:

- The paddock and pasture is in excellent condition with a dense buffel pasture.
- Excellent January-April 2013 rain.
- Burning the previous season would have removed old feed and produced a short term increase in soil nitrogen availability, resulting in fresh growth and increased diet quality.
- Spelling over the 2012/13 summer would have encouraged the establishment and growth of perennial grasses, forbs and legumes.
- Light stocking rates (Table 2) allowing animals to select a high-quality diet.

WORM TESTS

A faecal egg count test was used to assess the worm levels in the steers.

Faecal samples were collected from 16 fresh dung pats on October 2, 2013, for testing. No worm eggs were found. The lack of worms would be due to the animals being treated at the Wyena induction and going into a spelled paddock.

Animals with a good quality diet, such as these had, are better able to resist parasites.

Lauren Williams
FutureBeef Team, Mackay
(07) 4967 0732

Laura Devlin
FutureBeef Team, Emerald
(07) 4983 7419

> Burning the previous season would have removed old feed and produced a short term increase in soil nitrogen availability, resulting in fresh growth and increased diet quality.

Weigh date	27/5/13	2/10/13	7/2/14
Days in paddock	0	128	251
No of head	85	85	85
Average liveweight (kg)	294	388	439
Adult equivalents/hd	0.65	0.85	0.96
Total Adult equivalents	55	72	82
Hectares/hd	4.8	4.8	4.8
Hectares/AE	7.4	5.6	4.9
Total Stock days		8,158	17,184

Table 2: Stocking rate summary grass phase Clermont Cattlemen's Challenge 2013/14.

FURTHER INFORMATION

For further information, please contact the chief steward David Moller, Trelawney, Clermont, on (07) 4983 5318 or email trelawneystn@bigpond.com or Cattlemen's Challenge secretary, Natalie Finger, Hillview, Clermont, on (07) 4983 3338 or email snfinger@bigpond.com.

IMPORTANT UPCOMING DATES

May 16, 2014 – *Field day at Paringa Feedlot. Inspection of cattle, final cattle weighing, guest speakers, exhibitors to select steers for the carcass competition component, plus more!*

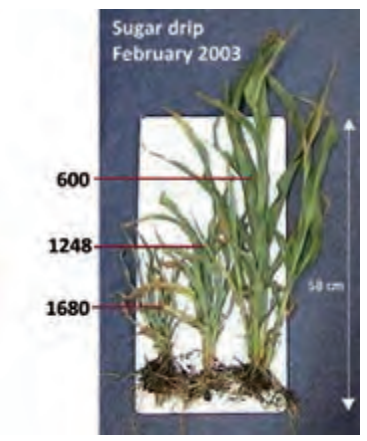
May 26, 2014 – *Clermont Show Cattle Judging. Pen of 100 day grain fed steers class, pen of steers with the highest weight gain. Weaner judging for 2014/15 steers.*

May 27, 2014 – *Clermont Show Taste Test Competition. Tasting of cube rolls from the carcass competition steers and judging on juiciness, flavour, tenderness and overall liking.*

May 27, 2014 – *Clermont Show Beef Dinner. Results are announced, prizes presented and the winning exhibitor crowned Cattleking.*

These are all open events. Please come along and join in. If you want to try your hand next year and enter in the 2014/2015 challenge please contact either David or Natalie for further information.

Spare a thought for prussic poisoning



Levels of prussic acid (dry matter basis) at different stages of plant growth.

WHILE the number of stock deaths due to prussic or nitrate poisoning is small compared to the number of stock grazing sorghums, it still deserves some consideration. Problems increase with the level of prussic acid or nitrate in the plant and the speed at which animals consume the forage. Particular care should be taken when feeding hay, as high levels can persist in hay and it can be consumed quickly, especially by hungry stock.

PRUSSIC ACID POISONING

All sorghums, including Johnson grass, can cause prussic acid poisoning by releasing the toxic compound hydrogen cyanide (HCN) when the animal consumes leaf material. Grain sorghums, sweet sorghums and perennial forage sorghums can contain the highest concentrations of HCN. Sorghums x Sudan grass hybrids have intermediate amounts, and Sudan grass the least.

Cattle are most commonly affected, but goats, sheep and horses have also been poisoned. Ruminants are more susceptible because cud chewing and rumen bacteria both contribute to cyanide release. Monogastric animals, such as horses and pigs, are less susceptible than ruminants because the enzyme responsible for hydrolysing HCN from cyanogenic glycoside is destroyed in stomach acid. Prussic acid levels are highest in:

- young plants
- early regrowth
- plants stressed from lack of moisture, cold weather, or attack by grasshoppers or other insects
- plants grown in high nitrogen and low phosphorus soil.

Effect on animals	ppm HCN (dry matter basis)
Generally safe	0–500
Potentially toxic, should not be the only feed source	500–1,000
Dangerous to cattle and usually will cause death	1,000 and above

Level of prussic acid in forage (dry matter basis) and potential effect on cattle.

To minimise risk:

- wait until the crop or regrowth is 80cm high (at least 50cm for Sudan grass) before grazing
- do not put hungry cattle onto a suspect crop and introduce only a few animals at first
- watch stock continuously for the first hour and then intermittently over the next few days
- avoid grazing troublesome plants after a light frost or after rain has ended a summer drought. Wait at least a week after a killing frost before grazing
- ensure adequate phosphorus nutrition of the crop
- consider providing animals with a sulphur supplement – for example, free choice salt with 5-12pc added sulphur (sulphur is used to detoxify prussic acid)
- analyse suspect forage samples before feeding.

Vaccination of cattle for pulpy kidney with 5-in-1 is also recommended for stock placed on lush forage crops.

SYMPTOMS OF ACUTE POISONING

The clinical signs are seldom seen because most HCN-poisoned animals die once the toxic agent gets into the blood stream, usually 15 to 20 minutes after animals consume the forage. Cyanide acts by preventing the release of oxygen in the blood and the animal suffocates. The blood remains bright red. This contrasts with nitrate poisoning where blood goes chocolate brown. Symptoms include:

- rapid heavy breathing
- frothing at the mouth
- muscular twitching/convulsions
- staggering and severe difficulty in breathing
- coma.

HCN LEVELS IN HAY, SILAGE

Although some reduction in HCN potential occurs during hay making, it does not necessarily render the sorghum safe for livestock. Do not make hay from sorghum crops which are considered unsafe to graze. If suspect hay must be used, get it analysed first and either test feed it or blend with safer forage.

Sorghum silage that has been stored for several months is much safer than hay, as the acid fermentation process normally releases any HCN present. If possible, analyse suspect forage, hays or silage before feeding.

Consult testing laboratories for information on representative sampling, labelling, handling and analysis.

NITRATE POISONING

Nitrate can accumulate in many crops, pasture and weed plants such as sorghum, millet, pigweed, variegated thistle, capeweed, wheat, oats, barley, maize, rape, soybean and linseed. Forage sorghum, grain sorghum, Sudan grass and pearl millet are notorious nitrate accumulators.

Poisoning is most likely to be a problem with hungry stock (rapid intake), stressed stock, and under conditions that promote nitrate build-up in plants. Although all livestock are susceptible to nitrate toxicity, cattle and horses are affected most often. Sheep and swine generally do not eat enough high-nitrate forage to cause problems. Most soil nitrogen absorbed by plant roots is in nitrate form. Normally, nitrate in a plant is rapidly converted into protein given adequate sunlight, water, nutrients and temperature. Plants accumulate nitrate when soil nitrate is high, but conditions are not suitable for normal growth that allows the nitrate to convert to protein. This can occur during cloudy weather, cold weather, when plants are wilted, after herbicide application, or with combinations of these factors. High levels can occur when wet, overcast days follow a severe drought.

PLANT FACTORS

Nitrates normally accumulate in stems with highest levels in the lower one-third of the plant stalk. It is generally highest in young plant growth and decreases with maturity, though sorghums and Sudan grasses are exceptions as concentrations usually stay high in mature plants. If plants are stressed at any stage of growth, they can accumulate nitrate.

More information: www.daff.qld.gov.au/animal–industries/animal–health–and–diseases/protect–your–animals/poisonings–of–livestock/cyanide–and–nitrate–poisoning

Cattle tick life cycle – saving time, money and effort

WITH the cost of chemicals and labour and fluctuating cattle prices, it makes sense to understand the cattle tick and its life cycle to get the best possible treatment results.

The cattle tick (*Rhipicephalus microplus*) life cycle is complex with two stages: the parasitic stage in which the tick feeds on the host animal, and the non-parasitic stage when the tick is on the ground.

PARASITIC STAGE OF THE TICK LIFE CYCLE

This stage begins when the six-legged 'seed tick' (larvae) attaches to the host. The larvae feed for six to nine days, then moult and become nymphs with eight legs. Nymphs feed for six to eight days, moult and develop into adult ticks. Moulting nymphs are less susceptible to acaricides than larvae or adult ticks.

In the adult stage, male ticks are more active than females. The male tick travels around the host for up to two months mating with females before dying and dropping off. The female tick feeds for seven to 10 days, engorging rapidly in the last 24 hours on the host. It then drops to the ground to lay about 3000 eggs before dying.

NON-PARASITIC STAGE OF THE TICK LIFE CYCLE

This 'on-ground' stage of the tick life cycle begins when the fully engorged female lays her eggs. The duration varies depending on environmental conditions.

Under optimal conditions of high humidity and temperature (summer) eggs can hatch in three to four weeks, while eggs produced during late autumn may not hatch until the following spring.

Hatched larvae climb to the top of grass where they can attach themselves to passing hosts. Temperature and humidity affect the length of time larvae can stay alive without attaching to a host.

Their life span ranges from two or three weeks in hot, dry seasons to five or six months over some winters.

MANAGEMENT IMPLICATIONS

A strategic program for susceptible cattle covering a period of 18 weeks will normally control cattle ticks from dropping off and laying eggs.

If this is started at the correct time during the year – for example, at the time of the spring rise in October (south-east Queensland) – you can avoid unnecessary treatments and save thousands of dollars on chemical, mustering and labour.

You can also use your understanding of the tick life cycle to run a pasture-spelling program to reduce the number of ticks on the ground.

The desired duration of pasture spelling varies from four to five months in summer to seven or eight months over winter.

Being aware of, and able to identify, the various life cycle stages can help you avoid wasting resources, and target your treatments and pasture management to the most susceptible stages in the tick's life cycle.

Contact your local Biosecurity officer on 13 25 23 for more information about cattle tick eradication or control strategies for your area and situation.

Doug McNaught, DAFF, Oxley. Phone: (07) 3310 2828. Email: douglas.mcnaught@daff.qld.gov.au
Peter Mowett, DAFF, Warwick. Phone: (07) 4660 3673. Email: peter.mowett@daff.qld.gov.au

Doing better business

Fitzoy Basin graziers, grain growers unite

FITZROY Basin graziers and grain growers have united to build their business know-how at a series of workshops held across central Queensland recently.

More than 41 CQ enterprises were represented at the four People and Business workshops held in early February at Middlemount, Clermont, Springsure and Arcadia Valley.

As Department of Agriculture, Fisheries and Forestry extension officer Matt Brown explained, the workshops are part of the promotion of best management practice through the Grazing BMP and Grains BMP programs.

"Modules covering subjects from the paddock to the office are offered to enterprises that want to ensure they are achieving industry benchmarks for best management practice," Mr Brown said.

"These recent workshops covered more of the office-based topics, ranging from workplace legislation, risk management, employee inductions and injury prevention in the workplace."

Special guest speakers included representatives from Workplace Health and Safety Queensland and WorkCover Queensland.

The workshops were well received by industry attendees, with one Arcadia Valley grazier praising the information as timely and relevant: "The BMP module was interesting and easy to follow. Workplace Health and Safety was a bit challenging but was necessary to cover".

Mr Brown said for enterprises who missed out on the opportunity, more BMP workshops could be scheduled. For more information contact AgForce Queensland Grazing BMP officer Michael Taylor on (07) 3238 6042.

The February workshops were organised by DAFF and Three Rivers and Central Highlands Regional Resource Use & Planning Co-operative (CHRUUP).

Modules covering subjects from the paddock to the office are offered to enterprises that want to ensure they are achieving industry benchmarks for best management practice.

FutureBeef's big focus on Qld drought

THE FutureBeef program has hit the ground running this year. There are almost 50 events already scheduled for the first half of the year and more are on the way. A focus has naturally been on the drought conditions across much of Queensland.

Check out our FutureBeef website drought page: www.futurebeef.com.au/topics/drought, which gives you a snapshot of relevant information. If you weren't one of the 266 people who registered for our recent drought decisions webinar, then make sure you watch the recording on our website as it covers the decisions you may need to be making at this time.

Roger Sneath presented on forage budgets, adjusting cattle numbers and choosing between different feed supplies. He also profiled a handy calculator, now on our website, to help you compare feeding versus selling.

All this FutureBeef activity is made possible through a partnership between Meat & Livestock Australia and the governments of Queensland, the Northern Territory and Western Australia.

Krista Cavallaro, Manager (FutureBeef)
Phone: (07) 3255 4324
Email: krista.cavallaro@daff.qld.gov.au

Introducing graduate policy officer, Emily Barbi

I GREW up in Mackay and attended Mackay Christian College for most of my schooling including my senior years, when I undertook Agriculture as a core course. During this time I developed an interest in Agriculture and after I graduated Grade 12, I undertook a three- year Bachelor of Applied Science Degree majoring in Production Animal Science at the University of Queensland, Gatton.

I am particularly interested in beef cattle production, especially reproduction, and undertook my course work placement on a cattle and wheat property between Roma and Taroom. I also gained a Pregnancy testing and AI certificate and have spent time with producers undertaking different breeding programs.

I thoroughly enjoyed my degree and time spent at university and graduated in November 2013. After graduation I worked at Australian Reproductive Technologies in Rockhampton for two weeks, where I focused on the embryology side of the company.

Both during school and university I enjoyed touch football and netball; I have also had various opportunities to travel around the world with my family including Europe, New Zealand, Hong Kong and Fiji.

We have also taken trips up to the Territory fishing and camping for several weeks every few years. In December 2013, I was appointed to the Department of Agriculture, Fisheries and Forestry as a graduate policy officer.

I look forward to developing my skills and knowledge in all areas of agriculture and hope to gain as much experience as I can while working for DAFF.

Emily Barbi, graduate policy officer, Rockhampton.

Testing cattle ticks for resistance

CATTLE ticks (*Rhipicephalus microplus*) are tested for resistance to acaricides at the Department of Agriculture, Fisheries and Forestry's Biosecurity Sciences Laboratory in Coopers Plains, Brisbane.

The larval packet test (LPT) is the standard testing methodology for a variety of acaricides. This test relies on a good supply of larvae to be produced by the adult female ticks submitted.

To get meaningful results, they need a good sample of cattle ticks to test. The following steps are a general explanation of how to collect ticks most likely to lay a suitable amount of eggs for resistance testing.

For more information or to arrange tick collection call your local Biosecurity Officer on 13 25 23.

1. Collect your ticks from the second to eighth day or the 14th to 24th day after dipping or spraying.
- Ticks can be collected over a number of days within these periods, but they must reach the Biosecurity Sciences Laboratory before they start to lay eggs.
- If you're using Cydectin or Ivomec, allow four days after treatment before collecting ticks.

2. Collect ticks early morning – before 7.30am if possible. Female ticks engorge in the last 12 hours of their time on the animal and most drop off early morning.

3. Collect only the fat, fully engorged ticks. Half-engorged and small ticks only lay a few eggs and aren't useful for testing. Avoid collecting nymphs (9-12 days old). This stage is the hardest to kill, and a few may survive dipping, even if they are not resistant to the acaricide.

4. Select ticks from a range of cattle. That is, a few ticks from a number of cattle, to provide a better representation of the tick population. Supply a separate sample from each mob using another dip or spray facility.

5. Collect at least 40-50 fully engorged ticks. A minimum of 40-50 healthy active fully engorged ticks are required; however, it's better to send in more if you can.

6. Put ticks in a ventilated container.
- A plastic takeaway container with air holes punched in the lid is suitable.
- Don't put anything else in the container with the ticks. Keep away from all chemicals, sunlight and excessive heat, as ticks can die or be seriously affected if not treated properly and become useless for analysis.

7. Supply as much information as possible on the advice sheet – this helps the parasitologist make a diagnosis. Download a copy from www.daff.qld.gov.au/__data/assets/pdf_file/0006/65733/GEN008SpecimenAdviceSheet.pdf or get a copy from your biosecurity officer.

8. Give promptly to your local biosecurity officer or send by mail or courier to the Biosecurity Sciences Laboratory. When posting, use protective packaging such as cardboard to protect the ticks in transit.

9. Ask your biosecurity officer about collecting ticks for adult immersion testing.

Pre-loading heifers with phosphorus examined

New supplement strategy reveals emerging trends

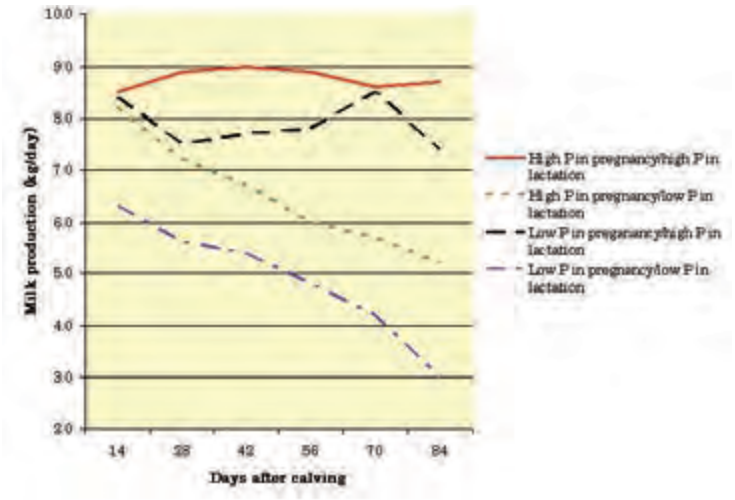
A MAJOR experiment at Brian Pastures Research Station near Gayndah is evaluating better ways to get breeders to eat phosphorus (P). For the past seven months, 40 heifers have been individually fed to evaluate a new P supplementation strategy. Project leader Dr David McNeill explained that even though the experiment will not finish until April, some clear trends are already emerging.

About 70 per cent of the grazing land in northern Australia is P deficient, and the expense of P supplementation is a huge issue for profitability. Current advice is to supplement heifers with P to meet their immediate and greatest needs, that is, in lactation. However, feeding P while heifers have a calf at foot is only useful if they actually eat the supplement. The challenges of the wet season can make this difficult.

The 'pre-loading' strategy examined in this experiment is to try to pre-load heifers with phosphorous in the dry season, when they should be pregnant and it's relatively easy to get them to take a supplement. Bone is a rich source of P, and the heifer's skeleton could potentially be used to store large amounts of P. The heifer could then draw on these body stores of P through the next wet season, when they should have a calf at foot. Phosphorus is especially needed to maximise the heifer's ability to produce milk, as milk is very rich in P.

The experiment started in June 2013 and will finish early April 2014. It covers the last four months of pregnancy and the first three months of lactation, followed by a recovery phase of six weeks after weaning when all heifers will be fed a high P diet. Forty maiden heifers due to calve at three years of age were started on a diet rich in energy, protein and fibre with both diets identical apart from the presence or absence of Kynophos® as the P supplement. During lactation the fibre was reduced and energy increased to meet the nutritional demands of the heifers and calves. In pregnancy, half the heifers were fed the diet with Kynophos fully mixed into their diet, and the other half without. At calving these groups were split again into half with and half without Kynophos.

So, is it viable to supplement in the dry but not the wet? Emerging trends show that after four months on the high P diet the pre-loaded heifers gain an extra 45kg of live weight by calving, and use these body stores to produce about 30pc more milk than heifers on a low P diet through the experiment (Figure 1). In fact, the milk production of the pre-loaded heifers matched that of the heifers fed according to current advice (low P in pregnancy, high P in lactation), for the first four weeks of lactation.



Milk outputs from first-calf heifers on different P supplementation strategies (high P in pregnancy/high P in lactation; high P in pregnancy/low P in lactation; low P in pregnancy/high P in lactation; low P in pregnancy/low P in lactation).

Examples of the first-calf heifers on each P supplementation strategy at weaning.

However, after the first four weeks of lactation the heifers managed according to current advice began to produce much more milk than the pre-loaded heifers. Over the three months of lactation, the 'current advice' treatment heifers produced about 20pc more milk than the pre-loaded treatment heifers. The team are also investigating how big a role bone-reserves play in the pre-loading strategy by taking bone samples from the heifers at key points in the experiment. Calf weaning weight data is still to be finalised.

MEASURING INDICATORS OF P IN MAIDEN HEIFERS

- Bone tissue is collected at the beginning of the trial, at calving, at weaning and after the replenishment stage to indicate the ability to store and release P.
- Faeces, urine, blood and milk samples are taken fortnightly to determine mobilisation of P in the body and P outputs.
- Phosphorus inputs measured through weekly feed intakes.

PRELIMINARY FINDINGS

- The high P and low P groups had a difference of approximately 45kg in live weight by calving.
- Addition of Kynophos improved appetite dramatically.
- There was no difference between the high P and low P groups in calf birth weights, indicating the extra nutrition in calving helped the high P heifers to continue to grow their own body stores of fat, protein and bone.
- According to the expectation of P storage, the heifers fed high P in pregnancy but low P in lactation produced 30pc more milk then those fed low P throughout pregnancy and lactation (Figure 1).
- The 'current advice' strategy still proved to be superior to the 'pre-loading' strategy. The heifers fed low P in pregnancy but high P in lactation produced 20pc more milk than the high P in pregnancy, low P in lactation heifers (Figure 1),
- The heifers fed high P through pregnancy and lactation produced three times more milk than those fed the low P diet throughout, indicating the value of P supplementation in pregnancy and lactation (Figure 1).
- During lactation, P supplementation allowed the heifers to continue to grow their own bodies as well as produce extra milk.
- Calf data is yet to be finalised but current trends indicate that weaning weights will reflect the milk production rankings of P supplementation strategies.

Ideally, P should be fed during lactation in the wet season in areas of Queensland deficient in P. However, if this is not possible, the 'pre-loading' hypothesis has merit – dry season supplementation can be a viable alternate to maintain P storage levels in the bone that can be drawn out and mobilised throughout the body to stimulate milk production when wet season supplements are restricted.

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