

Northern muster

Information for rural business in north Queensland

Producing quality food and fibre
for a healthy bottom line



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Issue 20 December 2008

editorial

Welcome to the 2008 Christmas edition of the *Northern muster*. A hot summer appears to be on our doorstep. There has been rain for some and others are still supplementing.

This issue includes Climate Outlook, Dalrymple Diary, Market Outlook, stock supplements, dehorning best practice, targeting MSA markets and project updates.

We take this opportunity to thank all our advertisers for their support, for without them we would not have a newsletter. Thank you also to our contributors and production team.

Use the Business Information Centre for advice and contacting DPI&F staff. Phone 13 25 23.

We wish everyone an enjoyable festive season, a timely break in the season and rain and pastures to sustain our Industry.

Enjoy the newsletter.

Please take the time to fill in the Feedback Sheet and send it in.

Alan Laing
Editor



Changes to drought assistance from 1 November

As of 1 November 2008, drought assistance through the Department of Primary Industries and Fisheries will be transferred from Biosecurity Queensland to be managed by Regional Delivery officers.

This means that claim forms for transport of fodder and water, restocking and returning stock from agistment are now to be lodged through the DPI&F's central office in Brisbane. Claims should be addressed as follows:

Drought Relief Assistance Scheme
Department of Primary Industries and Fisheries
Level 5
GPO Box 46
Brisbane Qld 4001

The new process will enable faster processing of claims and streamlined contacts for producers.

Regional Delivery officers already manage research, development and extension activities related to drought, including climate variability risk management services. Officers will now be able to better link these activities with drought assistance requests.

Local drought committees will also be coordinated by a Regional Delivery officer, however Biosecurity Queensland staff will still be involved to provide local technical input.

For drought assistance, contact DPI&F's Drought Hotline on 1800 025 656, or DPI&F on 13 25 23.



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Department of Primary Industries and Fisheries
PO Box 15
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Facsimile: 07 4720 5198

Email : Tanya.Firth@dpi.qld.gov.au
Tonia.Grundy@dpi.qld.gov.au
Alan.Laing@dpi.qld.gov.au

The Department of Primary Industries and Fisheries (DPI&F) seeks to maximise the economic potential of Queensland's primary industries on a sustainable basis.

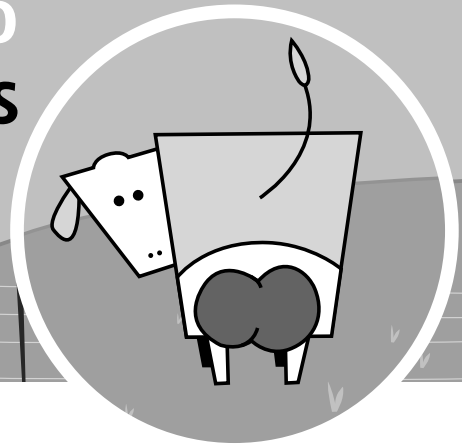
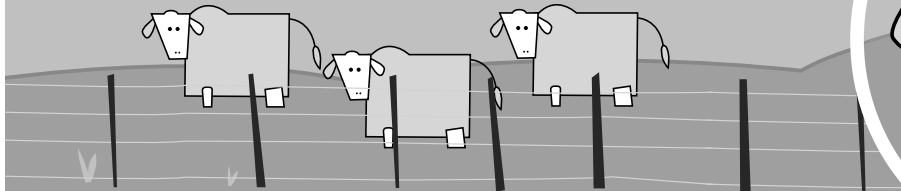
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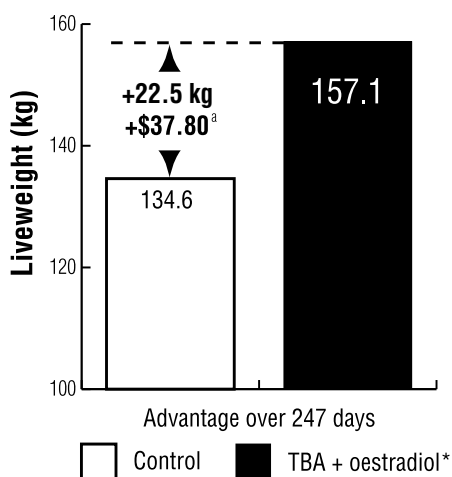
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Compudose-G at a glance

- Ideal for finishing grassfed cattle
- Functional life of 90–100 days
- Two active ingredients
- Superior short-term liveweight gain advantage
- Should only be used under good nutritional conditions
- Weight gain benefits can be lost if cattle are not re-implanted
- Implant 100 days before anticipated turn-off, or ideally, as the terminal implant as part of a whole-of-life strategy

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Compudose-G is a short-acting implant which has a functional life of less than 100 days. While it delivers superior short-term liveweight gain advantages, these benefits can be lost if cattle are not re-implanted. As such, Compudose-G should be implanted 100 days before anticipated turn-off, or ideally, as the terminal implant as part of a whole-of-life strategy.

Compudose 400 is a long-acting implant whose liveweight gain advantages are maintained even after the pay-out period expires. It is the only implant which maximises growth rates in beef cattle for 400 days, making it the best choice when sustained growth is required. It is ideally implanted at branding as part of a whole-of-life program.

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¹BF1433 NAPCO "Coorabulka" trial, first round steers, first period only. Trial data based on revalor[†]-G. *Compudose-G and revalor-G contain 60 mg trenbolone acetate (TBA) and 12 mg oestradiol-17B. ²Jap-ox, \$1.68/kg. *Elanco®, Compudose® and the diagonal colour bar are trademarks of Eli Lilly and Company. ©Compudose is a trademark for Elanco's brand of oestradiol. WORDSMITH28126

Neutral ENSO conditions

SOI remains moderately positive.

The SOI has been consistently positive over the past few months. The monthly average of the SOI for October was plus 14.2, up slightly from plus 13.7 in September. The SOI looks set to remain in positive values over summer 2008- 2009, with very little chance of an El Niño developing.

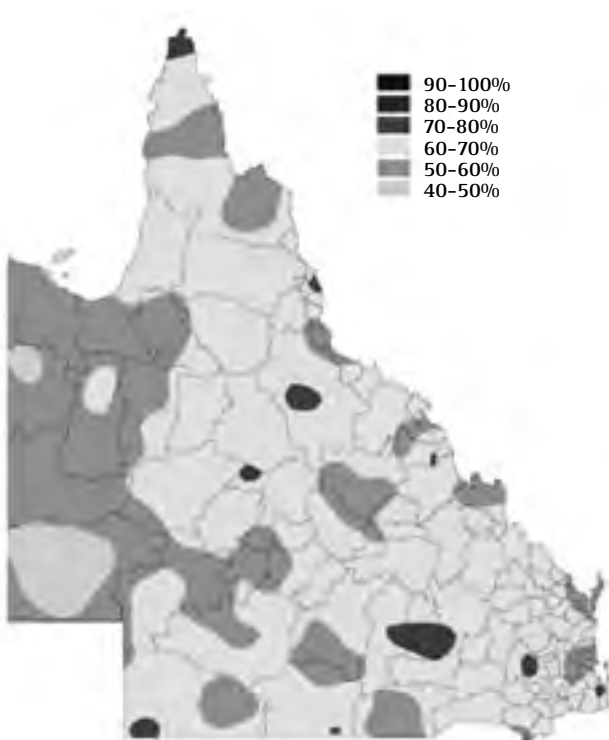
A consistently positive SOI phase (Phase 2) during October and historical rainfall records indicate a 50 to 70 % chance of exceeding median rainfall.

Winter and spring were patchy with above average rainfall across much of Queensland in both July and September. These wetter months were both followed by very dry conditions across Queensland in August and October.

According to the Bureau of Meteorology we can look forward to warmer days and nights over the next few months. There is a 65% to 80% chance of exceeding median maximum daytime temperatures. The exception is northern and eastern Cape York, which should be closer to normal daytime temperatures.

According to the Bureau of Meteorology's temperature outlook, northern Queensland has a 60% to 75% chance of warmer than average day

Probability of exceeding median rainfall for November/January based on consistently positive phase during September/October



time maximum temperatures. And we can expect warm nights too, with a 65% to 80% chance of exceeding the median overnight minimum temperatures from November to January.

The Madden-Julian Oscillation (MJO) effects Australian rainfall. In northern Queensland in summer the MJO is associated with dry conditions during Phases 1 and 2, and wetter conditions during Phases 5, 6 and 7.

The MJO is a band of low air pressure originating off the east coast of central Africa travelling eastward across the Indian Ocean and northern Australia roughly every 30 to 60 days.

The chance of specific rainfall amounts, based on a near zero SOI Phase during August and historical rainfall records, for a number of regional locations are shown in the table. For similar information about your area a copy of Australian Rainman can be purchased from the Department of Primary Industries and Fisheries (Phone 13 25 23).

Location	Median Sept–Nov	Chance of		
		200 mm	300 mm	500 mm
Ingham	619 mm	97%	97%	75%
Atherton	470 mm	99%	93%	56%
	Median	150 mm	200 mm	400 mm
Mareeba	339 mm	99%	93%	70%
	Median	100 mm	150 mm	250 mm
Charters Towers	250 mm	99%	83%	75%
	Median	60 mm	80 mm	160 mm
Mt Isa	159 mm	83%	80%	57%

(Source Rainman Streamflow)

Daily updates of the SOI are available at 07 4688 1439. You can also receive a text message with the latest SOI values sent to your mobile phone. To subscribe to this free service or for any other climate information contact:

Lexie Donald
 Queensland Climate Change Centre of Excellence
 07 4688 1588 or at
Alexis.Donald@climatechange.qld.gov.au



The essential ingredient

Improved growth rates and feed conversion efficiency

Scientific trials involving thousands of cattle and conducted throughout the world have found that the addition of Rumensin to supplementary feed can increase weight gains by 70–120 g/head/day (6–16%), regardless of the energy and protein level of the supplement.¹⁻⁴

QDPI&F trials conducted at Swans Lagoon Research Station have demonstrated the addition of Rumensin to typical dry season molasses and urea supplements can improve liveweight gains by up to 70% and feed conversion efficiency by up to 59% compared to cattle fed standard molasses and urea rations.^{5,6} In one trial, Rumensin increased liveweight gain by 42% yet reduced molasses and total feed intake by 12% and 16%, respectively.⁶

Besides improving feed efficiency, Rumensin is the proven way of improving growth rates and reproductive performance in grassfed cattle, as well as controlling coccidiosis.⁷ If your molasses or lick doesn't contain Rumensin, then you're not getting the most out of your investment in feed supplementation.

Improved feed conversion efficiency in cattle fed molasses supplements⁶

	Rumensin (160 mg monensin /hd/day)	Control	Improvement
Molasses intake (kg/day)	3.2	3.7	-16%
Total feed intake (kg/day)	4.3	4.8	-12%
Average daily gain (kg/day)	0.428	0.301	+42%
Feed conversion efficiency	10.0	15.9	59%

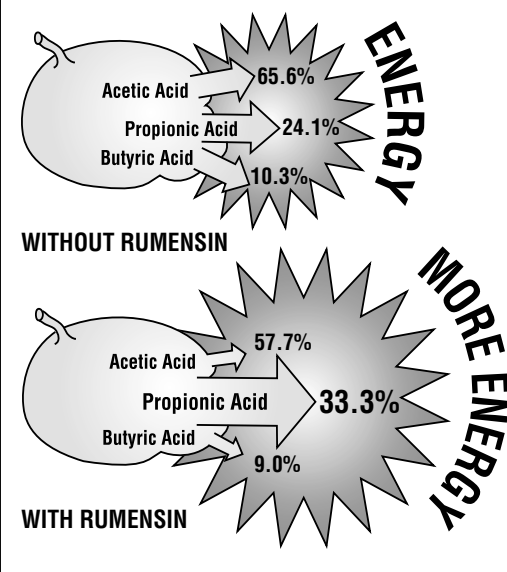
Ration included molasses + 3% urea, fed ad lib, plus a daily supplement of 0.8 kg chaffed hay and 0.3 kg cottonseed meal. Bos indicus crossbred steers, average weight 180 kg.

For further information, contact your feed manufacturer or Elanco on 1800 226 324

More energy from every mouthful

Rumensin® is the essential ingredient in all feed supplements. No matter what type of feed is provided or at what time of the year, Rumensin helps cattle to digest their food more efficiently. Put simply, this means more energy in the feed is made available to the animal from every mouthful consumed, thereby improving feed conversion efficiency (i.e. liveweight gain relative to feed intake) regardless of the pasture quality or the level of supplementary feeding.

Effect of Rumensin on volatile fatty acid production (molar percentage)¹



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Rumensin®

¹Goodrich, R.D. et al (1984), J. Anim. Sci. 58:1484–1498 ²Potter, E.L. et al (1976), J. Anim. Sci. 43(3):665–669 ³Lana, R.P. et al (1997), J. Anim. Sci. 75:2571–2579 ⁴Corsi et al(2001) Proceedings 17th Simposio sobre manejo de pastagens ⁵BF1449 ⁶BF1450 ⁷Rumensin is registered for improved feed efficiency and as an aid in the control of bloat in feedlot cattle; for improved feed efficiency, weight gain and reproductive performance in heifers; and as an aid in the prevention of coccidiosis caused by *Eimeria zuernii* and *E. bovis*. *Elanco®, Rumensin® and the diagonal colour bar are trademarks of Eli Lilly and Company. Rumensin® is a trademark for Elanco's brand of monensin sodium. WORDSMITH28052

Wrapping up the CREB (Clarke River and East Burdekin) project

As the end of 2008 draws near and we look to the skies for the signs of what are now considered early storms, the Dalrymple Landcare Committee is rapidly approaching the end of its second major project for the year. The CREB project has been running since November 2006 in partnership with the Australian and Queensland Government's National Action Plan for Salinity and Water Quality and Burdekin Dry Tropics NRM.

Throughout the two years of the project, a number of on ground works have been carried out to improve on property management options for reducing sediment loss during rainfall events. After many hours spent by the 19 participant properties, a suite of on ground works were nearing completion at the start of November 2008. To date, the following works have been recorded including: 67 kilometres of fencing, 55 new watering points and over 1200 ha of land reclamation works such as ripping, seeding and woody weed control.

All works completed as part of the project have been inspected and recorded in a geo-database for the project. The geo-database was designed and created in conjunction with the GIS team from Burdekin Dry Tropics NRM in Townsville. As projects have been completed, the photographic and GPS records taken in the field have been added to the database to create a whole of project footprint.

The database allows for the outcomes of the project to be viewed on either a project by project basis or as a collective. The CREB geo-database once finalised will form a part of the overall database for the Burdekin Dry Tropics region that will visually highlight other activities achieved in and around the region in recent years.

Officially the CREB Project will wrap up at the end of 2008. The Dalrymple Landcare Committee Inc would again like to take this opportunity to acknowledge all of the partners in the project (Australian and Queensland Governments through NAPSWQ and Burdekin Dry Tropics NRM) and the participant landholders of the project and once again thank them for their involvement.

QuikSpray units on the ground in time for the upcoming weed spraying season

The Dalrymple Landcare Committee Inc is glad to announce the arrival of two new QuikSpray units to the region. The two new 800 L units were acquired through the support of the Australian Governments Natural Heritage Trust funding in September. The top of the line units have been designed to suit the varied applications that they are required for across the region. Featuring twin 150 m hose reels, with remote auto-rewind that can also be utilised independently, the units are sure to be a hit when tackling infestations in those hard to get to areas.

Additionally, both units also feature a fitted TeeJet boom less nozzle system that can deliver an effective mist up to 15 m wide and are useful for treating small infestations or even fence line regrowth. A unit will be based at *Kirkton Station* near Ravenswood and one at *Wandovale Station* in the north of the region. The units are available for a maintenance fee of \$4.00/hour.

The two 800 L units were ordered in conjunction with a smaller 400 L QuikSpray unit ordered by the Ravenswood Landcare group who matched their SPIRAL Good Land Management Awards funding with cash contributions from landholders to purchase a unit (SPIRAL – Australian Government's National Landcare Programme Project supported by Burdekin Dry Tropics NRM). An additional 400 L QuikSpray unit based in Charters Towers is also available for hire (kindly donated by Dow Agrosiences). All enquiries can be directed to John Nicholas on (07) 4761 5170.

Queensland Landcare Conference at Monto – Infinity by Design

John Nicholas attended the Queensland Landcare Conference in Monto during September 2008 to see and hear the work of others involved in the Landcare movement across the state. A wide range of speakers covered a broad range of subject matters and topics over the three days. During the three days, John was fortunate enough to attend one of the field trips to a few local grazing enterprises and see what activities local Landcare groups and the Burnett Mary Regional Group have been engaging landholders in, and there are certainly a range of similarities and differences between the two regions.

A big feature of several of the conference sessions were how the future of Landcare at the local, regional, state and national level were travelling and how they were coping with some of the changes in funding allocations and project activities and processes. However, the issues of communication and monitoring and evaluation were re-iterated throughout the conference. As a result, the Dalrymple Landcare Committee Inc is looking to establish and maintain an active website to enhance the communication between the DLC and landholders in the region. All ideas are being considered throughout the design and development of the website. The DLC would openly invite input from landholders and other potential users as to what useful features should be considered for incorporation into the upcoming website. All suggestions should be directed to John on the included details.

John Nicholas

Project Officer –

SPIRAL Dalrymple Landcare Committee Inc.

PO Box 976 Charters Towers QLD 4820

Ph: 07 4761 5170 john.nicholas@dpi.qld.gov.au



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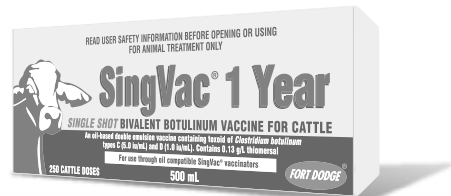


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Stock handling guidelines at saleyards

Background

Animal welfare is an important issue for all sectors of the livestock industry. Good animal welfare practices are critical for maintaining a positive industry image and for meeting legal requirements for the sale and transport of livestock. Under no circumstances should cruelty or ill-treatment of animals be tolerated.

Saleyards are an area of high public exposure and people not associated with the livestock industry often attend sales. Saleyards are therefore particularly susceptible to criticisms on animal welfare issues.

Queensland's animal welfare legislation, the *Animal Care and Protection Act 2001* (the Act), places a duty of care on the person in charge of animals. This means providing for the needs of animals in a way that is appropriate, and includes providing suitable food, water, treatment for injury and/or disease and facilities, and ensuring animals are handled appropriately.

Under the Act, a person in charge may include the owner, representatives of the owner, or any person with custody of the animal. At saleyards, the responsibility as person in charge may shift or be shared—as livestock move through the supply chain—between producers, transporters, saleyard superintendents/agents, spelling establishment operators and processors.

The Act recognises livestock codes (national Model Codes of Practice for the Welfare of Animals) as benchmarks for acceptable animal welfare standards for a particular type of animal or animal use. The Animals at Saleyards code contains information on acceptable animal welfare standards for the various livestock species in saleyards.

These stock handling guidelines and application of the Animals at Saleyards code will ensure appropriate animal welfare practices at saleyards.

A national published guide to the selection of animals fit for travel, *Is it fit to load?* (by Meat & Livestock Australia), also provides valuable information for saleyard personnel in determining whether animals should be transported to and from saleyards.

Responsibilities of individuals

Superintendent or saleyard supervisor

The manager, superintendent or saleyard supervisor has overall responsibility for the welfare, care and

handling of animals held at the saleyard complex. They are the overall person in charge for the activities at the saleyard. This responsibility may be either through the direct supervision of saleyard staff or indirectly through the livestock agents and stock contractors.

They should ensure that every person at the saleyard who is in charge of livestock understands their individual animal welfare responsibilities. *This is best achieved by developing standard operating procedures and contingency plans. These procedures should specify who has responsibility at each step of the selling and transporting process.*

Stock contractors at saleyards

Stock contractors must be competent in handling all classes of stock processed through the yards. They should have the ability to recognise signs of distress and injury and also have the ability to handle the animals quietly and efficiently. Inexperienced persons should receive adequate training in handling stock by competent staff.

Each species has different handling requirements and in addition to the Saleyards code, relevant species-specific codes of practice should be applied when handling livestock.

Persons responsible for feeding cattle that are being transported should also be familiar with the recommendations set out in the *Beef industry—guidelines for feeding travelling cattle*.

Animals should be held in saleyards for as short a period as possible.

Owners

Animals that are emaciated and/or malnourished or that have visible injuries (such as cancers and open wounds), deformities, or are blind or arthritic should not be processed through saleyards.

Owners are responsible for selecting animals that are fit for sale and transport to the destination. The nature and duration of the journey should be considered when determining the degree of fitness required.

For animals being transported long distances, owners should provide water and feed deprivation times to the person responsible for receiving the animals at the destination. This will ensure the animals receive appropriate care after arrival.

Owners should make arrangements to ensure feed and water are provided for stock being spelled. This may include before or after sale and during transit.

Diseased, injured or weak stock should not be consigned to or processed through a saleyard.

Stock buyers

When buying stock, the class and condition of stock, and the nature and duration of the proposed journey, must be considered when assessing the suitability of stock to travel.

Stock should be transported from the saleyard as soon as possible after sale.

Where stock are to be transported long distances, consider the need to feed animals prior to consignment. See *Beef industry—guidelines for feeding travelling cattle*.

Agents

The owner's agents have a legal duty of care under the Act as the person in charge of those animals. Agents should work closely with owners and the saleyard supervisor to resolve any animal welfare issues that arise.

Handling injured animals

An animal is to be considered injured and unfit for transported if it is unable to stand and bear its weight on all legs. If, on arrival, an animal cannot walk off the truck because of injury or weakness it should be assessed by a competent authority who should determine whether the animal should be humanely destroyed on the truck.

Destruction should be carried out by, or at the direction of, the person in charge of the animal at the time. *Saleyards should have access to an experienced person at all times to undertake humane destruction.*

It is unacceptable to delay the humane destruction of severely injured animals.

Unacceptable practices

The following practices are unacceptable when handling animals:

- excessive use of jiggers or other goads
- kicking or beating animals
- pulling animals by the ears
- overstocking pens
- the sale of bobby calves and lambs that do not meet specified welfare standards
- consigning animals that are unfit for transport
- consigning animals in a late stage of pregnancy (over four months for ewes and eight months for cows)
- consigning animals to saleyards with in-grown horns.

Animals must not be dragged live from trucks.

Things to remember

Under no circumstances should cruelty or ill treatment of animals be tolerated.

Animals that have visible injuries (such as cancers and open wounds), deformities, are emaciated and/or malnourished, suffer blindness or are arthritic should not be processed through saleyards.

Pre-transport preparation of livestock and understanding of the requirements of the animal will help assure animals are processed through saleyards humanely.


All persons in charge of animals at saleyards have a duty of care towards the animals. This duty of care is often shared between individuals and can include owners, agents, staff, contractors, truck drivers and buyers. Persons in charge of transporting animals should be familiar with the Meat & Livestock Australia national guide to the selection of animals fit for travel entitled *Is it fit to load?*

Understanding the responsibilities of all persons involved in the selling process will help ensure compliance with the requirements of the Act and relevant national Model Codes of Practice for the Welfare of Animals.

Ian Rodger

Regional Project Leader, Animal Welfare
Biosecurity Queensland Ph (07) 4057 3675

Seasons Greetings



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Dehorning best practice

The following article is in response to a request from a producer reader.

In 2007, MLA produced a booklet entitled 'A guide to best practice husbandry in beef cattle – branding, castrating and dehorning.' It is authored by Ross Newman and is very well put together with appropriate photos and diagrams.

What is dehorning?

Dehorning is the removal of the horns from cattle. It is a labour-intensive, skilled operation with important animal welfare implications.

Cattle can have horns of different length, shape and size, but all horns are detrimental to cattle from a welfare and production perspective, and pose a potential safety risk to cattle handlers.

Tipping (removal of the insensitive sharp end of the horn) is not dehorning. It does little to reduce the disadvantages of having horned cattle, for example it does not reduce bruising, and tipped cattle can still be a danger to other cattle and handlers.

When to dehorn

The younger that cattle are dehorned, the better both for the calf and for the operator. Young calves suffer less pain and stress, have less risk of infection and have better growth rates. They are also much easier to handle and to restrain.

Dehorning and 'The Cattle Code'

Sect 5.8.1. *To minimise pain and injury all horned cattle should be dehorned as young as possible, preferably prior to weaning, and at a suitable time to reduce fly worry.*

After dehorning, cattle should be inspected regularly for the first 10 days, and any infected wounds treated. In those situations where flies are a problem, a suitable fly repellent should be applied at the time of dehorning.

Facilities and equipment

Dehorning is best done in a calf cradle that allows good access to each horn site. Good restraint minimises the duration of the procedure and pain to the calf, reduces the risk of wound contamination and makes it easier for the operator.

Which dehorning instrument?

The dehorning instrument used will depend on the age of the calf:

- hot iron – under two months old
- dehorning knife – 2–3 months old
- scoop dehorner – 2–6 months old
- cup dehorner – 2–6 months old

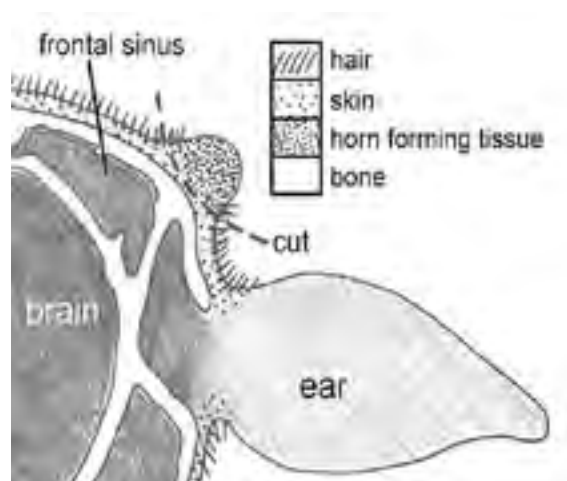
Animals over six months old*

- guillotine dehorner – horn tipping only
- surgical wire – horn tipping only
- tippers – horn tipping only
- horn saw – horn tipping only

*Horn tipping only unless under the direction of a veterinarian.

Caustic dehorning chemicals must not be used. They can spread into the eyes if the skin gets wet.

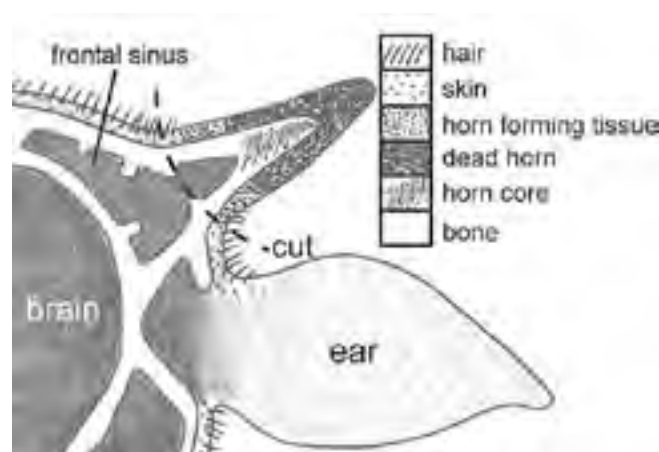
Anatomy of a growing horn



Young calf

The horn grows from the skin around its base – at different rates with different breeds. The horn bud is usually free-floating in the skin over the skull base in calves less than about two months old.

As the calf gets older, this horn bud attaches to the skull bone and a small horn forms.



Older calf

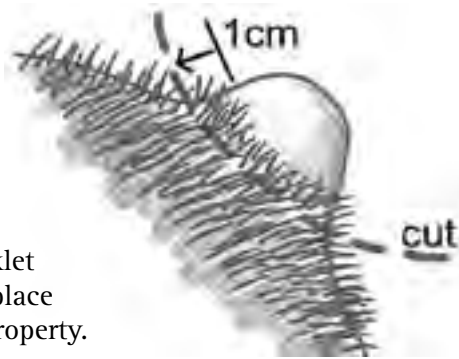
After the horn bud attaches to the skull, the horn grows out from under the skin. It becomes a bony extension of the skull with the hollow centre of the horn opening into the frontal sinus. The brain lies directly under the frontal sinus covered by a thin layer of bone.

Dehorning after the horn attaches increases the risk of entering the frontal sinus and subsequent infection.

The key to successful dehorning

Applies to all methods. Because the horn grows from the skin around its base, you must remove or destroy a complete ring of hair (1 cm wide) around the horn base.

Check that the excised ring is wide enough because some horn will grow if the ring is not complete. A 1 cm wide ring of hair is enough – any more will make a larger wound, cause avoidable pain, and delay healing.



The whole booklet is worthy of a place on any cattle property.

Contact **Meat & Livestock Australia (MLA)**
Ph 1800 023 100

Poll gene research

The poll horn condition in tropical beef cattle is not well understood. Poll cattle would be desirable for three sound reasons

- animal welfare considerations
- production loss from bruising
- Workplace Health and Safety issues.

At the moment, a massive swing towards breeding poll cattle may lose productivity in other areas.

There is a major Beef CRC/MLA research project lead by Dr Kishore Prayaga of CSIRO looking at gene discovery and gene expression to identify and understand the poll horn condition in tropical beef cattle.

Once the relevant gene markers are found and also understood how they work, cattle will be able to be identified that will genuinely breed polled progeny with the other production traits we also look for.

Alan Laing
DPI&FAyr
Ph (07) 4720 5115

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Sulphur in supplements

The following article is repeated because sulphur is an important component of our livestock nutrition, and also a poison in excess.

Recent supplement price increases have resulted in the practice of reducing urea and increasing Gran-am percentages in dry licks in order to reduce costs. This is potentially dangerous. Excess sulphur intakes can be very harmful.

Urea is fed at this time of year, because cattle are on protein deficient pastures and a protein supplement is needed. Urea is still the cheapest form of rumen degradable protein supplement we can use.

Where a protein supplement is needed, adult cattle still need 55 to 60 grams of urea per day, balanced with the correct amount of sulphur.

Reducing supplement costs can be done by

- Reduce non essential ingredients in the lick
- Supplement cattle that are likely to give an economic return to that supplement
- Targeted but effective and balanced supplements
- Manage breeders to reduce numbers of breeders feeding calves in the dry season
- Segregate needy cattle from less needy cattle.

(See last issue *Northern muster* page 28.)

Regarding molasses mixes, under NO circumstances should Gran-am be added.

Sulphur – too little or too much?

Sulphur plays an important role in cattle nutrition. It is an important constituent of protein and is essential for microbial activity on protein, cellulose and starch in the rumen. Therefore it plays an important role in protein, fat and carbohydrate metabolism.

For grazing cattle the main source of sulphur is in grass, especially when it is green. As pasture matures and the protein content of the grass falls, the intake of sulphur also declines.

Adding sulphur to supplements

Sulphur is required by the rumen microbes to form microbial protein. The animals requirements for sulphur are usually met from pasture but when a source of nitrogen such as urea is added to the diet extra sulphur is usually required. This is usually done by adding Gran-am or elemental sulphur.

When adding sulphur to supplements or production mixes the amount of sulphur in the total diet should be taken into account. Some water, especially bore water, can contain high levels of sulphur. Cattle require 1.5 g of sulphur per kg of dry matter.

The optimum ratio of nitrogen to sulphur for licks is 10N:1S. This can be achieved by adding Gran-am or elemental sulphur at the following rates:

Gran-am. Gran-am should be added at a rate of 1 part Gran-am to 5 parts of urea.

Elemental sulphur. Elemental sulphur should be added at a rate of 1 part sulphur to 20 parts urea.

If the lick contains a significant amount of protein meal further adjustments will need to be made to the sulphur level to balance the nitrogen: sulphur ratio.

Commercially available supplements such as blocks or dry licks usually have the correct nitrogen to sulphur ratio.

Molasses contains significant levels of sulphur. Therefore it is NOT necessary to add extra sulphur even when urea is added.

What happens if cattle consume too much sulphur?

As Gran-am is very bitter it is sometimes included at higher levels to help to control intake. This can lead to excess intake of sulphur.

Adding extra sulphur to fortified molasses or grain mixes where intakes are high (2 kg per day or higher) can lead to severe problems and death.

In cattle, large amounts of sulphur can lead to sulphur toxicosis, a permanent brain disability and death. The initial signs in the animal are restlessness, thrashing, kicking at the stomach, staggering, diarrhoea and muscular twitching.

There have been cases where deaths have occurred where excess levels of sulphur have been used in feeds to control intakes. In these instances Gran-am was added to molasses mixes, and Gran-am and/or magnesium sulphate was added to grain mixes, in an attempt to reduce intake.

Mineral imbalance

Undesirable secondary affects can also occur where there is an excess level of a mineral in a diet. These secondary effects can result in a deficiency in another mineral and/or reduced feed intake. Excess sulphur decreases copper retention and can precipitate a copper deficiency.

A dietary imbalance often results in a reduction in feed intake and for this reason alone it is not a good idea to use an excess of any minerals in feed rations. Excess levels of sulphur have been shown to result in reduced feed intake and reduce rumen motility.

The National Research Council suggests that ruminants should not be fed more than 0.4% sulphur (dry matter basis) to prevent reductions in intake (NRC, 1987). However symptoms of a disease

called PEM have been induced in cattle consuming diets with 0.4% sulphur (Gould *et al.* 1991). PEM or Polioencephalomalacia is a disease condition characterized by necrosis of the cerebrocortical region of the brain. Until we know more it may be safer to use lower levels, or work on 1.5 g of sulphur per kg dry matter.

Sulphur deficiency – where does it occur?

Basalt soils world wide are often deficient in both sodium and sulphur. Sodium and sulphur are primarily deficiencies of the wet season, just as phosphorus is most limiting in the wet season on phosphorus deficient soils. Mulga country is also deficient in sulphur.

The recommended supplement on basalt country for wet season salt and sulphur feeding is salt and 12% sulphur by weight. Depending on the location cattle will consume 50–60 grams of the mix per day. Intakes may be higher than this in the first few weeks of feeding.

Felicity Hamlyn-Hill

DPI&F Charters Towers

Ph (07) 4761 5157

Alan Laing

DPI&F Ayr

Ph (07) 4720 5115



An advertisement for Duesburys. The top part shows a hand holding a small pile of dark beans. Below this, there is text: "more than just a bean counter". Further down, it says: "At Duesburys we understand the challenges facing today's small business and are on hand to help with practical business solutions through Business Analysis and Consultation, Estate and Succession Planning." At the bottom, it says: "Call Andre, Lindsay or Bronwyn for a consultation on 4092 1677." The Duesburys logo is also present, which includes a stylized 'D' and the text "Duesburys Accountants & Advisors".

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Working with producers to achieve MSA premiums

MSA grading at JBS Swift & Co in Townsville commenced in April 2008. The introduction of MSA grading provides an opportunity for producers to receive a 10c premium for 0-4 tooth cattle that grade 'boning room 10' or better. This premium has the potential to improve beef business gross margins.

Under the Value In Beef project, DPI&F staff are working with a number of producer groups to improve compliance rates of cattle consigned to MSA markets. This includes 3 MLA funded producer demonstration sites (PDS's) which have been set up in western Queensland, Charters Towers and the Burdekin regions.

The MSA PDS groups have producers partnering with DPI&F, MLA and JBS Swift & Co with the primary aim of improving MSA compliance rates. This includes:

- reducing the percentage of cattle that do not meet company specifications for weight, dentition and fat cover and are therefore ineligible for MSA grading;
- reducing the percentage of cattle which become MSA 'ungrades' due to pH and/or meat colour;
- increasing the percentage of cattle receiving a premium by grading into boning room 10 or better.

The MSA PDS project will improve skills and understanding of MSA grading, plus analysis and interpretation of MSA feedback. It also provides opportunities for producers to participate in 'on property' demonstrations of cattle performance monitoring and strategies to achieve MSA compliance. Each PDS has a key site. However compliance data and management strategies from other properties within the group are also addressed. The results and progress of these sites will be reported annually in the *Northern muster*, and in due course field days will be held (watch this space!).

Since June two of the sites have made progress in reducing the percentage ungrades due to pH and meat colour. At *Lisgar* (Burdekin group), three consignments have been sent in targeting MSA premiums since June 2008.

In the first consignment (3.5 year old steers), less than 3% made it to boning room 10 or better and 66% were ungrades from high pH or meat colour.

In the third consignment (2.5 year old steers), less than 2% were ungrades due to high pH and 45%

made it to boning room 10 or better. However, 53% made it to boning rooms 11 to 14 – close, but not close enough for the premium.

The following changes were made

- reduced age
- finetuned stockhandling in the month prior to and up to trucking
- managed paddock nutrition.

Other practices underway at *Lisgar* include the longer term strategy of using genetics to improve MSA performance through

- increasing growth rate will reduce age at turnoff and therefore ossification
- increasing marbling
- increasing rib fat cover.

Improving nutrition pathways to reduce age of turnoff is also part of ongoing management. Further improvements are expected in this herd's MSA performance over time.

At *Trafalgar* in the Dalrymple Shire, there has been a high level of compliance with company specs, so the greater majority of cattle have been eligible for MSA grading. Of those eligible for MSA grading the percentage 'ungrades' in the August consignment was 41%. This was reduced to 12% in the October consignment, as a result of improved paddock nutrition, fine tuning stock handling and reducing time in the yards prior to trucking.

It should be noted that some of the better MSA results have come from cattle consigned from western Queensland. This is despite 10-12 hours travel time to the meatworks.

The key factors which impact on whether cattle grade boning room 10 or better, include ossification, marbling, hump height, carcass weight and rib fat. These factors (which affect eating quality) will be discussed in future articles.

For more information go to www.msagrading.com.au

Felicity Hamlyn-Hill
DPI&F Charters Towers
Phone 07 4761 5157

Alan Laing
DPI&F Ayr
Phone 07 4720 5115

Karl McKellar
DPI&F Charters towers
Phone 07 4761 5153

Ian Gray
DPI&F Cloncurry
Phone 07 4742 1311



Precision beef cattle production through an alternative genetic approach

This project, also known as the Epigenetics Project, lead by the DPI&F, studies the deviation from traditional Mendelian inheritance patterns in beef cattle. This deviation can result from the expression of a gene being dependent upon whether it was inherited from the male versus the female parent (imprinting). It could also result from certain environmental conditions leading to permanent changes in gene expression.

Epigenetic inheritance can have significant effects on growth, behaviour and health traits. The susceptibility of epigenetic inheritance to environmental effects can compromise conventional quantitative trait loci (QTL) utilisation strategies.

Therefore, these epigenetic interactions add as yet unaccounted for variation into beef cattle production systems. This results in breeding and production inefficiencies, especially in the predominant tropical breeds in Queensland.

This deviation from the conventional genetic model has been highlighted in a number of studies worldwide. To date there has been no concerted effort to understand the mechanisms for these interactions that impact significantly on tropical beef breeds and production outcomes. Similarly, strategies for producers to manage these influences within breeding programs have yet to be developed.

The understanding and application of this proposed cutting-edge internationally collaborative research has the potential to greatly enhance permanent genetic gain in Queensland's tropical beef cattle breeds.

Central hypothesis of project

Our central hypothesis for this project is that many traits of economic importance in beef cattle

- appear to be affected by genes with imprinted or other epigenetic effects, and
- lack of identification of these genetic mechanisms will sustain unrecognisable variation and production system inefficiency.

Therefore, unique Australian and USA resources and expertise are being combined to -

- Better understand the biology associated with epigenetic influences affecting reproduction, growth, carcass and adaptation traits of *Bos indicus*-*Bos taurus* crossbred cattle;
- Specifically investigate all aspects of growth from pre-natal and early post-natal development to feeding-finishing systems and to integrate these influences on cow reproduction, productivity, mature size and longevity; and
- Formulate strategies for producers to manage these

epigenetic influences within beef cattle breeding programs to increase precision and reduce variation in these key production traits and end-product quality, resulting in increased efficiency and ultimately, increased profitability.

Specific research and collaborative activities

(i) Prenatal characterisation of growth and development in *Bos indicus* and *Bos taurus* cattle

This component of the project is being lead by Prof. Stefan Hiendleder, University of Adelaide. This project will evaluate placental and embryo-foetal development and birthweight/calf size among reciprocal cross F1 Brahman x Angus beef cattle.

(ii) Postnatal characterisation of growth, reproduction, behaviour and carcass traits in *Bos indicus* x *Bos taurus* resource cattle herds

This component of the project is being lead by Assoc. Prof Andy Herring, Department of Animal Science, Texas A&M University. This component will conduct QTL scans (reproduction, growth, basic industry carcass traits and behaviour) in the TAMU McGregor Genomics Project Herd (Reciprocal F2 Nellore (N) x Angus (A) Resource Herd) – birth to slaughter in males and birth to ~10 years of age in females.

(iii) Industry purchased Brahman heifers

This component of the project is being lead by Dr Brian Burns, Animal Science, Delivery, DPI&F in conjunction with Prof Stefan Hiendleder, University of Adelaide.

Approximately 22 industry Brahman heifers, located at the DPI&Fs Brigalow Research Station, Theodore are presently being artificially inseminated to either a -

- Breed average Angus GROUP BREEDPLAN 600 day growth EBV sire, or a
- Breed average Brahman GROUP BREEDPLAN 600 day growth EBV sire.

These dams and progeny will be used in sensitive gene identification and expression studies.

(iv) Evaluation of gene markers for growth, carcass, temperament and cow fertility with associated epigenetic effects in a tropical environment

This component of the project is being led by DPI&F and is being conducted at the Lisgar Droughtmaster Stud (Robert and Donna Rea), Home Hill, Queensland. The day-to-day collection of data from this herd is being managed by Alan Laing, DPI&F, Ayr. This GROUP BREEDPLAN Droughtmaster Herd will be used as a benchmark and validation herd to better understand the mechanisms for these epigenetic interactions that impact significantly on tropical beef breeds and production outcomes.

What will be delivered?

- A better understanding of the genetic potential of individuals; and

- Strategies for producers to manage these epigenetic influences within breeding programs.

These outputs will allow beef producers to increase precision and reduce variation in key production (reproduction, growth and carcass), adaptation (cattle tick and gastro-intestinal worm resistance) and temperament traits and end-product meat quality, resulting in increased efficiency and ultimately, increased profitability. This is especially important as branded beef food products continue to increase in demand.

This project is strongly supported by the Droughtmaster Stud Breeders Society.

Dr Brian M Burns
Project Leader, Animal Science,
DPI&F Rockhampton Ph (07) 4936 0338

Are your stock up to the challenge of vaccination?

Vaccination is now a well established practice to manage livestock diseases in Australia. All vaccines work in a similar way. They take a substance that is foreign to the animal's body, commonly referred to as an antigen and introduce it to the animal's immune system such that it mounts an immune response. This response involves the production of specific antibodies and lymphocytes. Vaccinated animals are said to be immunised only when they have successfully developed this immune response.

This requires two injections – one to prime the immune system and the second injection to boost lymphocyte memory cells to ensure a rapid response to an antigen challenge. Immunised animals will mount a protective immune response the next time they are exposed to that particular disease.

Producers have an expectation that vaccination of their stock will result in them being effectively immunised. Many factors impact on the effectiveness of vaccination. As producers improve their general livestock management, record keeping and quality assurance processes, it can be well documented that vaccines have been given correctly and that all animals have been vaccinated according to label directions. With these factors under control, can we still be confident that the vaccines being given will be effectively immunising our stock?

One of the most obvious things likely to impact on vaccine response is the general body condition of the animals when vaccinated. How well will animals that are in poor condition due to drought or malnutrition or under stress respond to vaccination?

It has been documented that cattle respond poorly to testing against Tuberculosis (TB) when they are in poor

body condition¹. Testing of cows against TB in northern Australia was often deferred during the latter part of the dry season because cattle infected with TB were typically too poor to mount the immune responses necessary to give a positive result on the caudal fold test for TB.

Could the same conditions impact the ability of cattle or sheep to respond effectively to commonly used livestock vaccines? Two published experimental studies do suggest that calves and yearling cattle that have been starved of energy and protein for short periods respond poorly to vaccination or have impaired immune responses that impact in some way on their ability to respond to infectious challenges and vaccination^{2,3}.

Although the data in this area is very limited, it makes a lot of sense to pay attention to the general body condition and levels of stress of cattle and sheep when they are vaccinated. Any management practice that optimises the body condition of cattle or sheep when vaccinated (there is some suggestion that obesity may also impair immune response³) is likely to have a positive impact on their response to vaccination. Extremely emaciated and stressed stock may respond poorly to vaccination.

Please consider this when you are planning your vaccination programs. Delaying vaccination can mean that by the time cattle or sheep are next able to be vaccinated, significant losses due to animals not being vaccinated could have occurred. Some immunity is better than none. However, if cattle or sheep are in very poor body condition or stressed when vaccinated for whatever reason, be aware that this may lead to a suboptimal response to vaccination.

This is one reason to maintain booster vaccinations, especially in young cattle first vaccinated during periods of drought. Boosters fill any gaps in individual animal response due to fluctuations in body condition and maintain high levels of immunity over time.

Paying attention to these simple points may mean the difference between just vaccinating your stock and fully immunising them.

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1. Anonymous. Bovine Tuberculosis Case Response Manual – Managing an incident of Bovine Tuberculosis, Animal Health Australia, Edition 1, 2007 pp 52-53. www.animalhealthaustralia.com.au
2. Griebel PJ, Schoonderwoerd M, Babiuk LA. Ontogeny of the Immune Response: Effect of Protein Energy Malnutrition in Neonatal Calves. *Can J Vet Res* 1987; 51: 428-435
3. Friske RA, Adams LG. Immune responsiveness and lymphoreticular morphology in cattle fed hypo- and hyperalimentation diets. *Vet Immunol Immunopathol.* 1985; 8:225-244.

Lee Taylor
Senior Veterinary Technical Manager – Livestock,
Pfizer Animal Health.

Breedcow and Dynama software – updates or new

Users of Breedcow and Dynama herd budgeting software version 5.00 or later may update old installations for free direct from the Breedcow and Dynama website.

The new web address is:

http://www.dpi.qld.gov.au/cps/rde/xchg/dpi/hs.xsl/30_6875_ENA_HTML.htm

The link to this site is provided as a desktop shortcut with the current version of Breedcow and Dynama, but most users will still have the old (defunct) address.

The other way in is to go to the DPI&F website www.dpi.qld.gov.au then click on the A-Z Index at the top of the page, and you'll find Breedcow and Dynama under B.

From the website you can update currently to Version 5.051, but this will keep moving along as the software continues to improve.

The updates will only do the programs you already have. The set now comprises 11 programs. If you have been left behind and want the newer developments such as the new(ish) *Bullocks* program, you will need a CD exchange (\$33).

For new users, Breedcow and Dynama software can be acquired direct from DPI&F Townsville office. Price is \$495 including GST. Particulars and screen views of output can be found on the website.

WE (Bill) Holmes

*Principal Agricultural Economist, DPI&F Townsville
ph (07) 4760 1563 (note new number) or 0419 646 919*

Phosphorus – get intakes right!

In the last issue (Issue 19), we outlined the benefits of feeding phosphorus over the wet. Even at current prices the economic returns of feeding phosphorus is strongly supported by extensive research and the experience of many beef producers across the north. In steers a 40 kg weight bonus will result from a \$15 investment in wet season phosphorus. You will get an even bigger bang for your buck with breeders in terms of liveweight gain, conceptions and calving rates, accumulating over time.

How much phosphorus is needed?

In nearly all cases it is very difficult to get a handle on soil phosphorus levels across large breeder paddocks. In the table below we have split the northern grazing country into 3 fertility categories

and have included the amount of phosphorus (grams/day) needed across the whole herd, excluding calves at foot.

Country or soil type	Phosphorus status	Phosphorus requirement/hd/day Across whole herd
Basalt, river frontage	Adequate	None – economic responses marginal
Deep sands	Acutely deficient	10 grams
Everything else	Marginal	7 grams

Phosphorus intakes – measure and fiddle

Irrespective of whether you decide to use a block or loose lick, intake is the major issue. In your note book record cattle numbers in a paddock, weight of lick put out and when lick runs out. Wet and dry season supplementation is a huge expense for all extensive beef producers. With current price rises it is critical to measure intakes and make adjustments to fine tune your feeding program. If intakes of phosphorus are too low contact your lick supplier to adjust the brew. No one product will be right in all situations – you need to monitor intakes, make adjustments or even change products where necessary.

Supplement vs phosphorus intakes

By looking at the above table you will have a fair idea of phosphorus intakes needed across your herd. The strength of supplements (% phosphorus) varies greatly and therefore required intakes will also vary between products. The table below indicates how much supplement cattle need to eat in order to get enough phosphorus each day.

Target phosphorus intakes - grams/head/day	Phosphorus % in lick	Target intakes of lick - grams/head/day
7	4	175
7	8	87
7	12	58
10	4	250
10	8	125
10	12	83

When getting quotes it is very important to consider the percentage of phosphorus in the lick as well as cost per tonne. Phosphorus percentages in a supplement will impact on intakes/head, costs/head, freight costs and workload in humping bags or blocks. Do your sums!

Joe Rolfe

*FNQ Beef Team Kairi Research Station
Ph (07) 4091 9400*

Joe Miller Mareeba

Don't rely on a good wet to get you out of trouble

It is amazing what rain can do to country after a run of dry years. And it is easy to think that given a good season, even the most overgrazed country will recover. But long term research at the MLA funded *Wambiana* trial near Charters Towers shows that this is not necessarily the case and that the path to recovery can be slow and painful.

The trial started in 1998 and is comparing the effects of different grazing strategies on a range of factors including animal production and land condition. Strategies being tested are moderate stocking (MSR), heavy stocking (HSR), variable stocking (VAR) with cattle numbers adjusted with available pasture, and rotational wet season spelling (R/Spell). In previous Muster articles we presented data on economic and animal performance but here we concentrate on some key pasture condition results.

As is common in north Queensland, rainfall over the last 11 years was extremely variable: while the early years were wet, the period from 2001 to 2005 was very dry. Since then, rainfall has improved, with the 2007/08 season being particularly good and receiving 1028 mm of relatively well distributed rainfall.

One key pasture variable measured is the density of 3-P grasses, which gives a simple but reliable indicator of both land health and productivity. 3-P species are the palatable, productive, perennial grasses and include desert bluegrass, Queensland bluegrass, Mitchell grass and black spear grass.

After a run of dry years, measurements taken in 2006 (Figure. 1) showed that there were big differences in 3-P density between strategies: overall, the density of 3-P grasses was far greater in the MSR, VAR and R/Spell strategies than in the HSR. In particular, 3-P density in the MSR was 4 to 5 times that in the HSR.

This is because heavy grazing prior to and during drought lead to the death of many 3-P tussocks,

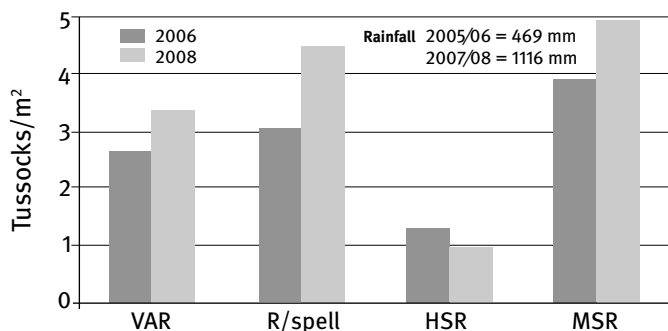


Figure 1: The density of 3-P tussocks in 4 different grazing strategies in 2006 and 2008

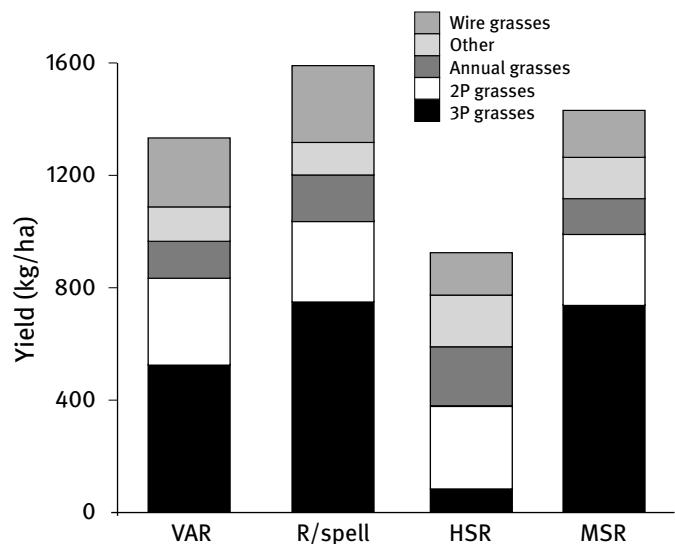


Figure 2: Pasture yield and composition in 4 different grazing strategies at the Wambiana trail after 11 years.

reducing their density in the HSR. In contrast, the lighter grazing pressure in the other treatments, particularly in the dry years, (as well as the wet season spelling in the R/Spell), allowed a large proportion of 3-P tussocks to survive, even under very low rainfall.

In some ways, this was all to be expected. However, the real story has been the change in tussock density with the better seasons from 2006 to 2008. Overall, 3-P density increased in the MSR, VAR and R/Spell over the last two years. In complete contrast, no recovery has occurred in the HSR, with tussock densities actually declining since 2006. This is despite the better seasons and the fact that stocking rates were reduced in the HSR by about 1/3 in May 2005 due to a drop in carrying capacity.

From a production point of view, these observations show that the ability to grow forage in the MSR, VAR and R/spell is many times greater than in the HSR. This is graphically illustrated by the paddock yields and pasture composition recorded at the end of the wet in May 2008 – not only is total yield far lower in the HSR, but the proportion of yield made up by 3-P grasses is far smaller than in the other strategies.

So the bottom line is: if you want to grow lots of feed for your stock, look after your better grasses by lighter stocking, adjusting stock numbers with the seasons and some form of wet season spelling.

If you get it seriously wrong, things will not recover overnight simply because of a few good seasons or even reduced stocking rates – when that happens both your land and bank account could be in trouble.

Peter O'Reagain and John Bushell
 DPI&F Charters Towers
 Ph (07) 4761 5161

Are your bulls fertile?

Are your bulls ready to successfully get your cows pregnant?

A coastal producer recently thought he had five bulls ready to work. He arranged a bull breeding soundness evaluation (BBSE) and got a shock. There was only one perfectly sound bull. The others have problems that include spiral deviations, testicle injury and poor semen quality.

A BBSE takes the guesswork out of whether the bulls are ready to successfully cover their cows.

It is recommended that purchased bulls have a full BBSE including sperm morphology (or percentage normal sperm). Working bulls should be regularly checked as breakdowns do occur and can be caused by sickness (such as 3-day) or injury. Defects such as spiral deviations may be just detectable at two year old and progressively get worse as the bull gets older.

Consult your local cattle veterinarian or beef extension officer.

Alan Laing

Extension Officer (Beef) DPI&F Ayr
Ph (07) 4720 5115





DAVID ANTHONY
S O L I C I T O R S
Mobile 0418 765 793


Capitol Arcade
166 Byrnes Street
Mareeba Q 4880

PO Box 53
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Where's the grass boss?

Driving around north Queensland over the last few months, many producers are still not getting the balance right between cattle numbers and grass supply.

Producers should know that they operate a grass growing business in the most variable climate in the world. Yet some producers play Russian roulette every year! Every wet season pans out a bit different which means your grass supply to run your business is never 'a sure thing'.

Having grass and reasonable ground cover when the season breaks (usually Christmas time) will benefit your beef business in many ways:



- grass responds more quickly to rain
- less soil and nutrient movement out of the paddock
- better water infiltration resulting in better pasture growth
- less weed or timber seedling establishment
- breeders pick up body condition quickly and go back into calf
- good diet selection for your cattle reduces supplement bills
- less stress on you and your cattle.

The *Wambiana* grazing trial south of Charters Towers has been running for over 10 years now through wet and dry years. It has continually demonstrated that high cattle numbers do not automatically equal more profit. In fact, the opposite – these results have been frequently referred to in publications and workshop presentations but adoption rates are still limited.

It's time for those producers who continually graze their country bare of grass every year to pull their socks up and start to manage their business sustainably. Keeping good herd and property records is a must and try reducing cattle numbers until you achieve reasonable ground cover at the end of the dry season. You might surprise yourself with reduced lick bills and a few more dollars in the bank.

Bernie English and Rebecca Matthews
 FNQ Beef Team Ph (07) 4091 9400

Market report November 2008

As we head into Christmas, the worldwide financial crisis seems to be impacting on all aspects of our business world, including our export beef sales.

Back in July our dollar was worth over 95 cents to the US dollar and cattle prices were fairly ordinary. The global financial meltdown caused our dollar to rapidly fall below 70 cents which produced a spike in cattle prices for several weeks. Then, uncertainty of currency movements, buyers only purchasing product as needed, and some importers defaulting on payment and trying to renegotiate prices for delivered meat, resulted in turmoil in all our major export markets.

This uncertainty has resulted in our cattle prices falling again by early November, and north Queensland abattoirs announcing early shut downs for the usual Christmas/New year closures. Even with the uncertainty of export prices, our October beef exports of 93,000 tonnes has surpassed many records for monthly export figures. Up to the end of October 2008, beef exports totaled 793,696 tonnes. The only positive news is that there has been reasonable rain about the state for November.

It seems certain the USA and all other major beef customers will go into an economic slowdown or even recession. Australia's economy will be affected with demand and prices for our exports declining.

On the positive side, the Australian dollar has been hovering in the mid 60 cents which will help our exports and our interest rates have fallen. Prices for fuel, fertilizers and some cattle feeds have also fallen.

The uncertain economic climate ahead will no doubt result in a tough cattle market into the New Year.

Australia

Total beef produced in 2007-08 was 2.15 million tonne which was 3% less than the 2.23 M tonne produced in 2006-07. Average carcass weight was 268 kg. The 2008 domestic consumption is projected to be approximately 770,000 tonnes worth \$6.8 billion.

Australian beef and veal exports	2007-08	Change from 2006-07
Total exports	930,00 t	- 4.5 %
USA	240,000 t	- 21 %
Japan	365,300 t	- 9 %
Korea	146,000 t	- 7 %
CIS (mainly Russia)	45,584 t	+ 469 %
Indonesia, Singapore, Philippines	47,500 t	+ 80 %
China, Hong Kong	5,136 t	+ 63 %
European Union	9,265 t	+ 28 %

Roma has again been our largest sale yard.

Queensland sale yards 2007-08 throughput

Roma	317,924
Cloncurry	237,753
Dalby	174,448
Gracemere	127,298
Charters Towers	109,739

Live export

The boat trade has continued through all the financial upheavals with prices improving over the last few months. Indonesia is still our stand out live export market with currency movements over the last few months assisting the Indonesian buying power.

2007-08 live exports

Total	769,890
Indonesia	547,000
Israel	59,000
Mexico	26,000
Philippines	15,600

Indonesia, with a population of 230 million, consumes approximately 380,000 tonne of beef per year with 273,000 tonne being supplied by domestic producers, and 107,000 tonnes from live cattle and some boxed beef imports.

Japan

Like all our export markets, the global financial crisis has our beef prices falling and fairly cautious buying by importers. Beef consumption figures are showing a reasonable upward trend since the BSE scare of 2003.

Japanese beef consumption:

August 2001 – 95,000 t
August 2003 – 72,000 t
August 2007 – 64,000 t
August 2008 – 70,000 t

Market analysts expect consumers to buy the cheapest proteins available which could see a swing to chicken and pork and cheaper beef cuts.

Korea

USA product has been back into Korea since June this year but the major retail chains have still not stocked or sold any USA product. Australian market share has fallen but a lot of the 20,000 tonne of USA product that has passed through customs is still in cold storage.

Market share:

Australia 64 % - 5 %
New Zealand 22 % - 3 %
USA 13 % + 9 %

Food safety is still a big issue with consumers with recent widespread TV coverage of sick cattle being slaughtered in USA resulting in lower sales of all meat, domestic and imported product. A large Korean supermarket chain with over 100 stores has reported over the last few months beef sales decreasing by 15% but chicken was up 17% and pork up 15%.

A free trade agreement between Australia and Korea has been under discussion in mid October and another meeting is scheduled in mid December in Australia. The world economic meltdown will possibly put a damper on proceedings.

United States of America

The financial crisis has seen a move by consumers to cheaper meat cuts and other proteins like chicken. The strong US dollar will impact on their export competitiveness. Cattle in feedlots continue to decline (10.4 million head) with rising costs and uncertain times ahead, cattle producers are offloading higher than usual numbers.

In September 2008, 1.03 million tonne of beef was produced which was up 8% on September 2007 figures. It's expected the USA will produce approximately 12.16 million tonne of beef this year.

The USDA reports that as of 1 July 2008, its cattle herd is down to 104.3 million head which is one of the lowest on record and with the uncertain future, numbers are not expected to increase.

COOL or country of origin labeling

As of 1 October 2008, only cattle born, raised and slaughtered in USA will be able to carry a USA origin label. The new labeling rules will pose problems for Australian manufacturing beef which is widely used in the burger trade with labels potentially reading 'product contains meat sourced from USA, Australia, New Zealand, Uruguay, Canada etc.'

A lot of the other product mentioned does not have Australian traceability and hygiene standards which could impact on our market advantage and price.

Russia

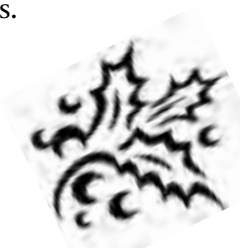
Changing market conditions and financial woes in our 4th most important export market has seen imports of Australian beef go from 17,000 t in May 2008 to 4,400 t in September 2008. South American product has also been back into Russia in significant quantities over the last few months.

Bernie English

FNQ Beef Team, Kairi
ph (07) 4091 9400

Greg Brown

Meadowbank Station, Mt Garnet





Fertiliser use is still essential for beef production

A number of beef producers on the wet coast and Atherton Tablelands have contacted us expressing an intention to reduce or even stop using fertiliser on pastures because of the steeply increased prices. However, efficient fertiliser use is critical to supply of high quality pastures that allow producers to meet market specifications for weight for age, reasonable stocking rates and to provide ongoing protection to the land.

Use fertiliser more efficiently

Soil testing is the best way to develop a cost effective fertilisation program for your pastures. Each sample costs around \$70 but a good understanding of your current nutrient status could save you thousands. A lot of research has been undertaken on the coast and tablelands to understand nutrient requirements for both establishment and maintenance of pastures for beef production so why not use it.

On both the tablelands and wet coast the main nutrient limitations are nitrogen (N), phosphorus (P) and then potassium (K). The latin name for potassium is kalium hence the use of the letter K. Nitrogen can be supplied by using legumes like Pinto peanut or by bag N. If legumes are used then molybdenum also needs to be applied to assist the root bacteria to make atmospheric nitrogen available to the plant. We are going to talk here about phosphorus and potassium. The most common method of measuring available soil P uses a bicarbonate extraction and potassium is measured using an ammonium acetate extraction and the interpretations below refer to those extractions.

On the coast, P is needed if soil P falls below 25 mg/kg

(or ppm) while on the tablelands the level to aim for is 30 mg/kg. If you are around that mark then supplying around 10 kg of P/ha/year will keep you there. If you are well in front of that mark then you can safely stop using P for a year or two before retesting your soil.

Very few increases in pasture productivity have been recorded on the coast and the tablelands when soil K is above 0.20 m.e./100 g and none when soil K is >0.30 m.e./100 g so this is a good number to aim for. Again if you are ahead of the mark you can drop K fertiliser use for a year or two or if you are below the mark then look to supply around 25 kg/ha/year until the level is rebuilt.

Stocking rates are important

Overall stocking rates are going to be critical in determining fertiliser use. On the coast you should be able to easily fatten one beast (450 kg) on 1.5 acres (1.7 beasts/ha) while on the tableland the stocking rate should be around one beast/2 acres (1.2 beasts/ha). If your expectation is that you are going to run higher than this then fertiliser rates would need to be higher.

Work out the cheapest form of fertiliser

Once you have decided what fertiliser needs to be applied then do your sums on the cheapest form of fertiliser to use. A quick ring around for forms and prices of the different fertilisers is where to start. Check how much P or K is in each form and then work out the cost per kg of nutrient. For example, common P fertilisers together with their P content are: DAP (20% P), Triphos (20.7% P) and single superphosphate (9% P). If (say) DAP costs \$1700/tonne then each kg of P will cost:

$$\begin{aligned} \text{Cost per kg P in DAP} &= \text{cost/tonne of fertiliser} \div (\text{P}\% \times 10) \\ &= \$1700 \div (20 \times 10) \\ &= \$8.50/\text{kg P} \end{aligned}$$

When and where to apply

Remember that nitrogen fertilisers are very soluble and should not be applied during the main monsoon season. Apply these in early April or when the monsoon is passed. Potassium is only slightly less soluble than N so the same rules apply. Phosphorus is bound tightly to soil particles so can be applied at any time but practicalities are such that any time between April and December is fine.

Don't apply fertilisers too close to stream banks.

Soil sampling for reliable results

A soil test is a sure way to tell what the nutrient status of your soils is like. But only if the sample you send away is representative of the soil in your paddocks. Here's a way to make sure your soil analysis tells a true story.

You will need to take multiple samples from the paddock which are then combined to make up the sample sent away for analysis. The actual number will depend on the size of the paddock. So, from a 5 ha paddock you might take 10 samples while from a 15 ha paddock you might take 20 samples.

Soil analysis interpretations are done on the basis that the sample analysed is a representative of the soil surface from 0-10 cm. If using a mattock dig a hole from 0-10 cm and then using a garden trowel or similar implement, cut a sample off the face of the hole and place in a bucket. Additional sub-samples are placed in the same bucket until sufficient samples have been collected to make a representative sample. Thoroughly mix all of the collected soil and then pour approximately 1 kg of the soil into a plastic bag. Air dry the sample before sealing and delivery to your preferred agent.

Do's and don'ts

Make sure the bucket used to collect the sub samples is clean. If there is any doubt wash it thoroughly 2 or 3 times to ensure there is no contamination. Your shovel

should also be washed and remember that the back of your ute could also be a source of contamination. Similarly, make sure you use a clean bag to put the final sample into. It is best to use a new bag to ensure there is no contamination.

Don't mix different soil types. So, if you have obviously different soil types then take two samples rather than mix them up into a single one which will confuse results.

Stay away from fence lines, water points, cattle camps or other obvious signs of potential contamination.

Make sure the sample is labelled so that you will recognise exactly where it came from when results are returned.

Interpretation

If you at all unsure of the interpretation of the analytical results consult your agronomist or DPI&F extension officer.

Kev Shaw

FNQ Beef Team, Kairi Ph (07) 4091 9400

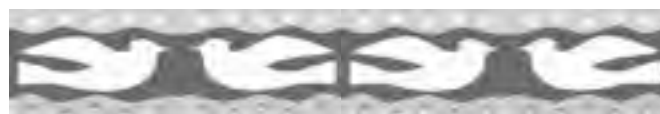
Embrace NLIS for management

NLIS tags were originally introduced to give the Australian beef industry fast, reliable, lifetime traceability of animals to enhance our food safety, assist in control of disease and residue issues, and also satisfy some market requirements such as the EU. This same traceability now gives us an edge over our competitors in numerous export destinations.

However, as well as meeting a regulatory requirement, they can also be used as a useful management tool on your property. With the wide array of NLIS readers on the market and also weighing scales with head units that are able to interface directly with your reader, you can record a lot of information on each individual animal such as weight, age, breed type, lactation and/or pregnancy status etc. So you can make more informed decisions on your herd.

The FNQ Beef Team is currently working with numerous producers in both wet and dry zones using this NLIS technology to calculate accurate reproductive figures on breeder herds. We are also recording production parameters such as LWG and compliance to market specifications to give the producers the feedback to be able to make appropriate changes to management that will increase overall productivity and value of their operation.

Do you know how well your herd is performing?



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Exciting study opportunities with Rangelands Australia

Learning for a future in the bush

Take a look at the 2009 Rangeland Management courses developed by Rangelands Australia and offered by The University of Queensland. Entry is possible without a study background and courses are currently delivered by external and intensive (5-day workshop) modes. Students find the intensive mode a convenient way to manage the demands of study around work and family life. The face-to-face interaction with their peers and learning facilitator is both challenging and enjoyable. Rangelands Australia is working towards offering most courses in intensive mode by 2010.

In Semester 1 2009 the following courses will be run subject to numbers -

- Sustainable Rangeland Production Systems and Regions
- Global and National Trends, Local Scenarios
- Grazing Land Management
- Animal Nutrition and Behaviour
- Advanced Rangeland Ecology (also offered in Semester 2)
- Rangeland monitoring and adaptive management
- Managing self, developing and retaining others.

The Rangeland Australia courses are becoming very popular with 56 students enrolled in the Rangeland program and a further 85 students doing Rangelands subjects. Well over half the students in the Rangeland program are owners or managers of extensive grazing businesses.

For further information please contact one of our rangelands champions:

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suitable for use during the wet season

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Min. Calcium	12.08%
Min. Sulphur	2.90%
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Essential Trace Minerals	

Daily Intake: 50 to 100grams/head/day

CQ Wet Season Loose Mix

A balanced supplement high in phosphorus
suitable for use during the wet season

Analysis:

Min. Crude Protein	2.62%
Min. Crude Fibre	1.77%
Maximum Salt	16.00%
Urea Equivalent	9.68%
Min. Phosphorus	9.98%
Min. Calcium	13.15%
Min. Sulphur	3.74%
Vitamins A, D & E	
Essential Trace Minerals	

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