Queensland **the Smart State**

# Beeftalk

## Taking stock of your future

### Prime news and views for beef producers of south east Queensland

Issue 19 Autumn/Winterr 2005

## in this issue



## editorial

This edition of *Beeftalk* marks the end of its first decade of publication. While many aspects of the industry have changed in that time, the basics of sustainably producing a quality beef product remain the same. We have endeavoured to supply timely and helpful information over the last ten years.

Since the last edition of *Beeftalk* most areas have received some useful summer rainfall. However the rainfall events have generally been storm-based and, as such, patchy. We have also experienced hot, dry conditions between the later rain events, which have had an impact on pasture growth. While grass growth has been average for many areas, runoff events have been minimal and surface storages are far from full.

The national livestock identification system (NLIS) comes into effect on 1 July this year. In this issue of *Beeftalk* there is a timely reminder for producers to source their NLIS devices early to avoid delays in the lead up to 1 July.

Autumn to early winter is usually the time for evaluating the reproductive performance of your breeder herd, for weaning and pregnancy testing. In this issue we have articles on the benefits of yard weaning and methods of pregnancy testing.

It is also the time of year for commencing your dry season supplementation program. In this issue there is an article on a relatively new supplement, dried brewers grain, as well as testimonials from producers who use NIRS dung sampling to help build up a profile of the nutritive value of the pastures their cattle are grazing.

We also have articles on herd health issues, pasture management, spring burning programs and overseas market intelligence.

Our esteemed team leader, Russ Tyler, received a DPI&F Australia Day Achievement Award and, at the time of writing, is recovering from recent surgery (unrelated to the Australia Day award of course!). We congratulate Russ and wish him a speedy recovery.

Russ' prospects for recovery are good, due in part to any early diagnosis. This diagnosis was made possible through regular check-ups. Take the time to read the article on rural health issues.

Good reading!
The Eds

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Queensland Government
Department of Primary Industries and Fisheries

# Plan your burning strategy now

When the winter dry season breaks, usually some time between September and Christmas, there is only a small window of opportunity for burning.

Burning is necessary for many reasons, especially in native pastures and eucalypt woodlands. We use fire to manage pasture composition, reduce weeds (woody weeds in particular), give stock access to green pick, and reduce wildfire hazards.

Generally, when paddocks are in good condition they might need burning only every three to five years. When pasture composition is poor, or regrowth is getting out of hand, the paddock may need burning every year for two to four years until composition improves.

To ensure your burning program for next season is effective, develop a plan during autumn and over the winter months.

By planning early you can adjust stock numbers in a paddock to ensure you have sufficient fuel to achieve the fire intensity you require. If your aim is simply to even out the grazed and ungrazed patches or to manipulate the mix of grasses, you will need a lighter fuel load than if your aim is to reduce woody weeds.

Planning also involves maintaining firebreaks, ensuring fire-fighting equipment is in sound working order, obtaining a permit from your district fire warden, and notifying neighbours and the relevant authorities.

Don't burn your whole property on the first good rain in case follow-up rain doesn't come at the right time to support sufficient pasture growth for stock and ground cover. Develop a priority order of paddocks that need burning, and start with those that are highest priority. Only burn one or two paddocks after each rainfall event until you have sequentially burnt all the paddocks you want to burn.

Burn whole paddocks at a time. Stock can selectively over-graze small burnt areas of paddocks, leading to pasture degradation in those areas.

If you can, reduce cattle numbers in, or completely de-stock, burnt paddocks for a few months following the fire to allow pasture regrowth. This ensures enough forage for stock, allows pastures to recover, particularly after drought, and provides ground cover to prevent erosion.

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# NLIS – No Tag, No Sale

The National Livestock Identification System (NLIS) starts on 1 July 2005. From this date most cattle leaving a property to go to saleyards, slaughter or another property will require an NLIS device. This could be an ear tag or a rumen bolus.

### *The system is being phased in as follows:*

1 July 2005
All cattle moving from your property to any destination, other than direct to slaughter or live export (minimum of 1 deck per line per owner), must have an NLIS device.

1 July 2006
All cattle, except homebred cattle, moving from your property to any destination including direct to slaughter or live export (minimum of 1 deck per line per owner), must have an NLIS device.

1 July 2007
All cattle moving from your property to any destination must have an NLIS device.

### *Ordering and using tags*

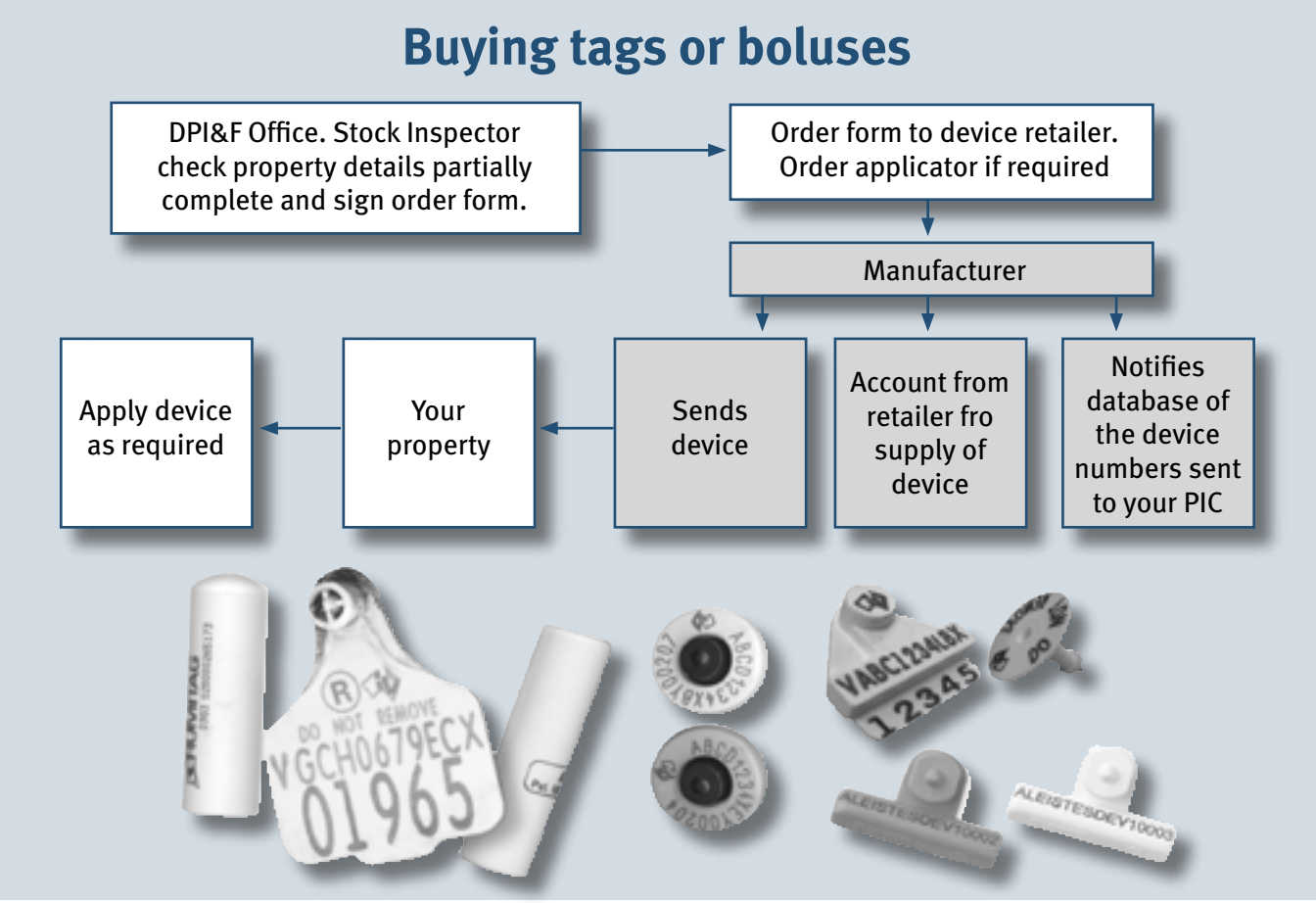
Order forms are available from DPI&F offices. When ordering tags, you will need to supply the stock inspector with your property number (your tail tag number). The stock inspector will check that the information relating to this property number is correct, such as the land parcels associated with the property number.

Currently tags are delivered about one month after they are ordered. As 1 July approaches and the number of orders increases, this lead time is also likely to increase.

The order form has three parts:

- a section for you to complete,
- one for the stock inspector, and
- one for the device retailer, detailing the number and type of devices you require.

The following diagram shows the process for ordering tags:




### *Reading and transferring NLIS device numbers*

When you buy NLIS devices the manufacturer notifies the NLIS database that tags with a particular series of numbers have been sold to a particular property number. You do not need to notify the NLIS database when you actually apply the devices to the cattle.

Generally it is the purchaser's responsibility to notify the database of the transfer of NLIS numbers from one property number to another. This notification must be done within 48 hours of the physical transfer of the cattle.

The following chart shows a range of cattle movements and who is responsible for ensuring the device is read and the NLIS database is notified:

| | |
|---|---|
| To Saleyards | Saleyard operator reads device and notifies the NLIS database that animals have been transferred |
| To Processor | Processor reads device and notifies the NLIS database that animals have been slaughtered |
| To a property you own with a different Property Number | You must read the device and notify the NLIS database that animals have been transferred |
| Paddock sale to another property | Purchaser must read device and notify the NLIS database that animals have been transferred |
| Sent on agistment | You (the cattle's owner) must read the device and notify the NLIS database that animals have been transferred, and again when the animals are returned to the home property |

Further information:

Contact your local DPI&F Office or the Call Centre on 13 25 23.

# Pregnancy testing of cattle

Beef producers can improve the efficiency of their enterprise by better managing reproductive performance in their herds, which has flow-on benefits for marketing, nutritional management and disease control.

Seasonal mating and pregnancy testing are the two main components of reproductive management. Pregnancy testing breeding cows contributes to reproductive management in two key ways: it allows productive animals to be identified, and identifies non-performers for culling.

### *Identifying performers and non-performers*

Scientific and anecdotal evidence shows that fertility is the most economical trait for which cattle should be selected. Estimates vary, but most authorities suggest that 40 to 60 per cent of our selection effort and management practices should be directed toward improving and maximising reproductive performance.

Reproductive rates vary between properties and with seasons. Accurate figures for the whole of the Queensland beef herd are not available but the percentage of cows calving within a 12 month inter-calving interval is thought to be in the range of 50 to 70 per cent.

From a genetic perspective, while reproductive ability may be highly repeatable, it is not highly heritable. If a cow calves early this year, then there is a good chance she will continue to do so in following years. However it does not necessarily follow that her daughters will be early calvers.

Cows that don't provide a calf each year should be sold for slaughter and replaced by cows/heifers that do.

### *Preg status at slaughter*

Unfortunately, abattoir surveys in Queensland indicate that approximately 60 per cent of cows are pregnant when slaughtered. This means a lot of productive cows are being killed whilst many non-productive cows remain in the herd.

At present foetal blood at slaughter provides financially increased returns, but this incentive should not outweigh the best management decisions for the enterprise. In most cases, the owners didn't know their cows were pregnant or weren't aware of the economic losses incurred by selling pregnant females. The value of these losses is difficult to accurately assess, but it probably runs into tens of millions of dollars per year in Queensland.

These economic losses are associated with the reduced reproductive performance of the herd, and the reduced value of the slaughtered animals. Meat quality drops markedly during pregnancy. The further advanced the pregnancy , the more adverse the effects. Pregnant cows are less able to withstand stress and are hence more likely to have a higher incidence of 'dark cutters', lower dressing percentages and lower carcass yields.

### *When to preg-test*

The most convenient time for most producers is at weaning, when it is relatively easy to cull empty cows. Pregnancy testing when cows and calves are yarded for weaning also avoids the difficulties that come with identifying and drafting cows and calves after they have been returned to the paddock. Seasonal mating (where bulls are removed for a certain period of the year) means that all weaning, pregnancy testing, and culling can be completed at the one time, resulting in labour cost savings.

An additional benefit of pregnancy testing at weaning is that non-productive cows can be unloaded from the property before the period of most nutritional stress (i.e. Winter). April through to early June is the ideal time to wean and pregnancy-test cows. In dry seasons, weaning earlier can improve conception rates during the following calving season.

### *Options for pregnancy testing*

The pregnancy status of breeders can be evaluated in many ways, including

- keeping records of cycling activity
- hormone assays of body fluids such as milk, blood or urine
- beta-mode ultrasonography
- real-time ultra-sound devices
- measuring the electrical conductivity of vaginal and cervical mucus
- rectal palpation.

However not all pregnancy testing is accurate. The abattoir surveys mentioned above also revealed that of the cows that had been preg-tested empty by various methods, 38 per cent were in fact pregnant. Almost half of these were in the middle or last third of pregnancy.

None of these testing methods has proven suitable for use in all circumstances. To date the cheapest and most effective method for pregnancy testing cattle in most situations is rectal palpation.

### *Rectal palpation*

Pregnancy testing by rectal palpation is not a simple technique. It requires a degree of skill and there are some risks for the operator and the cow/calf.

Pregnancy testing involves close handling of cattle, which entails some danger for even the most experienced operator.

Pregnancy testing of cows less than 13 weeks pregnant has been known to cause abortions. These losses are minimal if the testing is performed by an experienced operator, but may be up to 10 per cent if performed in a rough manner by inexperienced persons. For this reason all early pregnancy testing, wherever possible, should be done by a skilled operator. Beef producers who are adequately trained are able to safely and accurately pregnancy-test cows that are more than 13 weeks in calf.

Generally, the more advanced the pregnancy, the easier the diagnosis.

For most properties the most convenient opportunity for testing at least 13 weeks after the bulls have been removed is at weaning.

Accurate pregnancy testing which indicates the foetus's age is far superior to a simple pregnant-or-empty decision. Foetal ageing is useful for detecting some reproductive diseases as well as assessing bull function during the mating period.

### *Courses available*

DPI&F's Beef Breeding Services (BBS) conducts Fertility Management Schools throughout Queensland. These are conducted on a contract basis for various industry bodies such as the Agricultural Colleges, breed societies and local producer groups.

Courses have already been scheduled for the Emerald Agricultural College in May, June and July 2005. These courses are open to all cattle producers.

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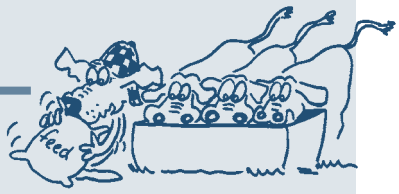
# Dried distillers grain




Distillers grain is a by-product of beer and ethanol production. For many years it has been available in the 'wet' form and has been used mainly by dairies close to the breweries, because the high moisture content (about 75%) meant it was impractical to transport it further afield.

This product is now available dried and bagged, making it much easier to transport. Its nutrient level is approximately 11-12 MJ ME/kg with 28% protein. The fermentation process reduces grain starch levels but concentrates other non-fermented nutrients such as protein and fat. These reduced starch levels make it safer to feed than grain.

During the 2004 winter and spring, staff at the Brian Pastures Research Station fed grazing beef cattle with dried distillers grain in fortified molasses mixes. At the time the cost of the dried distillers grain was $350 per tonne.

The ration used was

- molasses 90%
- urea 3%
- dried distillers grain 7%.

The mix was fed to first- and second-calf cows at the rate of 3 kg/h/day twice weekly. While there was no comparison group fed with a conventional mix including a protein meal such as copra meal or cottonseed meal, the cows held weight as would be expected on more conventional supplements.

Points to note:

- Cattle ate the supplement readily.
- We were satisfied with the performance of the cattle.
- Regardless of how long the ration was mixed, it appeared frothy and the 'grain' tended to 'float' to the top.

In a second observation dried distillers grain was fed on its own to steers at the rate of 1 kg/h/day twice weekly (that is, 3.5 kg on each feeding day).

These steers had been fed protein meal in a trough in the paddock for 12 to 18 months before this observation began, so they were familiar with eating from a trough. Unfortunately rainfall and the cattle chasing green feed disrupted the collection of meaningful performance data, but the following observations were made:

- The steers took to the supplement very readily.
- The entire supplement was eaten on the day it was fed.
- None of the animals experienced acidosis, which may have been expected in animals fed grain.

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# Annual breeding and animal management checklist

Here is a quick reference list for keeping your breeding and management calendar on track. This list combines information from 'Timely Tips' with references to articles in this and previous editions of Beeftalk that provide more detailed information.

## Autumn (March, April, May)

- Confirm your registration and property details in the Agricultural Property System (DPI&F) are correct and complete.
- Make sure you have adequate NLIS devices available for animals you intend to sell after 1 July 2005.

### *Bulls*

- Remove bulls from breeders.
- Check bulls for physical problems (legs and feet for injuries, stiffness, lesions, cuts or swelling; check penile sheath and structure).
- Cull bulls for age, temperament or physical defects.

### *Breeders*

- Pregnancy test. Cull empty breeders and for poor temperament, age or defects.
- Note cows with below-average weaners for possible culling.
- Assess need for supplementation.

### *Growing cattle (steers and cull heifers)*

- On track to meet target markets? If not, why not? Assess options (sell, supplement, feed availability).

### *Weaners*

- Vaccinate:
  - 5-in-1 or 7-in-1
  - tick fever (in ticky areas).

NB: If possible, plan to administer tick fever vaccines at different times from other vaccines to maximise their effectiveness (refer to 'Timing your tick fever vaccinations' in this issue of Beeftalk).

- Wean before pastures are frosted to allow cows to 'pick up' before winter.
- Weaners heavier than 150 kg need special attention.
- Educate weaners through the yards (yard wean, 5 to 10 days) and to feed.
- Consider application of NLIS devices.

## Winter (June, July, August)

### *Bulls*

- Consider bull requirements for coming season (review articles in *Beeftalk 16*).
- Assess current herd bulls (review 'Annual checklist for Bulls'in *Beeftalk 18*). Are your bulls giving you the progeny you require?

### *Breeders*

- Vaccinate for leptospirosis.
- Assess mating program and plan/make changes where necessary (refer to 'Assess your current mating program' in *Beeftalk 17*).

### *Growing Cattle (steers and cull heifers)*

- On track to meet target markets? If not, why not? Assess options (sell, supplement, feed availability).

## Spring (September, October, November)

### *Bulls*

- Talk to potential suppliers about your bull requirements and the information they have available on their sale bulls.
- Look at BREEDPLAN figures (EBVs) for a range of traits e.g. fertility, growth, carcase, temperament etc and identify those bulls that meet your requirements.
- If gene marker information is available look for opportunities to utilise this information in your selection.
- Use Sire Summaries (Group BREEDPLAN EBVs) to compare bulls across her ds within a breed. This information is published on breed society websites or you can request a hardcopy from the Breed Society.
- Check dam information, e.g. age at first calving, calving interval.
- Check purchased bulls are in working condition, not sale condition (remember that over-fat bulls can be sub-fertile and excess strain can be placed on the legs and spine).

- Check all bulls for soundness (reproductive and physical) – remember the Bull Breeding Soundness Evaluation. Check for injuries, stiffness of gait, cuts or swelling and signs of three day sickness.
- Cull bulls with any defects.
- Vaccinate bulls for three day sickness and vibriosis (2 doses one month apart initially and the annual booster).

### *Breeders*

- Assess breeder condition for mating. Heifers and first calf cows may need extra care. Are cows cycling?
- Vaccinate maiden heifers for vibriosis (2 vaccinations 4 to 6 weeks apart).
- Vaccinate maiden heifers for leptospirosis if a problem has been diagnosed (2 vaccinations 4 to 6 weeks apart).
- Check calving cows, especially heifers, regularly.
- Record all cows and heifers that have calving problems and sell them and their calves as soon as practical.

### *Other*

- Check mating paddocks are secure.
- Put bulls out with breeders:
  - Mate heifers one month before the main herd where nutrition is adequate.
  - Mate young bulls with young cows.
  - Avoid mixing bulls of different ages if possible.

## Summer (December, January, February)

Growing cattle (steers and cull heifers)

- Weigh. Assess individually rather than on average (assess options for poor performers).
- Consider HGP implants for steer calves for non-EU sale.

### *Calves*

- Brand, dehorn, castrate, tag and vaccinate (5-in-1 or 7-in-1).
- Enter new calves onto herd performance recording program.
- Consider application of NLIS devices.

Further information:

The following publications provide detailed information on breeding and management:

*Bull selection, Female selection in beef cattle*
*Breeding for profit, Beef cattle recording and selection.*

These publications are available from the DPI&F bookshop on 13 25 23

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# CRC for Beef Genetic Technologies

On 20 December 2004, the Federal Minister for Education, Science and Training, Dr Brendan Nelson advised that the renewal bid for a CRC for Beef Genetic Technologies was successful.

Commonwealth funding totaling $30 million over 7 years commencing 1 July 2005 was approved. There are 19 national and international participants in the CRC which has some $45 million cash from the Commonwealth and other major cash investors including Meat and Livestock Australia, Meat and Wool NZ and the Australian Lot Feeders' Association.

DPI&F will benefit through involvement in many collaborative projects with Commonwealth funding through the CRC and other funding from other external sources. As our contribution, DPI&F will provide in-kind resources totals amounting to $10 million over 7 years for staff, facilities and use of research stations for experimental cattle.

DPI&F research and extension officers will be involved in developing and delivering commercial products and strategies to increase feed utilization efficiency, methane production, reducing parasite control costs and enhancing cattle welfare. Other major areas of focus will be to identify DNA tests to select for improved re-conception in lactating females and reduce the age of puberty in heifers. Better predictors of bull fertility in their male and female progeny will be identified and validated by 2012.

The cost/benefit analysis of the bid indicated a large return on the R,D&E investment and substantial returns to Queensland.

# Pasture renovation

Pasture renovation, such as deep ripping, blade-ploughing and lighter cultivation, can improve pasture growth. It does so in two ways: halting pasture 'run-down' and improving soil structure.

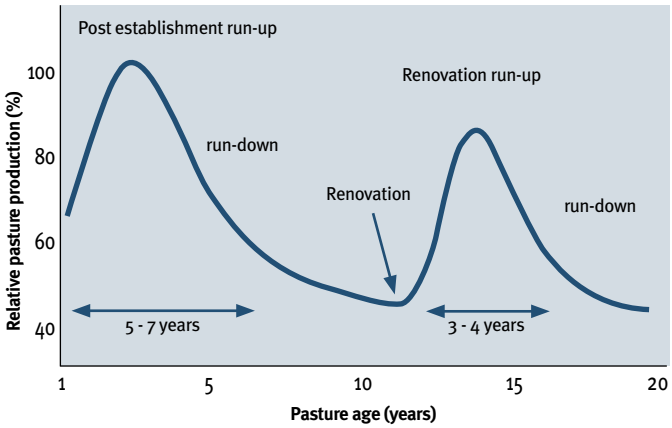
However, the pasture 'run-up' following renovation is never as good as when the pasture is first established, and any improvement in pasture growth and carrying capacity can be negated by the cost of the renovation. Furthermore, it is pointless to use renovation to improve degraded land without first addressing what's causing the degradation.

### *Pasture run-down*

In Beeftalk 12 (page 10) we discussed sown pastures as a development option. Sown pastures can improve productivity, offer flexibility in a beef enterprise, and are an option for improving land condition. The major drawbacks with sown pastures include their cost, the risk of failed establishment, and pasture 'run-down'.

Nitrogen (N) is an essential nutrient for plant growth and is used by plants to build protein. Much of the nitrogen in soil is bound to soil organic matter in a form that plants can't use. In a typical forest soil there may be as much as 6000 kg/ha of total soil N in the top 50 cm of soil. Only a very small amount of this – as little as 20 to 50 kg/ha – is mineralised (released) each year into a form plants can use. Ploughing the soil to plant a new pasture increases the levels of available N to as much as 100 kg/ha or more (the amount of extra N released is roughly equivalent to 2 to 4 bags of urea). The grasses you sow then take advantage of this elevated fertility and grass production increases; this is referred to as 'pasture run-up'.

### Pasture productivity response to renovation




However, following pasture establishment the available soil N once again becomes bound to the soil organic matter. This is referred to as 'pasture run-down'. In our forest soils, this can occur in five years. In more fertile scrub soils it may take 10 to 20 years; in a poor forest soil as little as 2 to 3 years.

Renovation works in the same way as the original cultivation; it releases some of the unavailable N. However the pasture response is never as good as it was following establishment. At best it is about 80 per cent of the original pasture run-up, and the resulting run-down occurs more rapidly.

Renovation costs can vary between $60/ha and $200/ha, depending on the equipment used and the severity of the renovation. The more severe the renovation, the better the response.

This cost needs to be compared with other options for managing run-down. These include

- applying fertiliser
- establishing a legume
- fire, and
- doing nothing (accepting the reduced carrying capacity).

### *Improving soil condition*

Cultivation or ripping can improve soil structure by increasing water infiltration, incorporating soil organic matter and aerating the soil. Excessive cultivation can also destroy soil structure.

In pasture, the symptoms of degraded soil structure include

- bare ground between grass tussocks
- eroded areas (sheet or gully erosion)
- hard 'pans' (areas that set like concrete)
- reduced soil organisms.

These symptoms of poor land condition are often the result of persistent heavy grazing. When the forage demand of the grazing animals is not effectively matched with the forage supply, pastures are overgrazed.

Renovation by itself is a bandaid solution, the economics of which are questionable. Renovation (and even pasture establishment) to improve soil (and land) condition must be accompanied by improved grazing management. If it isn't, the pasture will quickly return to its degraded state.

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# Yard weaning improves feedlot performance

The beneficial effect of good weaning management on subsequent feedlot performance has been reaffirmed by the Cooperative Research Centre for Cattle and Beef Quality (CRC) with research on the effects of yard weaning, vaccination, and yard training. Although most Queenslanders are already gaining the benefits of good yard weaning, not all parts of Australia do so.

Besides the familiar benefits of having quieter cattle that are easier to muster and handle, good yard weaning also promotes cattle that go onto feed faster in feedlots, have less illness, perform better and give more tender beef:

- Research shows that cattle weaned in the yards onto hay or silage for 5 to 10 days adapted more quickly to the feedlot environment.
- In one trial yard, weaned cattle grew 28 per cent faster over a 78-day feeding period, giving approximately a $25 advantage.
- Vaccination against respiratory disease given two to four weeks prior to feedlot entry also significantly improved weight gain in all treatments.
- Yard training had no economic effect in the feedlot, but the training may provide an opportunity for identifying animals that are more likely to perform poorly.

### *'Calm' cattle versus 'nervous' cattle*

The researchers also measured the performance benefits of having calmer cattle in the feedlot compared with nervous cattle.

From the yard weaning experiment, two groups of animals were chosen to differ as much as possible in temperament and feedlot preparation. Cattle's desire to flee (and therefore ability to cope with novelty) was measured using flight speed from a crush after routine handling. This was done by measuring the time taken to pass between two electronic sensors about 1.7 metres apart positioned immediately beyond the bead bail. (For more information on flight speed and the benefits of good temperament on meat quality, see 'Simple, indirect selection for beef tenderness', Beeftalk 13.)

The nervous group had the fastest flight time (average 0.78 seconds) while the calm group were much slower out of the crush (average 1.85 seconds). Both groups had averaged 0.4 kg daily liveweight gain on pasture over the six months before entering the feedlot.

The nervous group grew more slowly than both the calm group and the rest of their group of origin (the rest of the paddock-weaned group). The calm group's growth was not significantly different from the rest of their yard-trained group.

Significantly, none of the calm animals was removed for sickness during the feeding period, while five of the nervous group (42 per cent) were removed to the hospital pen at some time.

Social interaction (e.g. head bunting) by the nervous animals during the early feeding period was also less than half that of the calm group.

This work indicates that while most cattle readily adapt to the feedlot, some have difficulty and could be identified and selected out before reaching the feedlot.

To make genetic improvements in temperament, genetically quieter bulls need to be identified. This is not so easy due to the masking effects of handling. Flight time records can have a role here and will be of greatest benefit when incorporated by bull breeders into BREEDPLAN EBVs (estimated breeding values). Ask bull breeders for flight time EBVs, and they may become more available sooner rather than later.

Yard weaning and early weaning also provide huge benefits in terms of breeder condition, survivability, fertility and female sale income, but that's a story for another article.

Reference: Producing and processing quality beef from Australian cattle herds – Industry outcomes of the Cooperative Research Centre for the Cattle and Beef Industry (Meat Quality) 1993–2000. P. Dundon, B. Sundstrom, R. Gaden.

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***Growth rates (kg/day) of calm and nervous cattle in the feedlot***

| Time on feed | Calm group (12 head) | Rest of yard-trained group (88 head) | Nervous group (12 head) | Rest of paddock-weaned group (88 head) |
|---|---|---|---|---|
| 37 days | 1.46 | 1.46 | 0.95 | 1.22 |
| 78 days | 1.46 | 1.39 | 1.04 | 1.20 |

# NIRS – Producers survey outcomes

Over the past two years 140 beef producers throughout Queensland have been involved in a project to field test the NIRS (Near Infrared Reflectance Spectroscopy) technology. These producers submitted dung samples every one to two months for the duration of their involvement.

In December we asked these producers what they thought about NIRS and how they had used the results in making decisions about managing their cattle.

More than 75 per cent of the producers saw the NIRS results as very useful for

- managing drought strategies
- knowing when to start supplementing
- selecting the right supplement
- modifying a supplement program to meet the nutritional needs of the animals.

Almost all the producers involved (93 percent) said the NIRS results gave them a better understanding of the nutritional value of their pasture at the time of sampling.

Using NIRS results to manage supplementation programs

Protein is usually the first nutrient to become deficient as pastures dry and mature – usually in April to June depending on the season. Sampling during these months will show when protein levels fall below that required to maintain liveweight, usually at 5 to 6 percent.

Sampling again in July/August will show when energy as well as protein is deficient and thus reveal when supplementing with protein only will give little, if any, response.

*Beeftalk 18* has information on how to collect and package dung samples for NIRS testing.

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# Australia Day Achievement award

The significant contribution to Queensland's beef industry by Russ Tyler, a well-known inland Burnett identity, was recently highlighted with his receipt of an Australia Day award. Russ was among ten DPI&F staff to be recognised with an award known as the Australia day Achievement medallion.

Russ, who is based at Brian Pastures Research Station near Gayndah, has been involved with the beef industry since he entered the department in 1968. During his career he has worked at Ayr, Theodore, Toowoomba, Mount Isa and Gayndah.

Russ has been involved in the production of Beeftalk since its inception ten years ago and has been the editor for the past three years. He is closely involved in the development of the Nutrition EDGE workshop and now leads its delivery which highlights the excellent working relationship he has with Meat & Livestock Australia.

Russ has had a lengthy involvement with the Gayndah Show Society and acted as its chief steward prime cattle section for the past decade. He has been involved in many other community organisations including president and trainer of the local pony club and he is an active member of a local church group.

Russ is widely known for his no nonsense, outcome orientated leadership and personal work style. His ability to problem solve and deliver under trying circumstances has earned the respect and admiration of clients and colleagues alike across the state.

Congratulations Russ!

# NIRS – Producers' stories

*In 2004 we submitted monthly NIRS samples from breeders in a native pasture paddock and bullocks in a cleared softwood scrub paddock sown with buffel. I found the results very interesting and plan to do some more sampling this summer to become even more familiar with the process.*

*I think NIRS is a very valuable part of our tool kit. It is relatively simple to use as anyone can collect and package the samples. The beauty is that it does not require any handling or stress for the cattle and appears to be quite accurate.*

*I found it helpful in assessing the pasture as it began to decline in value. We were able to use this information to affirm our supplementary feeding decisions and our weight gain predictions for our bullocks. It was also interesting to observe how much herbage and browse the cattle were eating.*

*I do not believe NIRS sampling replaces careful observation of your cattle, but in situations where you cannot closely monitor your stock it could be an invaluable tool.*

*I find the main limitation of NIRS at present is the long lag time between sampling and receiving results, but I am sure this would improve if NIRS became commercially viable.*

*In using NIRS I think we have learnt quite a lot about pasture quality and how it relates to production. Sampling is simple, which makes the process a wonderful adjunct to observing the herd and charting short-term management decisions.*

***Kylie Schooley, 'Rocky Springs', Hawkwood (Mundubbera)***

*We have been using NIRS at our Colinton and Johnstown properties for 6 months and have found the predicted weight gain/loss to be very close to the actual monitored weights.*

*We have sampled typical native pastures comprised of speargrass, bluegrass and kangaroo grass at two sites 100 kilometres apart. These pastures contained the same species but in very different proportions. Surprisingly the sample results have been comparable. As a consequence we will maintain regular testing at Colinton and sample at Johnstown on a needs basis.*

*Having done an 'Edge' Nutrition Workshop presented by DPI&F we were particularly interested in improving our skill in visually assessing pasture quality, and NIRS gives us the opportunity to have hands-on experience in our environment.*

*Early knowledge of pasture quality, particularly nutritional decline, is very helpful in timing the implementation of management options and also in assessing whether the specifications of the target market are achievable. We also intend to test the validity of some options for improving pasture quality by*

- *sampling paddocks that have and have not been burned in the same season,*
- *looking at the response to fertilising,*
- *monitoring the effect of introducing a legume to native pasture,*
- *appraising the ingredients mix and benefit of supplements, and*
- *building a database based on NIRS data to help us better predict cattle performance during the growing season.*

***John and Cherry Westaway, 'Sarner Alp', Colinton (Brisbane Valley)***

# Pasture management summarised

Over the past ten years there have been numerous articles in *Beeftalk* about pasture management. We've covered everything from pasture species, grazing management, forage budgeting and grazing systems through to land condition and its impact on productivity.

You know you are managing your native pastures pretty well when you come out of a dry season, no matter how bad, with stubble on the ground. If you can do this, your grandkids will be able to earn a dollar from these pastures in future years.

### *Grazing ecosystem*

If you are in the grazing industry then you are more than just a beef producer: you are an 'ecosystems manager'. It's a trendy sounding term, but it's basically what you are. Everything you manage on your property (and a fair bit of what you can't manage) is part of an ecosystem. This includes

- soils (different quality soils, soil microbes and invertebrates)
- climate (rainfall, variability, ENSO, drought)
- plants (grasses, herbage, trees, weeds)
- animals (livestock, native animals, feral animals)
- community and society in general (resource management perceptions and expectations)
- and you (your need to make money and look after your land).

How efficiently this ecosystem turns sunlight and rainfall (through photosynthesis) into kilograms of beef is partly due to how productive your land is (its inherent fertility) and partly due to these three 'gateways' (see diagram below):

- land condition
- pasture utilisation, and
- feed conversion efficiency.

### *Land condition*

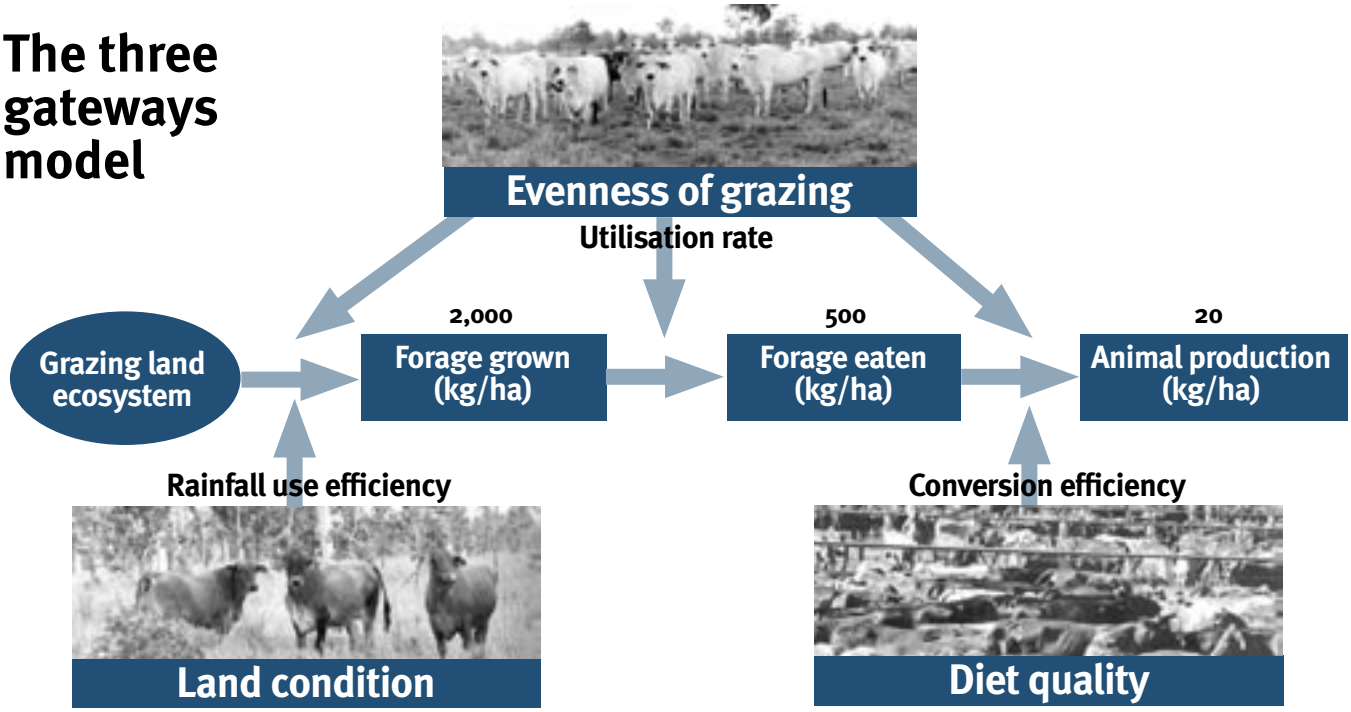
Land in poor condition will grow less than half the useful forage (given the same amount of rainfall) as when it is in good condition. Land is in good condition when it has a good coverage of 3P grasses (Palatable, Productive and Perennial), has few weeds, shows little sign of soil erosion or scalding, and the woody weeds are in check.

Land that only grows half of its forage potential is not very efficient at converting sunlight and rainfall into forage and, hence, beef. It is probably not giving you a very good return on investment either.

Land condition can be maintained or improved through

- effective grazing management (safe utilisation rates, grazing systems, pasture spelling)
- strategic use of fire
- sown pasture development
- woody regrowth control
- weed management.

## The three gateways model



### *Pasture utilisation*

The proportion of annual forage growth that is eaten by livestock is called the utilisation rate. A low utilisation rate means the conversion from forage to beef is inefficient. A high utilisation rate may lead to short-term increases in animal production per hectare, but does so at the expense of individual animal performance. Continually high utilisation rates over several years will lead to a decrease in land condition and a consequent reduction in forage growth.

For native pastures in southeast Queensland, utilisation rates of between 20 and 30 per cent are considered to be sustainable. Sown pastures can be sustainably utilised at slightly higher rates of 30 to 40 per cent.

The forage that is not eaten by your livestock is not wasted. It plays a very important role in providing soil microbes (the unseen workers in your grazing ecosystem) with a source of energy and nutrients, and it also provides ground cover that protects the soil surface from the damaging effects of sun, wind and rain.

The utilisation gateway is managed by matching forage availability to forage demand and by setting or adjusting stock numbers accordingly. This includes allowing for other grazers (feral and native animals, termites) and ground cover. The aim is to always come out of a dry season (including a drought) with stubble on the ground.

You can use infrastructure (fencing and watering points), grazing systems and/or fire to regulate when and where cattle graze, to manipulate pasture health and composition.

### *Feed conversion efficiency*

Feed conversion efficiency is a measure of how efficiently a beast converts the forage it eats into beef (or milk production). The class of animal and its genetics play a role, but the important factor is the quality of the forage eaten.

Forage quality varies between forage species. Leafy grasses, such as the 3P grasses, are more digestible and higher in energy than stemmy grasses; legumes are higher in protein than grasses. Within a grass tussock there are differences too; leaf is better quality forage than stem.

The largest determining factor of forage quality is the stage of maturity. Fresh growth (such as just after the spring/summer break) is much higher in energy and protein than mature material (such as in July and August).

As ecosystem managers you manage this gateway by

- ensuring land is maintained in good condition (i.e. the desirable plants are not grazed out),
- establishing high quality plants such as legumes in the pasture
- setting appropriate stocking rates (high stocking rates force animals to eat the poor quality plants and the stemmy parts of the good quality ones), and
- supplementing to overcome nutritional deficiencies when it's economical to do so.

### *Remember*

The land you manage is a complex and diverse ecosystem. Keeping it in good condition ensures this ecosystem functions efficiently. You use management 'tools' such as infrastructure, grazing systems, fire, sown pastures, woodland management and weed control to maintain or improve land condition.

If you can always come out of a dry season, no matter how bad, with stubble on the ground and a few dollars in your back pocket, then you're doing OK.

Further information:

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*Email: bill.schulke@dpi.qld.gov.au*

or

***Col Paton***
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*Email: col.paton@dpi.qld.gov.au*

# Respiratory disease vaccines reduce feedlot costs

Bovine Respiratory Disease (BRD) causes between 50 and 90 per cent of all sickness and deaths in Australian feedlot cattle. It is estimated to cost the industry approximately $60 million a year in treatment costs, wasted feed, reduced weight gains and deaths. It is most common in the first four weeks after entry to the feedlot.

BRD is caused by exposure to a range of viruses and bacteria such as those listed in the table. Stress, which reduces immune response to these organisms, can increase the incidence of the disease. Exposure to viruses and bacteria and the unfamiliar environment of a feedlot can overwhelm an animal's natural defence mechanisms, leading to the development of respiratory disease. In some cases up to 50 per cent of the cattle in a pen may be affected, and death rates up to 5 per cent have been reported. These viruses and bacteria rarely cause serious illness in cattle in their natural surroundings.

### *Two new vaccines*

Beef CRC researchers have developed two new vaccines for respiratory disease that have dramatically reduced illness and losses in feedlots. 'Rhinoguard' protects against the virus IBR (Infectious Bovine Rhinotracheitis). It is administered as a spray in the nose. The other vaccine is for the bacteria Mannheimia haemolytica and is called Bovilis® MH.

### *Reducing BRD involves:*

- Minimising stress so that cattle quickly eat, drink and adapt to the feedlot environment (e.g. good yard weaning, direct sale, background in groups prior to entry, not mixing groups within one week of entry)
- Not sending highly susceptible cattle to the feedlot (see article about yard weaning and nervous cattle)
- A robust immune system (i.e. good health, low stress, vaccines)
- Early identification and treatment in the feedlot.

Further information and references:

'Controlling Bovine Respiratory Disease in feedlot cattle', MLA Tips and Tools. www.mla.com.au or 1800 023 100

The Cooperative Research Centre for Cattle and Beef Quality, http://www.beef.crc.org.au or 02 6773 3501.

*Factors influencing onset of Bovine Respiratory Disease (BRD)*

| Stress | Infectious agents |
|---|---|
| • Weaning<br>• Saleyards<br>• Transport<br>• Injury<br>• Dehydration<br>• Mixing of cattle<br>• Confinement and pen competition<br>• Pen 'add-ons' and movements<br>• Handling<br>• Heat and cold<br>• Dust<br>• Feed and water changes | ***Viruses***<br>• IBR – Infectious *Bovine Rhinotracheitis* (Bovine Herpes Virus 1)<br>• BVD – Bovine Viral Diarrhoea (Pestivirus)<br>• BRSV – Bovine Respiratory Syncytial Virus<br>• PI3 – Parainfluenza Type 3 Virus<br>***Bacteria***<br>• *Mannheimia haemolytica* (previously called *Pasteurella haemolytica)*<br>• *Pasteurella multocida*<br>• *Haemophilus somnus* |

overseas snippet

# South America – The competition hots up

We often hear market analysts speak of the threat to our beef markets from South American countries, but how real is this threat? Their problems with foot and mouth disease (FMD) have worked in Australia's favour, preventing these countries from accessing Australia's high value markets of Japan, United States (US) and Korea. However the potential value of exporting to these high value markets is motivating South American countries to address their disease issues.

The following information comes from Meat and Livestock Australia (MLA) publications. Many of MLA's publications are free or discounted to MLA members, and all beef producers are eligible to join at no cost. Anyone can also receive free 'MLA Market News' emails from MLA.

### *Brazil*

Currently Brazil does not export to Australia's main markets but it is taking market share from Australia in the Philippines and Singapore with a view to expanding into other markets. It is predicted that Brazil could access the US market by the end of 2005.

Brazil has a herd of 165 million cattle (six times the Australian herd) and this is expected to increase. While only exporting 16 per cent of its production in 2003, Brazil is expected to overtake Australia (63 per cent exports) as the largest beef exporter. Its main competitive advantages are low costs of production, competitive currency, improved genetics and aggressive marketing. Cattle prices in 2004 were estimated at 62cUS/kg liveweight.

Their competitiveness is demonstrated by their supplying 145,000 tonnes of beef to the European Union (EU) at full tariff above their quota of 5,000 tonnes.

Brazil has already embarked on an animal identification scheme to ensure access to markets.

To handle FMD, a vaccination program has been implemented. While occasional outbreaks still occur, Brazil has been successful in having their regional zones accepted by the Organisation International des Epizooties (OIE), the international organisation that determines a country's disease status. Brazil's progress in eradicating FMD is also closely monitored by the US Department of Agriculture.

### *Argentina*

Argentina has struggled to successfully implement their FMD vaccination programs, but it exports 14 per cent of its total production. Fifty million head of cattle and an average domestic consumption of 60 kg per person, low reliance on exports, a competitive exchange rate and cattle prices estimated at 68c US/kg liveweight make Argentina a threat if it gains access to our markets.

FMD means Argentina does not directly compete with Australia. The country has a vaccination program to control FMD, and proposed changes to the OIE could see meat from vaccinated animals exported to countries currently requiring 'FMD free without vaccination status' – opening up Australia's valuable north Asian markets to Argentina.

### *Uruguay*

Uruguay has been the most successful of the South American countries in containing FMD and accessing the high value North American market. With a herd of 10 million head, Uruguay was given access to the US market in July 2003, consequentially increasing cattle prices to 90c US/kg liveweight.

Uruguay highlights the impact these countries could have on Australian exporters. Uruguay has a US quota allocation of 20,000 tonnes, but in 2004 it was expected to ship in excess of 120,000 tonnes, paying the 26.4 per cent tariff but still trading at a cheaper rate than equivalent Australian 90 CL (chemically lean) pr oduct.

### *What's it mean to me?*

South America is coming closer to accessing Australia's export markets. When this occurs the pressure will be on our industry to either compete or differentiate our product to a higher value market. The challenge is, how?

Further information:

MLA web site www.mla.com.au or 1800 023 100

or

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*DPI&F, Yeerongpilly*
*Phone: 07 3362 9543*
*Email: vince.edmondston@dpi.qld.gov.au*

# Beefs of a country doctor

People on the land could help their doctors help them by taking a proactive approach to their health. Health is like most problems – the sooner it's seen to, the cheaper the fix. Think of your health as an issue that requires attention, not something to ignore and hope it goes all right.

Most rural people are so busy with their properties they do not get to see their doctors often enough. As a consequence, the health of rural Australians is several notches lower than that of their city cousins. Death rates from accidents, heart disease, cancer, and diabetes complications are higher in the bush than in the city.

Here are a few suggestions to start improving your health.

### *Annual check-ups*

All country people over 40 should book a specific visit to their GP for a general check-up once a year. This will often take half an hour for a complete top-to-toe check. Checking your blood pressure and cholesterol may seem less important than drafting off the weaners, but that's where a lot of lives are saved. Allocate the time, and make sure you have your annual check-up.

### *Protection from the sun*

Protection from the sun is a big issue in Queensland. We get more UV radiation on a Queensland winter's day than Melbourne people get on a summer's day. I'm only one GP in town, but I've treated over 70 people with malignant melanoma in the past 15 years, as well as countless less aggressive skin cancers. Multiply that by all the towns in Queensland, and you get some idea of the scope of the problem. It is not just the beach where people need to be careful; it's also the bush. Make sure you are protected from the sun.

### *Q Fever*

Q fever is a particular risk for rural people who handle livestock. Infection with Q fever can cause serious fever and debility lasting weeks or months. Even worse, Q fever can damage your liver, joints and heart valves. Think about what just sitting in a chair for two months would mean for your finances. This has happened to patients of mine.

Protection is simple. One Q fever immunisation lasts a lifetime, but it needs to be given by a doctor experienced with the testing that needs to be done before a shot can be given. Beef producers should all be immunised against this disease. Check with your GP. If they don't do the test, chances are they will know who does.

### *Hearing*

Hearing protection is a particular concern of mine. Many people still do not realise how little noise it takes to lose your hearing for good. Power tools, shooting, tractors, even cabin noise in many trucks can be enough to cause deafness later in life. Ear plugs or ear muffs can go a long way to help.

### *Health and safety education*

Farm workers still have a high risk of injury and death due to accidents. A good place to start is to educate the youngsters about safety on the farm. Your GP should be able to get a copy of the Giddy Goanna books, which educate kids in a fun way about safety issues.

*If I was to give one bit of advice to all beef producers, it would be to think of health as an issue that needs attention, not something to ignore and hope it goes away. Apply a bit of time and effort, and see your GP for a check.*

Life as a doctor in a small Queensland town provides a rich and varied life. Don't get the wrong idea about 'rich'. There are easier and quicker ways to make your fortune, but none so satisfying in my opinion. We don't have the bright lights and the movies, but we do have compensations like the great people and the clean crisp dawns.

My town of Maleny is changing, like many in Queensland. Traditional agricultural land use over the last hundred years is giving way to subdivision, hobby farming and tourism, but the steadfast dairying families are still here. Beef cattle production is also increasing as the economics of dairying in a deregulated environment demand new thinking.

My working day starts with hospital rounds. I am a private GP, one of four in town with hospital rights. The workload is challenging and diverse. In the last month I've cared for a bloke with blood clots in the lungs and a woman with blood poisoning, along with the other less dramatic stuff. Arranging appropriate diagnosis and treatment rapidly and efficiently keeps you on your toes. Unlike larger hospitals, at Maleny hospital there is still room for older people to convalesce if they aren't 'big sick' but they're still too ill to go home.

Like other small rural hospitals I've worked in, the sheer quality and skill of the nursing staff is very evident. They have immense practical knowledge. When the phone call comes in the middle of the night, it's good to know the person you're talking to, and to know they're on the ball.

However the value of small hospitals is questioned in some circles. Certainly Queensland Health seems to be closing down services, with the idea that country people should travel to larger regional centres for all but 'first aid' care. The truth is that small hospitals provide very good care as well as value for money for the community. Often your own doctor will be the one caring for you, and what they already know about your health puts them a step ahead when deciding on the diagnosis and treatment. The value of keeping people in their own town, close to family, is self-evident. If a family member's illness takes the whole family to the big smoke, the cost in terms of travel, accommodation and lost production can be immense.

After hospital rounds, it's off to the surgery for a typically 10 to 11 hour day. General practice is the boiler room of health care in this country, where preventative care and management of most health problems takes place. You never know what will walk through the door next. It could be a skin cancer one visit and a person with asthma the next. The range of problems faced by a general practitioner is immense, and the skills to manage these problems take time to acquire.

Further information:

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*Email: jmoutridge@bigpond.com*

*The Beeftalk team is grateful to Dr Outridge for taking the time to write this article.*

# Burnett Mary Regional Group – enhancing Natural Resource Management

The Burnett Mary Regional Group (BMRG) is a community-based organisation established to work with and support the community to address land and water management issues.

The BMRG is responsible for implementing the National Action Plan for Salinity and Water Quality (NAPSWQ) and the Natural Heritage Trust (NHT2) to improve the state of natural resources in the region. To achieve these outcomes the BMRG is seeking to develop partnerships with a range of industries, community groups, local government, and landholders across the region.

The grazing and beef industries play a vital role in managing the natural resources of the Burnett Mary region. Grazing alone accounts for approximately 70 per cent of land use in the region. Similarly, intensive livestock and processing facilities have the capacity to impact on natural resources and especially surface and groundwater quality.

The BMRG has been working with DPI&F and grazing landowners in the Monto Creek and Munna Creek regions to adapt the Grazing Land Management (GLM) education packages to the Burnett Mary region. The EDGEnetwork's GLM education package assists land managers to evaluate their grazing operations and provides tools to enable better management choices. The BMRG is also developing partnerships with beef producers, processors and industry representatives from across the region.

Partnerships to deliver improved property management, soil health, weed and pest control, salinity management, water quality, riparian management and equitable water access are just some of the projects proposed under the Burnett Mary NRM Plan. Without the support, involvement and knowledge of the beef industry, many of these important projects may not be realised.

Becoming a member of the BMRG is an opportunity for producers, processors and industry representatives to take an active role in defining the future of your industry and in managing your region's natural resources.

Further information:

Contact the BMRG's Bundaberg Office on 07 4132 8333 or visit the website at www.burnettmarynrm.org.au

new product

# Pestivirus vaccine is now available

A vaccine called Pestiguard has been developed by the Cooperative Research Centre for Cattle and Beef Quality (CRC) to combat pestivirus.

Pestivirus, also known as 'bovine viral diarrhoea virus' (BVD) and 'mucosal disease virus', is widespread and causes a number of disease patterns (see article in *Beeftalk 9*).

In healthy cattle pestivirus presents like a flu (e.g. fever, depressed activity, diarrhoea, slight cough) and often goes unnoticed. The main cause for concern is when cows become infected during the first six months of pregnancy. The result can be abortion or calves that are born weak, dwarfed, persistently infected, blind, unable to stand or suck, or retaining a wobbly gait and permanent head tremor.

Pestivirus is spread by direct contact between animals. The greatest spread occurs during yarding, particularly if different groups are mixed.

In herds recently infected with pestivirus, production losses due to reduced reproduction, death and ill thrift can be between 25 and 40 per cent. In chronically infected herds, annual production losses range between 5 and 10 per cent.

Vets can test blood samples or tissue from aborted foetuses to determine whether you have a problem with pestivirus.

### *Control*

In herds already infected with pestivirus, a certain level of control can be achieved by ensuring replacement heifers develop a strong immunity before they are bred. This can be achieved by mixing a 'persistently infected' calf with replacement heifers so that the heifers contract the disease before becoming pregnant.

Vaccination using Pestiguard is now another option, costing around $3.50 per dose. Two shots of the vaccine need to be given 4 to 6 weeks apart. Both shots must be given prior to breeding to protect future foetuses. The timing for booster vaccinations is not as critical as for the initial vaccination. Bulls should be vaccinated as well as cows because healthy bulls can be transiently infected and shed pestivirus in their semen for a short period after natural exposure.

In herds that are free of pestivirus, control options include vaccination or appropriate quarantine to keep introduced and neighbouring stock away from pregnant females i.e. by adopting strict biosecurity measures.

**References:**

Cattle Diseases – Bovine pestivirus at www.dpi.qld.gov.au/health/3563.html or Call Centre 13 25 23.

Pestivirus Infection – Bovine Virus Diarrhoea and Mucosal Disease at www.dpi.vic.gov.au

Further information:

Your local vet

or

***Lee Taylor***
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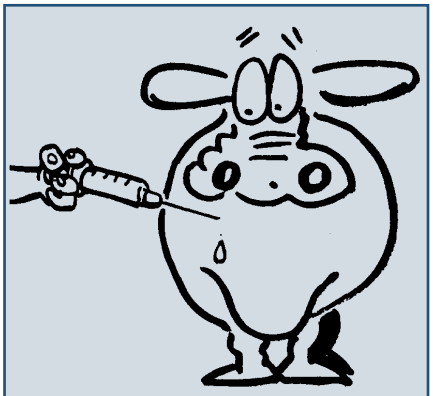
*Email: lee.taylor@dpi.qld.gov.au*



## Timing your tick fever vaccinations

If you are planning to vaccinate your cattle with tick fever vaccine as well as other vaccines such as 5-in-1 or 7-in-1, if possible do not administer more than one vaccine at a time.

The immunity produced by the tick fever and other vaccines may be more reliable if these vaccines are administered at different times.

As a general rule, administer tick fever vaccine at least 2 weeks after any other vaccine. If you do administer the tick fever vaccine first, wait at least 4 weeks before administering any other vaccines.

If you cannot administer the vaccines at different times,

- read the vaccine instructions carefully
- don't administer more than one vaccine in the same spot, and
- use different syringes for each vaccine.

Further Information:

Your local vet

# Introducing a new online map service: Regional Ecosystem Maps

Maps available at the website http://www.epa.qld.gov.au/REMAP show the current distribution and status of remnant regional ecosystems as listed in the schedule of the Vegetation Management Regulation (2000), as well as recent certified amendments. These maps also indicate your property boundary, National Park and State Forest boundaries, towns and roads.

The maps show the current distribution of 2001 remnant regional ecosystems (RE) and certified amendments. If you already have a printed RE Map supplied through NRM&E, these new online maps will show any certified amendments that have been made since that map was printed and which may affect your property.

The maps can be created from a LotPlan number or by entering coordinates. After you submit your request, the map is forwarded to your email address.

The maps are produced at a map scale of 1:100,000, except for some areas in southeast Queensland where 1:50,000 scale mapping is available, and can be printed at A3 or A4 or viewed on screen, zooming into the area in question.

***"The really nice thing about not planning is that failure comes as a complete surprise and is not preceded by long periods of worry or depression!"***

***Anon***

## Conference Announcement

The 2005 committee for the Association for the Advancement of Animal Breeding and Genetics (AAABG) are pleased to announce the 16th Conference to be held at

**Noosa Lakes Convention & Exhibition Centre**

**Sunshine Coast, Queensland**

**Sunday 25 – Wednesday 28 September 2005**

The conference theme is

Application of New Genetic Technologies to Animal Breeding.

Other activities associated with the conference will include a satellite meeting for industry and visits by an invited travelling fellow.

Please visit our website www.aaabg.org for further information or contact Rebecca Farrell, DPI&F, Yeerongpilly – phone 07 3362 9538

AAABG
Association for the Advancement of Animal Breeding and Genetics

# Dryland sown pastures

In your feedback we often receive requests for suggestions for sown pasture mixtures. The tables below list "best bet" grasses and legumes for different land types in the central and north Burnett, the coastal Burnett and the Moreton. We would encourage you to read earlier articles on the role of sown pastures and the two articles in this edition on the basics of pasture management and pasture renovation. For further information contact the DPI&F Call Centre on 13 25 23.

## central and north Burnett

| Best bet grasses | Best bet legumes | Other options | Methods | Comments |
|---|---|---|---|---|
| **Brigalow softwood scrub** | | | | |
| rhodes (Katambora, Callide)<br>green panic (Petrie)<br>panic (Gatton)<br>buffel (Biloela, Gayndah)<br>creeping bluegrass (Hatch, Bisset) | leucaena (Peru, Tarramba,Cunningham)<br>cassia (Wynn)<br>desmonthus (Jaribu)<br>shrubby stylo (Seca/Siran) | bluegrass (Floren)<br>purple pigeon grass (Inverell)<br>barrel medic<br>siratro (Siratro, Aztec)<br>lucerne | full cultivation<br>blade ploughing<br>renovation | Creeping bluegrass, cassia and shrubby stylo are best in lighter scrub soils |
| **Brigalow (clay)** | | | | |
| rhodes<br>buffel<br>creeping bluegrass<br>bluegrass (Floren) | desmanthus<br>leucaena<br>butterfly pea (Milgarra) | purple pigeon grass<br>makarikari grass (Bambatsi)<br>barrel medic<br>caatinga stylo (Primar, Unica) | blade ploughing<br>renovation<br>cultivation | Paspalum, Floren and makarikari grass in melonhole country. Leucaena where drainage is good. Establishment of grasses and legumes is difficult |
| **Blue gum flats (mostly cracking clays)** | | | | |
| rhodes<br>bluegrass (Floren)<br>creeping bluegrass | siratro<br>barrel medic<br>lucerne<br>lwucaena<br>caatinga stylo | purple pigeon grass<br>desmanthus<br>shrubby stylo<br>american jointvetch (Lee, Glenn)<br>butterfly pea | full cultivation<br>renovation | Shrubby stylo should not be sown on heavy clays or where drainage is restricted |
| **Silverleaf ironbark (clay)** | | | | |
| rhodes (Katambora, Pioneer)<br>creeping bluegrass | shrubby stylo<br>caatinga stylo<br>leucaena | green panic<br>purple pigeon grass<br>siratro<br>butterfly pea | full cultivation<br>renovation | Rhodes and green panic will decline without nitrogen. Leucaena on deeper soils |
| **Box (clay)** | | | | |
| rhodes (Katambora, Pioneer)<br>buffel (Biloela, Gaynday, American)<br>creeping bluegrass | shrubby stylo | desmanthus<br>cassia | full cultivation<br>renovation | Cassia where drainage is good |
| **Silverleaf ironbark (granite and narrowleaf ironbark)** | | | | |
| rhodes (Katambora, Pioneer)<br>creeping bluegrass | finestem stylo (Oxley)<br>shrubby stylo<br>cassia<br>lotononis (Miles) | sabi grass (Nixon)<br>jointvetch (Bargo)* | light cultivation<br>renovation<br>bandseeder<br>strip cultivation | Leave coutry with sufficient cover for soil protection |
| **Box (erosive)** | | | | |
| rhodes (Katambora, Pioneer)<br>creeping bluegrass<br>indian bluegrass (Keppel, Medway) | shrubby stylo | pangola grass<br>cassia | light cultivation | Grasses suitable for land reclamation are required |
| **Gum-topped box, spotted gum, narrow-leaved ironbark with wattle understory** | | | | |
| Not suitable for most sown grasses, but can grow indain bluegrass | finestem stylo<br>shrubby stylo<br>cassia<br>lotononis | | bandseeder<br>aerially seeded<br>strip cultivation | |

* seed rarely available

Source: Sown pasture management workshop. Futureprofit. Department of Primary Industries, Queensland.

Further information on individual species is available from the DPI&F Beef Notes and Farm Notes series, CSIRO publications and produce agents.

## coastal Burnett

| Best bet grasses | Best bet legumes | Other options | Comments |
|---|---|---|---|
| **Alluvial flats** | | | |
| rhodes (Callide)<br>creeping bluegrass<br>pangola<br>signal (Basilisk) | siratro<br>shrubby stylo<br>lotononis<br>cassia | caribbean stylo (Verano, Amiga) | |
| **Basalt soils** | | | |
| rhodes (Callide, Katambora)<br>signal<br>creeping bluegrass<br>green panic | siratro<br>glycine (Tinaroo, Cooper)<br>Shrubby stylo (Seca, Verano)<br>caribbean stylo<br>cassia<br>jointvetch | guinea grass (Hamil) | Caribbean stylo as a pioneer only |
| **Coastal lowlands** | | | |
| rhodes<br>pangola | lotononis<br>lotus (Maku)<br>american jointvetch | koronivia grass (Tully)<br>pinto peanut<br>siratro | Pinto peanut and lotus for moist situations only |
| **Hills and mountains (granite sands)** | | | |
| rhodes (Katambora)<br>signal<br>indian bluegrass (Keppel) | finestem stylo<br>caatinga stylo<br>shrubby stylo<br>lotononis<br>cassia | | Caribbean stylo as a pioneer only |
| **Foxtail flats (wet)** | | | |
| paspalum<br>pangola | lotus<br>american jointvetch<br>setaria (Narok, Solander) | koronivia grass | |

Further information is available from DPI&F Prime Notes, CSIRO and produce agents.
Seek local advice for recommendations for your situation.
Seeding rates: For small seeded legumes, for example lotononis, 500 g/ha. Medium size, for example siratro, 2–3 kg/ha. Large seeded legumes, for example pinto peanut, 10–15 kg/ha. For grasses, 1 kg/ha pure live seed.

## Moreton region

| Best bet grasses | Best bet legumes | Other options | Comments |
|---|---|---|---|
| **Alluvial and black soils** | | | |
| kikuyu<br>rhodes (Callide)<br>green panic<br>panic<br>setaria (Norok, Solander) | white clover (Haifa, Ladino)<br>red clover<br>lucerne<br>lotus<br>pinto peanut | digitgrass (Premier)<br>medics<br>kenya white clover (Safari) | Kikuyu only on high fertility soils.<br>Lotus in wet areas only |
| **Shallow stony soils** | | | |
| rhodes (Callide) | siratro<br>lotononis<br>desmodium (Greenleaf)<br>axillaris (Archer) | | Use desmodium and axillaris only in areas with rainfall above 900 mm |
| **Red soils** | | | |
| kikuyu | creeping vigna (Shaw)<br>white clover (Haifa, Ladino) | green panic<br>glycine | |
| **Brown soils** | | | |
| rhodes (Callide)<br>green panic<br>panic<br>kikuyu<br>setaria | siratro<br>glycine<br>white clover<br>lucerne | dititgrass<br>medics<br>jointvetch | Jointvetch only in areas with rainfall above 900 mm.<br>Setaria in moist areas |
| **Duplex soils** | | | |
| rhodes (Callide, Katambora)<br>indian bluegrass | siratro<br>lotononis<br>pinto peanut | cassia<br>shrubby stylo | |
| **Granite sandy soils** | | | |
| rhodes (Callide, Katambora)<br>setaria | finestem stylo<br>siratro<br>lotononis<br>pinto peanut | cassia | Finestem stylo is the preferred species.<br>Setaria in moist areas |
| **Coastal sands** | | | |
| pangola<br>paspalum<br>setaria | siratro<br>lotononis<br>lotus<br>white clover | jointvetch | |

Further information is available from DPI Prime Notes, CSIRO and produce agents. Seek local advice for recommendations for your situation
Seeding rates: For small seeded legumes, for example lotononis, 500 g/ha. Medium size, for example siratro, 2–3 kg/ha. Large seeded legumes, for example pinto peanut, 10–15 kg/ha. For grasses, 1 kg/ha pure live seed.

# Timely tips for *Beeftalk 19*

## April – May

### *National Livestock Identification System (NLIS)*

- Ensure your property details are up to date with DPI&F records
- Order NLIS devices

### *Business management*

- Have a tax-planning meeting with your accountant.
- Update your business plan.
- Consider enrolling in training to improve knowledge and skills

### *Dry season management*

- Assess the pasture quantity and quality in each paddock - a forage budget can help.
- Adjust stock numbers according to feed available and predicted seasonal conditions.
- Remember, winter rain will may improve pasture quality but not quantity
- Plan dry season management
- Make sure you have on an assured supply of supplements if required.

### *Weaners*

- Wean before pasture are frosted to allow cows to 'pick up' before winter.
- Weaners less than 150kg need special attention
- Feed from troughs to reduce parasite burden.
- Educate weaners through the yards and by tailing them out every day.
- Vaccinate with booster 5-in-1 or 7-in-1 and tick fever.

### *Breeders*

- At weaning note dry cows and cows with poor calves for possible culling
- Assess the need for supplementation.

### *Bulls*

- Remove from breeders.
- Check for physical problems.
- Cull bulls on age (7 years old), temperament and physical defects.

### *Growing cattle (steers and cull heifers)*

- Are they on track to meet target markets? If not why not? Assess options

### *Parasites*

- Start strategic pre-winter tick control.
- Treat for buffalo fly to reduce the numbers that may over winter.
- Check worm burdens of weaners with WormCheck - treat if necessary.
- Remove 'out-of-date' buffalo fly tags.

### *Pastures*

- Start preparing land for sowing improved pastures in spring.

## June – July

### *National Livestock Identification System (NLIS)*

- Compulsory tagging starts on 1st July (unless exemptions apply)

### *Business management*

- Assess business performance for the last 12 months of cattle sales. Do you need to make some changes?
- Plan business management strategies for the next 12 months, e.g. budget, property improvements and marketing.

### *Dry season management*

- Re-assess your pasture quality and quantity:
  - o If pasture quantity is below requirements reduce numbers
  - o If pasture quality won't sustain required performance consider alternative markets.

### *Growing cattle (steers and cull heifers)*

- As for April-May.

### *Breeders*

- Pregnancy test.
- Cull breeders on temperament, age, defects and pregnancy.
- Vaccinate breeders for leptospirosis.
- Assess mating program and plan/make changes if necessary.

### *Bulls*

- Consider bull requirements for coming season.
- Are the current bulls giving you the progeny you require?

## August-September

### *Dry season management*

- Review dry season management plan and climate forecasts.
- Breeders that are heavily pregnant or lactating and weaners will require energy and protein supplements to maintain weight.
- Draft cattle according to nutritional need.

### *Breeders*

- Are maiden heifers going to be heavy enough to mate?
- Are they in good enough condition to go back in calf?
- Is your breeding program producing animals suitable to market requirements?
- Vaccinate maiden heifers for vibriosis (2 vaccinations 4 to 6 weeks apart) check this.

### *Bulls*

- Check soundness (physical and reproductive) cull any with defects.
- Evaluate potential bull supplies - are they supplying enough information on their bulls?.
- Vaccinate for vibriosis and 3-day (booster) at least 4 weeks before joining.

### *Parasites*

- Plan summer tick control program. Talk to your Stock Inspector if control is a problem,.
- Check late winter (early) calves for scrub tick.

### *Pastures*

- Consider burning native pastures to maintain good pasture condition and control woody weed growth.
- Watch long-range weather forecasts for suitable time to plant pasture.
- Maintain good pasture condition by spelling in late spring or summer for at least 2 months every 4 years.

# Rolled **beef roast**

***Tender beef fillet wrapped in proscuitto and stuffed with spinach, fetta and sundried tomatoes.***

Serves: 5

Preparation Time: 20 minutes

Cooking Time: 45 minutes

## Ingredients

1 kg beef eye fillet

1 bunch spinach, washed, blanched and dried

100 g sundried tomatoes

40 g fetta

200 g proscuitto slices

## Method

Preheat oven to 200C. Butterfly fillet lengthways by cutting as you would slice open a baguette, leaving 2cm of meat uncut. Open out the fillet.

Place half the spinach on the beef, followed by the sundried tomatoes and crumbled fetta. Lay the remaining spinach over the top and close the beef lid.

Lay the proscuitto slices to cover the beef fillet then tie up with kitchen string.

Place the beef and vegetables prepared for roasting in a roasting tray and spoon over some oil from the sundried tomato jar. Place in a preheated oven and check after 30 minutes.

Cover and leave to rest for 15 minutes before serving. This fillet looks dramatic sliced and arranged on a platter surrounded by some fresh baby spinach leaves. Serve the roasted vegetables on a separate dish.

If you would like a copy of Beeftalk mailed to you, please complete the following form and send to Editor, Beeftalk, DPI&F, PO Box 395, Gympie, Qld 4075.

Name: .....

Address: .....

Postcode: ..... Shire: ..... Property Number: ..... No. of cattle: .....

Phone: ..... Fax: ..... Email: .....

Which of the following best describes you?

☐ Beef producer ☐ Agribusiness outlet ☐ Education ☐ Other (please state) .....

New alien weed for Queensland

# Praxelis

# Have you seen this plant?

## The Queensland Herbarium would like to hear from you.

Praxelis (*Praxelis clematidea*), a South American species, is known to be highly invasive in north Queensland where it forms dense swards not eaten by stock. It is invasive in most situations. In south-east Queensland, praxelis is known in only a few places, but it is likely to spread quickly, especially in disturbed situations and roadsides. It is easily confused with blue billygoat weed (*Ageratum houstonianum*).

Praxelis is not currently a declared plant.

If you suspect you have seen praxelis in your locality, the Queensland Herbarium would like you to forward specimens so they can update their distribution maps and monitor potential praxelis infestations.

### Praxelis (*Praxelis clematidea*)





**Seeds with long fine "plume" hairs**
**(pappus bristles 3-4 mm)**

### Blue billygoat weed (*Ageratum houstonianum*)





**Seeds with short coarse "plume" hairs**
**(pappus bristles 1-2 mm)**

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