

Better Economic and Environmental Futures

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What is Bovine Johne's disease?

Biosecurity Queensland is managing a Bovine Johne's disease response after the disease was detected in a stud beef cattle herd near Rockhampton in late 2012. For more information visit www.biosecurity.qld.gov.au or call 13 25 23.

Bovine Johne's disease, or BJD, is a bacterial infection affecting the intestinal tract of cattle. This particular bacteria, *Mycobacterium avium paratuberculosis*, can also infect deer, goats and alpacas. All breeds of cattle can be affected. Many different types of mycobacteria can cause diseases. Other examples include tuberculosis and leprosy. Mycobacteria are very slow growing and once contracted can take many years to produce disease. This makes disease detection and control more difficult.

Cattle pick up the BJD mycobacteria as calves or stock under one year of age. It is mostly transferred by ingestion of the bacteria in manure. Older cattle have very good resistance to infection and won't become infected unless they ingest relatively large doses of the bacteria. The main source of infection for calves is their dam's teats but it can also be picked up from the ground or watering points. Once infected, the bacteria will move through to the small intestine and lodge in the intestinal wall. The body's immune system recognises that the bacteria are not meant to be there and growth is suppressed. This, combined with the bacteria's slow growth, keeps the disease at bay for many years.

The bacteria grows in the intestinal wall and abdominal glands. The intestinal tube, which is where most nutrient absorption occurs, thickens as they multiply. The thickening stops this from happening and as nutrients cannot be absorbed, the animal will begin to waste away.

The risk of disease production is higher in the late stages of pregnancy or early lactation when a cow's immune system is not working as well. This time also corresponds with when we tend to get more worms around. A BJD infection at this time is likely to produce disease in the cow and also infect any calves at foot. The cow will become very thin and produce billions of bacteria per gram of faeces.

A post-calving cow with serious weight loss may have BJD. This is particularly likely if conditions are good and the bulk of the herd is doing very well. If an animal has usually been in good condition before this time, the drop in condition can be rapid and quite startling. The animal is often around four years of age when first noticed. Older cows with more serious signs may also have diarrhoea. Bulls can also become sick, either when younger and being bullied by larger stock or at an older age.

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Editor



Please use the feedback sheet provided to let us know of any topics you would like covered in the newsletter. Alternatively if you know of anybody who would like to receive the newsletter, ask them to fill out their details and return the feedback sheet.

2013 has brought a late start to the season, flooding for some and not enough rain for others. DAFF Pasture Agronomist Stuart Buck has contributed an article on post-flood pasture recovery. Stuart has also written on legume options. Having spent some time visiting producers who all ask “how do we get legumes into this country and what legume should we go with?”, I know this will be a well read article.

I also know our cover article “What is BJD?” will be keenly read and that last year’s successful Breeding EDGE workshops and genetics field days mean there will be interest in the next article detailing the Next Gen Beef Breeding Strategies Project.

In response to your feedback, Principal Beef Extension Officer Mick Sullivan has contributed an article on how to control vibriosis in your breeders. Please keep sending in your feedback sheets as your ideas help us keep the newsletter relevant.

We are keen to run Breeding EDGE and Nutrition EDGE workshops in CQ but at least 10 businesses are needed to attend for it to be

viable. Let us know if you are interested and we can work out an appropriate venue.

DAFF Beef Extension staff have also just completed training to run the new version of Breedcow Dynama, a herd economic model used to compare options. The program can be downloaded for free at www.futurebeef.com.au. Please contact your preferred extension officer to organise a day’s modelling.

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The newsletter will only be available electronically after this edition, therefore its important you subscribe via the link above, as anti-spamming laws prevent us from manually adding your email if we have it on record.

I hope you enjoy the read.

Byrony Daniels
CQ BEEF Newsletter editor
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The bacteria can survive out of the body and cause infection for some time. In cool, moist and shaded areas it can be active for up to a year while in hot, dry areas exposed to sunlight the bacteria survives for a shorter period.

There are a few tests for BJD. Manure samples can be tested for the bacteria culture or a more recent PCR test. Culture involves growing the bacteria in the laboratory for about two to three months. The PCR test looks for bacterial DNA and is a much quicker process. Tests on samples can also be undertaken at post mortem. This is a much more accurate test involving removal of key areas of the intestinal tract and glands, either on property or abattoir for laboratory analysis.

There is no effective treatment for BJD and infected animals should be identified early and removed from the herd. Their dam and any progeny should also be removed. Animals can be sent straight to the abattoir unless they are known to be ill. Vaccination should soon be available to help control infection.

All cattle producers are urged to learn about BJD and how to prevent its introduction to their herds. The most important protection measure is to check the disease status of the herd of origin for intended new stock. Cattle from the southern states, especially those that have grazed with or been bred from dairy stock, carry a higher risk than Queensland cattle. Additional assurance from a recognised BJD scheme, such as CattleMAP, is highly recommended. Once introduced, the health of new stock should be monitored.

If uncontrolled, BJD infection can bubble away, gradually building up in a herd over many years. In the right environment it can infect many animals. Moist, cool places such as found in southern dairies with higher stock rates and intensive management are particularly at risk. In Queensland, the ability for disease spread is less with BJD found mostly in introduced southern cattle and along coastal areas.

BJD is a notifiable disease Australia-wide and so any suspected or confirmed cases must, by law, be reported to help control the spread infection. Notifiable diseases are one of the biggest barriers to trade. If disease can be found early, traced and controlled markets can be given assurance of the disease status of animals they are buying. Our end buyer, the consumer, expects us to stick to an agreed level of protection.

Next Gen Beef Breeding Strategies project

There is a renewed focus on improving reproductive performance in northern Australian beef cattle herds. This is the result of concerns about the relatively poor performance of the northern Australia beef industry highlighted by industry reviews (Northern Beef Situation Analysis - McCosker et al. 2009) and recent research projects (Beef CRC, MLA Cash Cow).

With many northern producers achieving less than a 50% weaning rate, there is an urgent need to optimise beef production efficiency rather than just increasing growth. The main factors influencing reproductive efficiency include age at puberty and first conception, duration of post-partum anoestrus and total lifetime productivity (total number and weight of calves produced in a cow's lifetime).

The Next Gen Beef Breeding Strategies project was developed to address the issue of breeder infertility. Funding has been provided by the Queensland Government's Smart Futures Fund (SFF) Research Partnerships Program for three years.

Project objectives

The project is focused on gathering and utilising information using on-property collaborative research activities with key Droughtmaster, Santa Gertrudis and Brahman BREEDPLAN seedstock bull breeding herds in northern Australia. These breeds were selected because they are the largest tropically adapted genotypes in Australia.

The aim of the project is to evaluate, validate and demonstrate genetic and genomic methods of increasing herd reproductive performance. Growth and carcass trait information and increasing the frequency of polledness in these tropically adapted seedstock herds is also being considered. Herds will record the traditional traits used in the BREEDPLAN genetic evaluation (growth, carcass, fertility) as well as novel male and female fertility traits identified in the Beef CRC. Commercially orientated strategies for trait collection will be assessed for use in herd recording continuing beyond the life of the project.

Specific project activities include:

- i. measuring bull breeding soundness evaluation (BBSE) traits on young males with a specific focus on sperm morphology and percent normal sperm. In the female herd, scanning will be undertaken for the presence

of Corpus luteum (CL) as an indicator for age of puberty, record matings and calvings to determine post-partum reconception interval (particularly in lactating first-calf cows) and lifetime reproductive performance;

- ii. using currently available quantitative genetic and potential genomic selection techniques and new tools (MateSel) to identify and select sires for future breeding programs of collaborating herds;
- iii. identifying and selecting poll genes in these tropically adapted breeds;
- iv. using the performance (phenotypic) data and genomic information collected and stored on the Breed Association database for use in the calculation of BREEDPLAN EBVs. In particular, the data will be used to develop and calculate genomic enhanced EBVs as this technology is developed by the Animal Genetics and Breeding Unit during 2013;



- v. monitoring and evaluating the change in genetic merit for production and reproduction performance of collaborating herds; and
- vi. defining the economic returns of the implemented genetic improvement strategy, albeit within a short three year term, while evaluating the costs associated with genetic improvement.

The project's research activities will deliver better information for herd management decisions while enabling the selection of superior breeding animals for production, fertility and poll traits. It will increase genetic progress of collaborating seedstock herds and produce superior sires for use by the northern Australian beef industry.

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Practical activity: EBV evaluation and visual assessment of bulls at Lisgar Droughtmasters, Gumlu

Making herds more profitable

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Many breeder herds are run with minimal input and management with reproductive rates often indicating a 65–80% branding from 5–12 months of mating. It would be more desirable to have the breeder herd functioning on the same basis as interest and tax e.g. within a 365 day inter-calving interval.

Breeding EDGE workshops held at Bowen and Nebo in October and November 2012 were attended by 34 producers from 20 beef businesses. The theme for producers was tools to increase the returns from their herds.

Since then, 15 attending businesses have continued discussions with facilitators, changes to the direction of breeding programs have commenced, artificial insemination programs have been run with superior sires and different breeds have been introduced into herds.

What could you achieve in your herd?

If you are interested in a CQ Breeding EDGE Workshop call Byrony Daniels 07 4983 7467 or Laura Devlin 07 4983 7419.

Charles Williams from 'Riverside' Nebo views live spermatozoa under the microscope at ALC Brahmans, Nebo



Forage legumes for short or long-term pastures on clay soils

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A range of tropical legumes is available for planting on more fertile heavier clay soils to provide high quality grazing forage. These soils have higher fertility and water holding capacity and will often have been used for cropping but may now be depleted in nitrogen and soil organic matter.

Legumes for grazing can be grown on these soils as short-term pastures between other crops (leys) or in permanent pasture. This will provide higher levels of protein for grazing stock. There are also long-term pasture benefits from adding nitrogen to the soil.

Ley pastures or short-term pasture

As soil fertility declines on old crop land, ley farming is being more widely considered. Ley pastures with a grass and legume mix are planted for 2 to 4 years in rotation with crop. The legumes in these systems need to establish readily, grow quickly and produce high forage yields to maximise their forage value and the amount of nitrogen that can be returned to the soil. Two legumes being used in this capacity are burgundy bean and butterfly pea.

Burgundy bean (*Macroptilium bracteatum*)

- Perennial with a relatively large seed. Can regenerate from seed but rarely lasts more than 2 to 3 years in a grazed pasture because it is palatable.
- Establishes easily in prepared seedbeds when planted at a depth of 2 to 4 cm.
- Grows rapidly and produces high forage yields in the first year.
- Ease of establishment allows for a rapid improvement in soil nitrogen which is highly desirable for a ley pasture.
- Planting rates are 2 to 5 kg/ha.
- Varieties Cadarga (an erect form) and Juanita (lower growing but can be more persistent and less affected by bean mosaic virus) are usually sold as a composite.
- Grows on a wider range of soils and better adapted to cooler sub-tropical climates than butterfly pea.
- Forage production is highest in summer and is limited when average daily temperatures drop below 15°C.
- Large seed establishes easily when planted at depths to 5 cm.
- Planting rates of about 6 kg/ha on ley pastures will achieve a good plant density of 5–10 plants/m². Often produces higher yields in the second and subsequent years when a good framework of woody stems has developed.
- Persists for many years under grazing provided it is not continuously grazed and is allowed to set seed.
- Seedling recruitment is sporadic but can be very successful under favourable weather conditions.
- Palatable at most stages of growth although there have been some reports it is not always well eaten.
- Milgarra, the Australian cultivar, is a composite of six main lines and a number of minor lines.

Butterfly pea (*Clitoria ternatea*)

- Strong perennial twining legume that is well suited to clay soils. Flower colour ranges from white to dark blue.
- Tolerates some inundation but does not withstand prolonged waterlogging.
- Not suited to areas with severe or frequent frost but will recover from some frost by regrowing from the base or the woody stems.

Combined with grasses

These legumes can be used in pure legume swards. However there are advantages in planting grasses with them, particularly if the grasses are not so aggressive in the establishment phase that they severely reduce legume forage yields. The grasses can take advantage of increased soil nitrogen and reduce the likelihood of weeds

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becoming dominant, especially in winter when the tropical legumes are not actively growing. Grasses also provide more forage for grazing and, because grasses degrade more slowly than legumes, the release of nitrogen to subsequent crops can be spread over a longer period.

Long-term pastures

In long-term pastures the grass and legume are usually planted at the same time (except for leucaena, where the grass is established after the legume). These pasture types can be slower to establish but the grass and legume components

- Requires a highly specific inoculum which should be mixed with seed prior to planting.
- Two cultivars are Unica and Primar, both are sold together as a composite.
- Caatinga stylo is not highly palatable. Grazing stock generally prefer green grass leaf over legume leaf but as the grass matures the stylo is well eaten. However trials demonstrate steer growth rates when grazing Caatinga stylo-grass pasture are higher than when grazing grass-only pastures.



Cattle grazing a buffel grass and caatinga stylo pasture near Moura

are very persistent once established. Often the legume takes some time to increase in density but this is necessary for the pasture to remain productive in the longer term. Some Leucaena pastures continue to be productive and persistent almost 40 years after planting. Other tropical legumes with potential to survive in long-term pasture systems are Caatinga stylo and Desmanthus.

Caatinga stylo (*Stylosanthes seabrana*)

- Well suited to clay and clay loam soils.
- Woody perennial similar to shrubby stylo (Seca and Siran).
- More tolerant of cold than shrubby stylo or Caribbean stylo.
- Flowers early with prolific seeding.
- Seed is small and slippery if dehulled so should be planted at 1 to 2 kg/ha on the soil surface.

Desmanthus (*Desmanthus virgatus*)

- Small long-lived perennial shrub well suited to alkaline clay soils.
- Once established competes with aggressive grasses including buffel.
- Very drought tolerant.
- Forage production is low but it is well eaten by stock when available. It also tends to shed leaf in response to dry conditions so its contribution to the pasture yield and animals' diet is variable.
- Small seed that requires scarification before planting on or close to the soil surface at 1 to 2 kg/ha.
- A heavy seed producer. Seeding occurs throughout the growing season but a high proportion of seed is hard. Field softening can take some years so a good initial strike is important but plant density can increase rapidly once the seed has softened.
- Marc has been the main cultivar however a new composite called 'Progardes' is now available.

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- Trials indicate that growth rates for steers grazing desmanthus/grass pasture over 6 years ranged from 0.43 to 0.66 kg/h/day. This compared with a range of 0.29 to 0.63 kg/hd/day on grass only pasture.
- Weed control during establishment is essential and the area should be kept weed free until the leucaena plants are well established (at least 1 to 1.5 m tall), after which grass can be established between rows.
- Two cultivars most widely planted are Cunningham and Tarramba. Another cultivar Wondergraze was released in 2011. Cunningham is a lower growing heavily branched type. Tarramba is more tree-like whereas Wondergraze is more branched than Tarramba.
- These varieties are susceptible to attack by psyllids, small sap-sucking insects that feed on the new growing leaves and can reduce forage production, particularly in autumn and spring when conditions are cool and wet. A psyllid resistant variety is being bred and will be released commercially in about 2015.

Leucaena (*Leucaena leucocephala*)

- Long-lived shrub or small tree that produces forage of high nutritive value for cattle.
- Grows best on fertile, well-drained, neutral to alkaline soils but can be slow to establish.
- Susceptible to frost. Light frosts affect the leaf and heavy frosts can kill the stems to ground level but usually will not kill mature plants.
- Usually grown in rows 6 to 10 metres apart. Needs to be planted into well-prepared cultivation with a full profile of soil moisture.

Forage yields of leucaena in the lower rainfall (650–750 mm) sub-tropical areas are low but the palatability and nutritive value of leucaena and the associated grass is high. As a result high animal growth rates of over 250 kg/head/year (0.7 to 0.8kg/head/day) are regularly recorded. To maximise growth rates and prevent toxicity from mimosine and its derivatives, an anaerobic rumen bacteria ('rumen bug') should be transferred to the rumen of all cattle grazing leucaena. This can usually be achieved by drenching about 10% of the animals in a group and allowing the bacteria to transfer to the rest of the group. The rumen bug can be obtained from DAFF Tick Fever Centre at Wacol by calling (07) 3898 9655.

Acknowledgement: Information in this article was adapted from an article originally compiled by Bob Clem (ex DAFF Gympie).

Pasture recovery after flooding

Flooding impacts on pasture survival and production varies depending on the degree of flooding and pasture species present. Depth and duration of flooding are generally the most important factors determining the effects on pastures however turbidity, flow rates and temperature can also have an impact. Silt deposition on pasture plants as floodwaters recede can reduce recovery by forming a physical barrier to air and sunlight. Many pastures can tolerate shallow flooding where part of the plant remains out of water for several days to weeks but relatively few pasture plants can survive deeper flooding where the whole plant is submerged for more than a few days.

Pastures are generally resilient and will eventually recover from flooding. However, graziers can use a number of strategies to speed the recovery of their pastures, animal production and business performance. Pasture recovery depends on both the survival and growth of adult plants and

seedlings establishing from the soil seed bank. Pastures in good condition prior to flooding generally recover more quickly due to a larger seed-bank, and possibly, fewer plants completely submerged.

Management options

The main options are pasture spelling, controlling weeds, reseeding pasture and using forage crops or sacrifice areas to allow spelling of other areas. It is important to closely check the recovery of pastures for the first 2–3 weeks to decide whether potentially costly rehabilitation is necessary (see table 1). Burning is not recommended for removing silt from pasture plants or for stimulating pasture growth.

Pasture spelling – allow pasture plants to recover and regrow as well as seedling establishment. If large percentages of the property have been flooded there is insufficient forage to support

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stock numbers. In these instances graziers should lighten grazing pressure (that is, sell or agist stock), otherwise stock performance will be affected from feed shortage, pastures will deteriorate and pasture recovery will take longer. Forage cropping or sacrifice areas can be used to lighten the load on recovering pastures in the short to medium term.

Control weeds – large populations of weeds often establish after floods due to reduced competition from the pasture. The weeds can severely compete with the recovering pasture plants and establishing seedlings. Herbicides and crash grazing can be used depending on weed species. Pastures with less weed competition will also produce more seed, aiding recovery in the following seasons.

Re-seeding pasture – wait for a few weeks to see whether grass seedlings emerge before considering re-seeding a paddock. Re-seeding is expensive, especially if there is already sufficient seed in the soil to replace ‘drowned’ plants and there may be enough existing plants to set more seed than can be sown economically. Additionally, flooded soils are often not good seedbeds as there is a lot of decaying debris and grass tussocks to catch broadcast seed, often leaving the surface crusting, cracking and providing poor soil-seed contact.

Buffel grass stands produce 100–500 kg/ha/year of seed compared with a recommended seeding rate of 2 kg/ha. Even if only a few buffel tussocks

survive and scattered seedlings establish, far more seed will be produced in the paddock than can be spread. However, if there is less than one grass plant per 5 m² and no seedlings emerge, pasture re-planting may be required. Be sure to include flood tolerant varieties such as Bambatsi, Floren bluegrass or even natives such as curly Mitchell grass if seed is available. Avoid planting silk or forage sorghums in a mix as they will compete strongly with establishing grasses and slow the recovery process even at low seeding rates.

If re-seeding is the best option, consider including a summer growing legume with the grasses in suitable areas to reduce the effects of productivity decline (rundown) with time that is experienced with grass only pastures. If flooding occurs late in the growing season tropical grasses may not have sufficient time to establish before the first frost. When purchasing pasture seed ensure the germination is good and there are no weed seeds present, particularly weeds like parthenium. Don’t purchase seed from unknown sources without a germination certificate and seed analysis report.

Forage crops or sacrifice areas – can be used to provide short-term feed and allow spelling of other permanent pasture to encourage recovery. Forage or silk sorghum established on part of a property can reduce grazing pressure on recovering pastures where graziers have arable land and machinery. Herbicides and zero-till planters make it possible to plant sorghum as soon as the ground is dry enough.

Table 1. Management options for rehabilitating flood affected buffel grass pastures

Buffel condition	Severity of flooding		Management options
	Shallow	Fully submerged	
Widespread death of buffel tussocks Few grass seedlings	>2–3 weeks	>5 days	<ul style="list-style-type: none"> Check pasture for establishing grass seedlings Spell pasture. If a large area of property has been flooded reduce grazing pressure Reseed with permanent pasture species. Include flood tolerant grasses Where suitable country is available, forage cropping to provide short-term forage Weed control (e.g. selective residual herbicide) to reduce competition with establishing pasture (especially for aggressive colonising weeds like parthenium)
Some buffel tussocks surviving Grass seedlings establishing	1–2 weeks	2–5 weeks	<ul style="list-style-type: none"> Check pasture for recovery of grass tussocks and establishing grass seedlings Spell pasture Herbicide to control weeds to reduce competition to establishing grass (e.g. Ally to control parthenium) Re-seeding with buffel of questionable benefit as existing tussocks and establishing seedlings likely to produce much more seed per hectare than from sowing. If re-seeding use flood tolerant species
Death of some tussocks Grass seedlings establishing	<1 week	<2 weeks	<ul style="list-style-type: none"> Short term spell (6–8 weeks) until adult plants have reshot and produced new leaves. Stock normally afterwards Herbicides to control weeds

Acknowledgment. Information in this article was taken from the DAFF fact sheet ‘Pasture recovery from flooding’, compiled by Gavin Peck (DAFF Toowoomba).

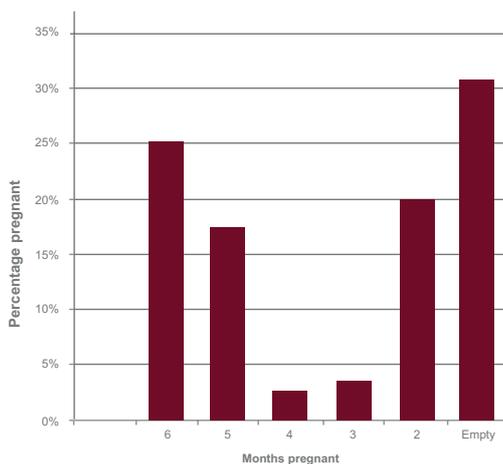
Is vibriosis costing you calves?

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Vibriosis is a cattle venereal disease that is often not well managed despite the availability of an effective vaccine. Bull vaccination is critical, yet a disappointingly large number of sale bulls are not vaccinated prior to sale and are consequently susceptible to infection. Vibriosis vaccine can leave a lump on the side of the neck which some feel has a negative impact on the visual appeal of the animal while in fact it merely confirms that the animal has been immunised.

The disease is caused by *Campylobacteriosis fetus* subspecies *venerealis*. Infected animals show no obvious signs of illness. Bulls carry the organisms in the prepuce and there is good evidence that permanent infections are more common in older bulls.

Infected cows may have increased vaginal mucus for a short time, which may be cloudy. Failure to conceive or early embryonic loss is the most common outcome from the infection and this is usually detected at diagnosis of pregnancy. Consequently, repeated return to service occurs but this is not normally noted under extensive conditions. If a successful conception occurs, up to 10% of females can abort, most commonly at 5 to 7 months of gestation. Most females will eventually acquire a natural immunity and be able to conceive. In a continuously mated herd, the outcome will be a large number of animals calving late and out of season. In a controlled mated herd it invariably means the cow will not be pregnant. Figure 1 shows the low conception rate and widened period of conception that is commonly seen in infected groups when pregnancy diagnosis is carried out.



Heifers exposed to infected bulls usually show the highest rate of infertility within a particular herd. Infected females develop a resistance to the disease over time so where the condition is endemic, the overall disease rate drops but re-infection can occur. In endemically infected herds the fertility of cows may be only slightly below normal, but infertility is seen to a greater degree in heifers. Permanent changes can occur in the oviducts of some cows leading to permanent infertility. These animals can be chronically infected and act as reservoirs for the disease. They often become “big barren cow” seen in herds that are not culled rigorously for fertility.

A high proportion of heifers return to service for 3 to 5 months and eventually become pregnant. A variable number do not become pregnant. Pregnancy diagnosis should be used to eliminate these animals as they are infection reservoirs. Bulls can be transiently or chronically infected. There appears to be no natural immune response in the bull.

Bull vaccination involving two doses 4 to 6 weeks apart with annual revaccination has been shown to clear infection and greatly reduce susceptibility to re-infection. Vaccinating the bull ensures that infection does not become established in him and while he may pick up the ‘bug’ after mating with an infected cow, it is highly unlikely infection will be spread purely by mechanical transmission.

Recommended control measures

- Vaccinate maiden bulls twice: 4 to 6 weeks apart with the second dose given 6 weeks before joining.
- Vaccinate all herd bulls annually. A good bull vaccination policy is usually adequate in most situations to prevent smashes.
- Culling females which fail to conceive and or raise a calf removes animals which may be reservoirs of infection – this will decrease the level of infection in the herd.
- Heifer vaccination may be an appropriate strategy in herds with high rates of infection and where cattle control is a problem. Heifers under 18 months require 2 doses with second 2–4 weeks after the first and 4–6 weeks before mating. Heifers more than 18 months of age can be treated with one dose 4–6 weeks before mating.
- Where possible maiden heifers should be joined to maiden bulls.
- Where possible bulls, should be culled at 6–7 years of age.



Grazing BMP update

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The Grazing BMP (best management practices) program has begun to gather momentum across the Fitzroy catchment in recent months. New funding through the Department of Environment and Heritage Protection will see the expansion of delivery into the Burdekin later this year, giving northern graziers an opportunity to participate in the program. The final 3 of the program's 5 modules are now complete and will be delivered to participants in both catchments in the coming months.

The program is based on successful Grains and Cotton BMP programs and was developed through a partnership between Fitzroy Basin Association (FBA), Agforce and the Department of Agriculture, Fisheries and Forestry (DAFF) Qld with funding from the Australian Government's Caring for our Country program. Participation allows graziers to benchmark their current practices against industry standards. These have been verified by a producer reference group and are based on industry experience and the best available science. The program covers land, livestock and business management.

Self-assessment is conducted online through a dedicated website that allows participants to identify opportunities for improved business performance, provides access to information and support. By completing a module, each participant contributes anonymously to an aggregated database. Current data collected indicates that the majority of graziers are above or at an industry accepted standard in managing their grazing and soil health. This aggregated data has the potential to strengthen the industry's position when demonstrating ethical and sustainable food production practices to the wider community.

The original modules developed and trialled in the Fitzroy catchment covered grazing land management and soil health. Following participant feedback, the soil health module was expanded into a 'Soil Information Day', delivered by presenters with many years of field

experience. The day explored the relationships between grazing management and soil health, incorporating a practical demonstration of soil properties, soil pit use, identification of soil texture, structure and pH via simple techniques that participants could take home and apply.

Feedback from graziers attending the days has been positive, indicating that the information is relevant and provided practical ideas for implementation into their enterprise. As soil is 'the engine room of the grazing system' good soil health directly relates to economic return. Rain is often thought as the driver of grass production but there is a significant difference on growth from a rain event on soil in poor health to soil in good health. The key characteristics of healthy soil include soil stability, nutrient cycling and water infiltration. The most effective tool graziers have to improve these characteristics is the management of ground cover.

Key points

- The Grazing BMP program is expanding, with new modules ready for delivery.
- New funding will support delivery in the Fitzroy and make the program available to graziers in the Burdekin catchment.
- The program will help demonstrate the high standards of environmental stewardship and commitment to animal welfare practised by Queensland graziers.
- Participant feedback has led to the development of a "Soil Information Day".
- Soil health can be improved through the management of ground cover.

To participate in the Grazing BMP program or attend a soil health information day call Matt Brown 07 4936 0324 mobile 0428 104 248 at DAFF Rockhampton or Jo Gangemi 07 4992 9178 mobile 0477 345 843 at DAFF Biloela.

Positive land management results for the grazing industry

DAFF is surveying graziers in catchments adjacent to the Great Barrier Reef Marine Park to gauge how effective their land management practices are in minimising sediments, nutrients and pesticides in runoff flowing to the Reef. The data from these surveys is collated to provide the basis for an annual industry benchmark report.

Results from the 2011 Benchmark Report indicate a positive outlook for Queensland graziers, with the majority being able to demonstrate good land management practices that present a low risk of causing soil erosion or poor quality runoff flowing to the Great Barrier Reef.

DAFF's Program Leader, Kev McCosker, said while there has been a good response to the initial round of surveys, continued industry-wide support from graziers would be beneficial.

"Information on Queensland's grazing industry practices will improve community understanding of the industry and its efforts to manage grazing land sustainably. It will also help direct the research, development and extension services needed to improve land management, particularly in higher risk areas," Mr McCosker said.

Results of data collected through the Grazing Management Practice Adoption Surveys

The A,B,C,D Framework attempts to relate management practices to the risk of encountering low groundcover and potential soil erosion.

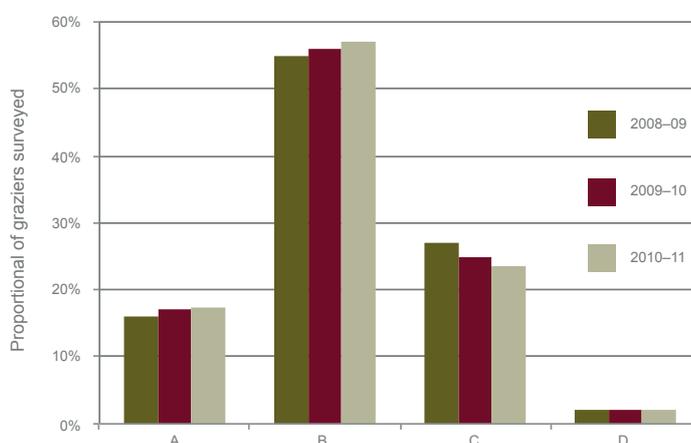
The Grazing Management Practice Adoption Survey data provides a basis for modelling changes over time. The ReefPlan targets encourage change incrementally towards "A" level practices.

"The 2011 Benchmark Report confirmed that over 50% of surveyed graziers have adopted new improved practices that maintain land in good to very good condition or improve land in poorer condition. This shows that graziers are open to new ideas and management techniques and are keen to demonstrate their good land stewardship."

Graziers willing to participate in the grazing survey are encouraged to contact DAFF on 0427427305 to register their interest. The surveys are strictly confidential, take approximately 1.5-2 hours on the grazing property, and cover the key areas of grazing land, herd and business management, animal health and extension needs.

Graziers looking to evaluate their land management practices to identify specific improvements can also take part in the Grazing BMP Program. This program helps property owners develop action plans to improve the economic and environmental performance of their enterprise. To register, visit www.grazingbmp.com.au.

« Sue Carstens-
Senior Fund
Coordinator
DAFF Nambour
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Management Practice Category	A Practices are highly likely to maintain land in good (A) condition and/or improve land in lesser condition	B Practices are likely to maintain land in good or fair (A/B) condition and/or improve land in lesser condition	C Practices are likely to degrade some land to poor (C) condition or very poor (D) condition	D Practices are highly likely to degrade land to poor (C) or very poor (D) condition
Soil erosion and water quality risk associated with grazing land management [i]	Very low risk [ii]	Low risk	Low to Moderate risk	Moderate to High risk

Helping CQ beef producers meet market specifications

Peggy Kerr >>
Formerly
FutureBeef DAFF
Emerald

Geoff Teys captured the attention of producers at a market compliance field day on 20 November 2012 at “Lowesby”, north of Rolleston.

Geoff’s presentation covered a wide range of topics including the partnership between the Teys family and Cargill, the drivers to meat consumption, the value of Australian exports and the importance of MSA to Teys Australia in delivering a high-quality consistent consumer product.

More than 50 people attending took advantage of the opportunity to question Geoff about big industry issues such as AusMeat standards (whether ossification will ever replace dentition), Halal markets, the EU quota, the carbon tax and animal welfare.

Field day host Ian McCamley spoke about his experience as part of the MLA sponsored ‘Market Compliance Producer Demonstration Site (PDS)’. Ian is always on the lookout for new technology to improve business and the PDS offered the chance to test the Ultramac® fat depth scanner in a bid to improve compliance at the abattoir for the P8 fat depth specification.

Ian’s team used the scanner to identify animals that were ready to be sent to the works and those (based on past performance) to be sent back to the paddock because they were unlikely to achieve weight gain and fat depth needed to meet current and expected conditions.

Site coordinator Peggy Kerr (DAFF) presented some of the project results advising that abattoir data indicated the main reasons for non-compliance were dentition, meat colour and P8 fat for the EU market as well as company specs, meat colour and pH for the MSA market.

Failure to meet abattoir specifications (dentition, carcass weight and boning group) resulted in just over 18% of MSA compliant carcasses not receiving a MSA premium. Carcasses with 2–4 teeth were represented in nearly every boning group from 1–15 (boning group 1 being the highest eating quality). Carcasses with 6 teeth were represented in boning groups 3-12 and 8-tooth animals were in boning groups 8 and above.

The relationship between the ultrasound fat score and P8 fat measured at the works was critical, indicating that the fat scanner was a very useful for predicting compliance to the P8 fat depth specification.

Producers who have been part of the PDS are now aware of the opportunity to improve P8 fat compliance by using the ultrasound scanner. Meat colour and pH can be addressed through management decisions, nutrition and/or genetics.

In a large-scale operation, particularly when trading cattle, not all animals are going to meet all specifications to achieve the highest price on the grid. Producers need to consider the cost of putting those animals back in the paddock and whether they will achieve a significantly higher price per kg if held on-farm.

A key message for producers is the need to first identify compliance issues relevant to their individual business via information available through MSA and abattoir feedback. In short, if you don’t measure it, you can’t manage it!





Producer profile

David and Rebecca Comiskey

David and Rebecca Comiskey are the owner-managers of 'Melton Grazing', a beef breeding and finishing business east of Alpha, central western QLD. Melton is an 8500ha property boarding the Belyando River and comprises cleared Brigalow melon-hole country, red sandy loam and clay alluvial river frontage.

The couple bought Melton from David's family in 2006 and since then have undertaken significant training and education to help them develop a business plan and a long-term plan for the property.

To manage grazing land, they have increased watering points, reduced paddock sizes and are managing land types separately to increase grazing distribution. They have implemented a time-controlled spelling regime, rotating cattle in a more systematic fashion to help with management and reduce labour costs.

The pasture composition on the property has been improved by sourcing more native grass species to plant, diversifying the grass species and moving away from the monoculture of buffel grass. They have also gradually incorporated a legume component into their paddocks, which has benefited grass by providing more available nitrogen for growth but also increased weight gain in their cattle.

They have over time, changed their herd management from continuous mating to a seasonal mating program, with pregnancy testing at weaning to remove unproductive breeders. The Comiskey have also put a large emphasis on bull selection, striving to put in bulls that meet their breeding objectives. To increase genetic diversity, they also plan to use a fixed time AI program for their heifers.

The Comiskey's have split their breeder herd to diversify their market options while continuing to make genetic advancements. Fifty percent of

the red brahman breeder herd go to red brahman bulls to retain heifers for breeding stock while the remaining 50% go to Angus and Simmental bulls to increase marketing options.

David and Rebecca aim to produce MSA graded cattle with a dressed weight of less than 320kg. They are also EU accredited and are looking to turn off lighter steers that are easy to finish. "Our breeding is concentrated on early maturity and even fat cover," David said.

Last year they joined eight other producers to supply purebred red brahman steers for the Ascot Brahman Stonegrill at Beef Australia 2012. These cattle achieved 100% MSA compliance with 97% achieved boning group 11 or below after gaining 1.5kg/day over 102 days at Melbrig Feedlot.

Rebecca and David are currently involved in the Cattle Council of Australia, Pasturefed Pilot Research Program for a Pasturefed Cattle Assurance System (PCAS). PCAS will create a specific standard designed for grassfed beef and another marketing option for CQ grazing businesses.

The Comiskeys chose to take advantage of the NLIS system for life-time management of their cattle. Since installing a Gallagher SmartTSi system on their property they are able to record, identify and trace the stock and genetics for each animal. They are matching up their carcass performance data from the processor with their on-property animal performance data to make more informed management decisions and evaluate breeding.

Rebecca sits on the CQR Beef Research Committee and is Secretary for the Alpha Ag-Force Branch, while David is on the board of directors for Central Highlands Regional Resources Use Planning cooperative. They both enjoy water skiing and have recently been selected to represent QLD in barefoot water skiing.

« Laura Devlin
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Stocktake Plus – pasture management app for graziers

Monitor. Calculate. Report.

Jane Pryor >>
FutureBeef
DAFF
Rockhampton

What is Stocktake Plus?

Stocktake Plus is a grazier decision support tool, which allows the user to monitor land condition, stock number and rainfall. It also has a forage budgeting tool to help calculate the right balance of stock to pasture available. Stocktake Plus also produces reports for all records kept, including long-term 'benchmark' carrying capacities for paddocks and properties.

The Stocktake Plus app has been developed after extensive industry consultation and is designed to be a practical, work-anywhere (including outside phone range), decision support tool to help with some key grazing land Best Management Practices. The app is available for both Apple and android devices (from mid-April 2013) and is FREE to all users.

It's an initiative of the Department of Agriculture, Fisheries and Forestry (DAFF) through the FutureBeef Program for Northern Australia and Meat & Livestock Australia, and is now available for use for all northern Australia beef producers. FutureBeef is a coordinated extension and communication program between DAFF, Northern

Territory and Western Australia state government beef extension services, and Meat and Livestock Australia. The program brings together practical, research-based information, tools and tips for producers to improve their productivity and profitability.

Stocktake Plus represents the next generation in FutureBeef decision support tools. It is based on the previous and well respected Queensland Government Stocktake monitoring software but has been improved to allow the user to complete monitoring and calculations while in the paddock, for an immediate result.

The app also has a number of in-built support tools including land type sheets, pasture yield photos, ground cover photo standards, accessible yield sheets. Basically, everything you need to do with monitoring in the paddock is now within your smartphone or tablet. Having all this in one device and in one app is more efficient than being in the paddock and realising you have forgotten the pasture photo standards, your GPS, or camera needed to complete your assessment!



'FutureBeef' is a communication and research adoption program for beef businesses northern Australia. Our producer activities are designed to help the beef industry increase productivity and profitability, in a sustainable way.

The FutureBeef program focuses on five priority areas: weaner management, breeder management, phosphorus supplementation, grazing land management and whole-of-business management. Beef producers across Queensland, Northern Territory and northern parts of Western Australia access the latest research-based information, practical tools and best management practices through research and extension projects, training workshops, producer demonstration sites, producer groups, live and recorded webinars (online seminars), YouTube videos and newsletters. You can view the latest events and sign up for our free online at www.futurebeef.com.au.

The FutureBeef Program for Northern Australia is a collaborative partnership between Queensland Department of Agriculture, Fisheries and Forestry (DAFF Qld), Department of Primary Industry and Fisheries NT (NTDPIF), Department of Agriculture and Food WA (DAFWA), and Meat & Livestock Australia (MLA).



The Stocktake Plus app:

- Assists in monitoring grazing land condition by logically guiding the user through the process, storing information, producing reports including long-term carrying capacity calculations based on the information entered
- Guides the user through a basic or more detailed forage budget
- Stores rainfall records
- Stores stock numbers – converts to AEs, displays current stock on land condition reports and can bring stock numbers through to the demand section of the forage budget
- Directs users to their monitoring sites using the GPS function
- Helps the user identify what land type they are on, using the land type mapping of Queensland
- All information is backed up securely on the internet (only accessible by the user).

Each function can be used independently, so selected functions e.g. forage budget, can

be easily accessed. Similarly, linking all the information entered from monitoring stock, land condition and rainfall, is also possible .

The app was designed to be visual, logical, prompted for ease of use and, importantly, to work without the need for 3G /4G phone reception.

Stocktake Plus has been developed specifically for graziers and agricultural advisors in Northern Australia (Queensland, Northern Territory, the Kimberley and Pilbara of Western Australia), however it has partial functionality for those in other regions of Australia. Users in other regions can still establish their own monitoring sites and produce reports in the same manner; reports will simply not calculate pasture growth and long-term carrying capacities. Forage budgeting and rainfall recording will have full functionality no matter where the user is.

Look for Stocktake Plus on you app store and/or visit www.stocktakeplus.com.au.

For more research-based news and information, tools, eBulletins and events for the northern beef industry, visit www.futurebeef.com.au.

PS.

Disclaimer

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Clermont Show Cattle Committee Cattlemen's Challenge



Laurel Hills Feedlot
Weigh Day



Friday 17th May 2013

8am – Cattle Weighing, Cattle Inspection

10am – Discussions:

Craig Price from Kilcoy Pastoral Company

Topic: Feedlot Industry

Speaker from Riverina

Topic: Yard Weaned Cattle

12:30pm – Barbecue Lunch (Sponsored by Riverina)

1:30pm – Select Carcass Competition Steer

Thank you to our Cattlemen's Challenge sponsors:

Platinum Sponsors: ANZ & Belyando Produce

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Integrated Stock Feeds

D & K Moller

Craig & Christy Moller

Vic & Jan Appleton

Wentworth Cattle Co

Mort & Co

David & Sharon Conachan

Wyena Grazing

For more information contact:

David Moller (4983 5318) or

Natalie Finger (4983 3338)

RSVP's to snfinger@bigpond.com would

be appreciated for catering purposes

