Northern Territory Government

# Top Paddock Newsletter

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*Editor: Arthur Cameron*

## Editor

The increased volume of cattle being exported through Darwin has increased the demand for hay, and also the price of hay. The supply of hay has been put under pressure and the Northern Territory may run out of hay during this dry season as producers were selling hay from the paddock as it was being made at the end of the wet season.

This level of demand is expected to continue for the foreseeable future, and the hay producers are grazing up for another big season in 2015.

Cheers from the Editor,

Arthur Cameron

October 2014

## TABLE OF CONTENTS



*Live Export Steers*

# The value of grazed grass pastures in the Top End

*Arthur Cameron, Principal Pastures and Extension Agronomist*
*Dionne Walsh, Rangeland Program Manager, Pastoral Production*

The value of a standing pasture will depend on the dry matter yield (biomass), and the amount of pasture which can be safely eaten by animals (utilisation rate) and still leave cover to allow regrowth the next wet season and to prevent erosion and soil loss. There will be a range of values. In the Top End, the value of a kilogram of feed consumed by livestock is equivalent to the value of a kilogram of good quality hay at $0.20 per kilogram ($200 per tonne).

In the Top End, most of the upland native pasture is Annual speargrass (*Sorghum intrans*) dominant, with dry matter (DM) yields on top of ridges about 1,500 kg/ha and on creek flats about 3,000 kg/ha. The safe utilisation rate on these native pastures is only 5%, so the amount consumed would be 75 and 150 kg respectively for ridges and flats, giving these types of native pastures a value of $15 and $30 per hectare respectively.

In better quality native pastures, which are generally on the better soils, with more of the palatable perennial grasses such as Kangaroo grass (*Themeda triandra*) and Plume sorghum (*Sorghum plumosum*) present, utilisation rates will be higher, i.e. 10–15%. A native pasture with 3,000 kg dry matter/ha and a safe utilisation rate of 10% would provide feed valued at $60 per hectare. A native pasture with 3,000 kg dry matter/ha and a safe utilisation rate of 15% would provide feed valued at $90 per hectare. On some of the better creek flats, dry matter yields do exceed 3,000 kg/ha, so the value of that feed would be higher still.

Improved grass pastures such as Jarra (*Digitaria milanjiana*), Strickland (*Digitaria milanjiana*), Buffel (*Cenchrus ciliaris*), Sabi grass (*Urochloa mosambicensis*) and Tully (*Urochloa humidicola*) are generally higher yielding than native pastures, depending on how well they are fertilised. Unfertilised improved pasture would generally yield about 5,000 kg dry matter/ha in most years in the Top End, while well fertilised improved grass pastures will yield about 10,000 kg DM/ha. Safe utilisation rates are much higher on the improved pasture at 70%, so 3,500 kg DM/ha of an unfertilised improved pasture can be consumed and 7,000 kg D/ha for a well fertilised pasture. This feed is valued at $700 and $1,400 per hectare respectively.

| **Pasture type** | **Grass Yield Kg DM/ha** | **Safe Utilisation rate %** | **Value of grass $/ha** |
|---|---|---|---|
| Native, annual speargrass, top of ridge | 1,500 | 5 | 15 |
| Native, annual speargrass, creek flat | 3,000 | 5 | 30 |
| Native, better perennial grasses | 3,000 | 10–15 | 60–90 |
| Native, creek flat, better perennial grasses | 5,000 | 15 | 150 |
| Native, fertile creek flat, better perennial grasses | 8,000 | 15 | 240 |
| Improved grass, not fertilised | 5,000 | 70 | 700 |
| Improved grass, well fertilised | 10,000 | 70 | 1,400 |

*Improved grass, well fertilised*

# Fertiliser for pastures, part 3

*Arthur Cameron, Principal Pastures and Extension Agronomist Darwin*

How much fertiliser do you need to apply?

Based on a soil analysis result, it is possible to calculate how much of a particular nutrient needs to be applied to the soil to optimise plant growth, and with that, pasture yield or hay yield.

As a rule of thumb, it takes 2 kg of an element per hectare to raise the available soil level of that element by 1 ppm (part per million).

The soil nutrient levels are presented in the table below together with a typical NT soil analysis, and the amount of nutrient element required to raise each nutrient level up to adequate.

| **Element** | **Adequate level (ppm)** | **Typical soil Level (ppm)** | **Amount of element to raise soil level to adequate (kg)** |
|---|---|---|---|
| Phosphorus (P) | 10 | 2.5 | 15 |
| Potassium (K) | 80 | 61 | 38 |
| Sulphur (S) | 10 | 5 | 10 |
| Zinc (Zn) | 2 | .5 | 3 |

The amount of fertiliser to apply can be influenced by the end use. It is particularly important to apply the full nutrient element requirement when growing hay as the nutrient removal is a significant impact of growing hay crops.

Nitrogen is not presented in the table, as levels are extremely low in Top End soils, and the amount to be applied to grass pastures depends on the end use and yield required.

*Sampling soil*

# Interim report—MLA Project: carp, kelp and Christmas Island; where to next with fertilisers?

*Jeff Hirth on behalf of Holbrook Landcare Network*

Increased costs of superphosphate prompted beef producers to consider cheaper alternative products that claim to give similar pasture growth responses. No scientifically-valid data were available for local soils and pastures to support the alternatives' marketing claims. A replicated field trial was established in 2009 to evaluate seven alternatives, and paired-paddock comparisons were undertaken on producers' properties in 2010 to evaluate three products. In the field trial, pasture growth was monitored regularly, and pasture quality and composition annually for three years, while live weight changes were recorded in the paired paddocks in 2010 and 2011. Soil properties were monitored at the start and end of the field trial. None of the seven alternatives improved pasture growth, quality or composition, compared with both single superphosphate and no added fertiliser, in any season. Live weight changes on producer's properties were slight and inconsistent. Equally none of the alternatives improved any of the measured soil properties, while single superphosphate increased both available and total phosphorus levels, and available sulphur levels. In summary, there were no measured production or economic benefits from the application of any of the seven alternate products to a typical Holbrook pasture and soil type for the period of the project.

This project was carried out in the Holbrook District, southern New South Wales. The alternative products evaluated were Bactivate (five native soil bacteria in a carbon-rich substrate), a bio-diesel by-product, Calsaps (a premium liquid calcium source), Johnson's compost, NutrisSoil LS (a liquid biological fertiliser), Prolong ® (a bioactive rock phosphate fertiliser), and R.U.M (a liquid fertiliser with natural nitrogen and nitrogen fixing bacteria).

http://www.mla.com.au/Research-and-development/Final-report-details?projectid=15438

# NT fodder and seed production 2013

*Arthur Cameron, Principal Pastures and Extension Agronomist Darwin*

The Pastoral Production Group of DPIF conducted a survey to estimate hay, silage and seed production in the Northern Territory during 2013. These figures include the mulching produced throughout the Darwin Rural area. The figures are tabulated below.

Hay production in 2013 was assessed at 52,560 tonnes, similar to the 52,340 tonnes produced in 2012. Hay yields were reduced in the Barkly Region due to poor rainfall.

Hay yields in the Top End were reduced when producers decided not to cut some of their areas because of the uncertainty about demand for hay brought about by the lower number of permits for cattle to be exported to Indonesia.

The value of the hay and silage produced in 2013 is estimated at $12.49 m and the seed at $0.78 m.

These figures represent the majority of the production in the NT in 2013.

The production is presented in the table below by the Australian Bureau of Statistics district.

***Hay and Seed Production in the NT by District (tonnes)***

| District | Feed Hay | Mulch Hay | Seed |
|---|---|---|---|
| Alligator | 620 | | |
| Barkly and Central NT | 3630 | | |
| Daly | 21110 | | 35.1 |
| Litchfield Shire | 7280 | 1990 | |
| Lower Top End | 17930 | | 25.2 |
| Total | 50570 | 1990 | 60.3 |

These figures were compiled with the assistance of Departmental Officers Casey Collier (Tennant Creek) and Ben Beumer (Darwin).

*Pangola grass hay*

# All the bulls are gone…

*Whitney Dollemore, Katherine Pastoral Production, and Gehan Jayawardhana*

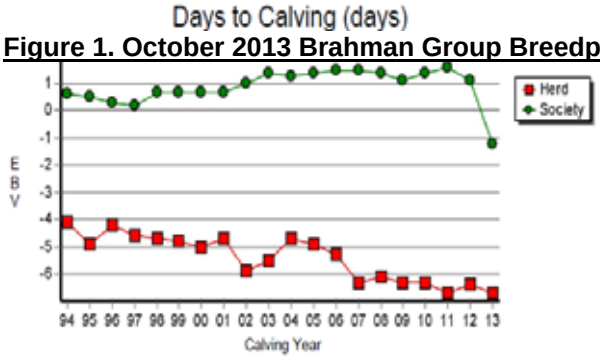
The annual Douglas Daly Research Farm (DDRF) bull tender was completed on 15 November 2013 with full clearance. All of the 58 Selected Brahman, 40 Composite and 4 Senepol X bulls were sold. A summary of the prices is in Figure 1.

**Table 1. Summary of bull tender prices by breed**

| | Brahman | Composite | Senepol X |
|---|---|---|---|
| Average Price | $1,600 | $1,300 | $700 |
| Top Price | $4,600 | $3,300 | $700 |

The bulls sold from DDRF are part of the Selected Brahman and Composite program managed by the NT DPIF. This herd undergoes rigorous selection for fertility traits and consequently produces sires that have some of the best EBVs for fertility. Scrotal circumference has been identified by the Beef CRC as a trait that is correlated with heifer age of puberty and female days to calving. It can be seen from the graphs in Figure 1 comparing the DDRF herd with the breed average that the scrotal circumference and days to calving EBVs of the DPIF Selected Brahmans and Composites have moved away from the breed average.
The use of EBVs in selection of potential sires is a tool to show the genetic contribution a particular bull will have on the performance of your herd for particular traits. This is extremely helpful when you have a particular goal in mind for the direction of your business. It can be confusing when looking at the raw EBVs to decide which animal has the right genetics for you. This is why selection indexes are created. A selection index aims to put emphasis on the traits you feel are the most important for your market or environment, for example the Northern

Live Export Selection Index which gives a dollar value for traits that are important to producers supplying Live Export.



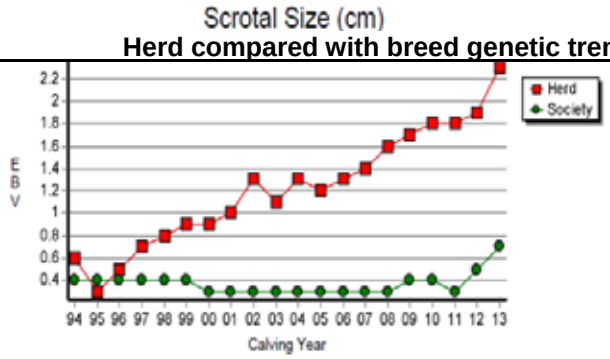




**Figure 1. October 2013 Brahman Group Breedplan. Herd compared with breed genetic trends.**

The breeding goal for the DDRF herd is to breed cows that will produce a calf each year from 3 years of age. This objective is achieved in a number of environments as the animals are at DDRF till 3 years of age, after which the Brahmans are sent to Kidman Springs (VRD). To achieve this objective selection has been performed in both females and bulls. Females are culled if they are not pregnant and wet in first round and bulls are selected at 12 and 18 months for breeding. The bulls are selected on a combination of scrotal circumference, growth and dam performance. To continue to have a large variety of genetics to choose from semen is sourced from bulls with a large scrotal circumference EBV and low days to calving (DTC) EBV. The DTC EBV is calculated by the date when bulls are put in to the birthdate of the calf. The average gestation length is 0 when looking at a DTC EBV and so; a negative DTC EBV indicates a cow that conceived quickly when the bulls were introduced. In the DDRF herd this identifies the females that can conceive whilst lactating. Selection of bulls that has good EBVs in traits required to achieve your breeding objective is important as he will continue to influence the makeup and performance of your herd for the next 15 years.

Accessing Breedplan gives you the option of using existing selection indexes such as the Northern Live Export Selection Index or customising a selection index to value animals in relation to your breeding goal. The selection index in Fig.2 has been developed with emphasis on fertility with moderate growth by weighting scrotal circumference, 600 day growth, DTC and moderate mature cow size. This index is placing huge importance on fertility. Figure 2 shows a comparison between herd average DTC EBVs and the selection index we have customised.

Figure 2 shows the DDRF Composites and Brahmans have the best herd average for DTC and based on the selection index created to identify fertile herds. These herds will breed bulls that will give you sons with large scrotal circumferences and good growth to 600 days and daughters with a moderate mature cow weight, shorter gestation and quicker reconception which is important to keep cows calving at the optimum time of the year.
It is important to understand that this article discusses only the genetic contribution a bull could bring to your herd.

***Production of an animal = genetic ability of the animal x environment (nutrition)***

The number of calves a cow will produce is still related to nutrition. However, if nutritional requirements are met through appropriate stocking rates, supplementation and breeder management such as controlling the time of calving, the genetics will be most important as the gain is cheap, cumulative and permanent. The animals with superior fertility genetics are identified every muster when looking for the wet pregnant cows that are on the same nutrition as those that have a calf every 2 years.

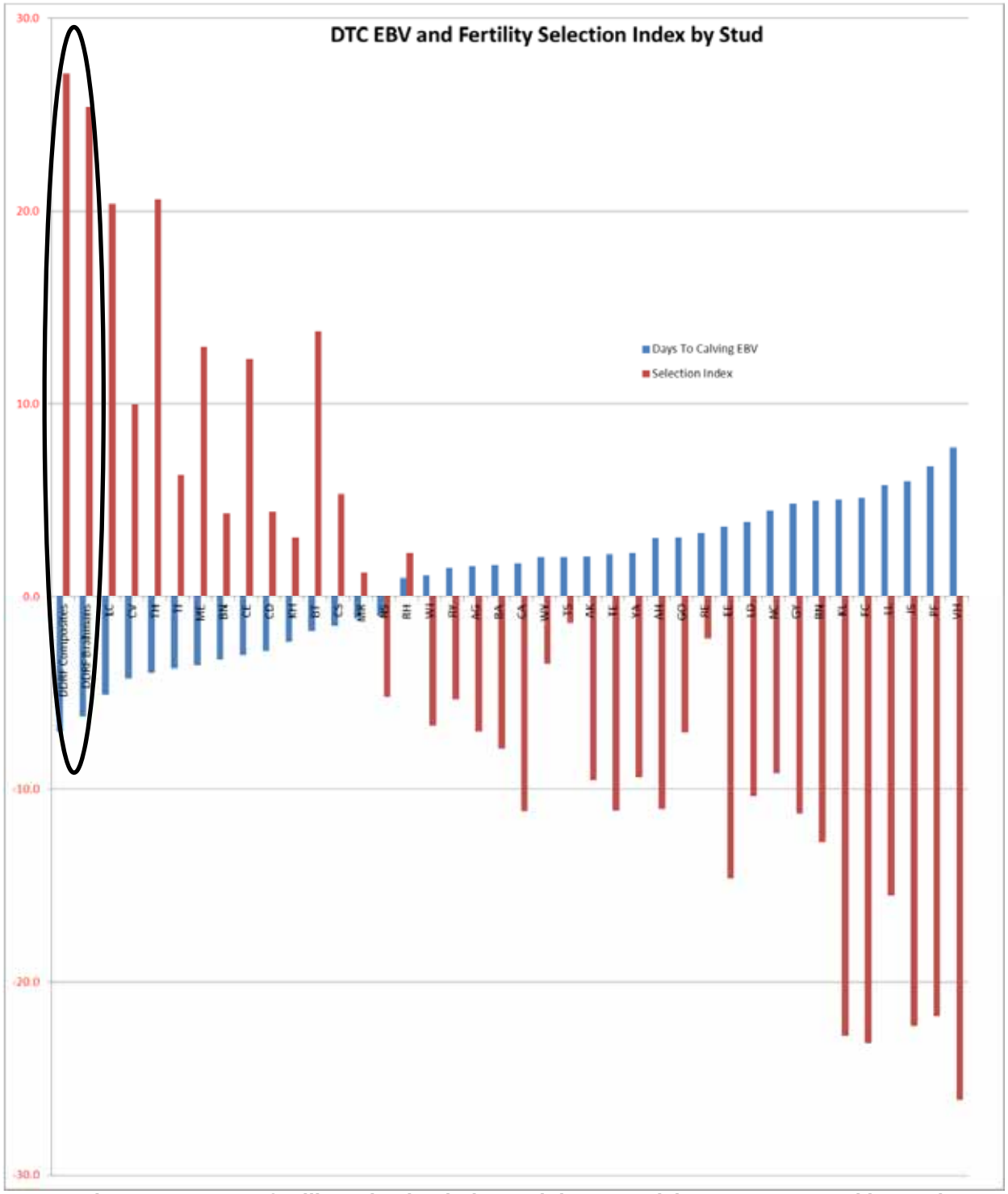



**Figure 2. Average fertility selection index and days to calving EBVs grouped by stud**

# Senepol crossbreeding meat quality research summary

*Tim Schatz, Principal Pastoral Production Research Officer*
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*Summary: Recent research has found that crossbreeding with Senepols may be a way for northern cattle producers with Brahman herds to produce animals with improved meat quality. Research conducted by the NT Department of Primary Industry and Fisheries (DPIF) on F1 Senepol x Brahman cross steers and Brahman steers (that had been managed together all their lives) found that meat from the F1 Senepols was more tender.*

NT DPIF has been conducting a research program to determine whether crossbreeding with Senepol bulls is a viable way for north Australian cattle producers with Brahman herds to produce animals that will perform well under harsh northern conditions, and will be suited to both the South East Asian live export market and the Australian domestic market. This would increase the marketing options for northern producers as their cattle often suffer a price penalty in Australian domestic markets due to a perception that Brahman cattle from northern Australia have poor meat tenderness.

Live export has been the main market for many northern producers for a number of years and demand for their Brahman cattle has been strong as the cooking methods used in South East Asia mean that meat tenderness is less of an issue. However it would be advantageous for northern producers to be able to produce cattle that are in demand in both the live export and Australian domestic markets so that they are less vulnerable to live export fluctuations. It was thought that crossbreeding Brahman herds with a tropically adapted *Bos taurus* breed such as the Senepol (which is known to have the desirable traits of tropical adaption, good meat quality and polledness) may be an efficient way of producing animals that perform well under north Australian conditions and will be suited to both the live export and Australian domestic markets. The NT DPIF has been conducting research to test this strategy since 2008 and part of this research has been to determine whether the F1 Senepol x Brahman cross actually grades better in abattoirs and has more tender meat than Brahmans.

*Photo: F1 Senepol and Brahman steers in the Smithfield feedlot.*

This research compared the meat quality of F1 Senepol x Brahman steers and Brahman steers that had been bred on DPIF research stations in the Katherine/VRD region and then grazed improved pasture together for a year after

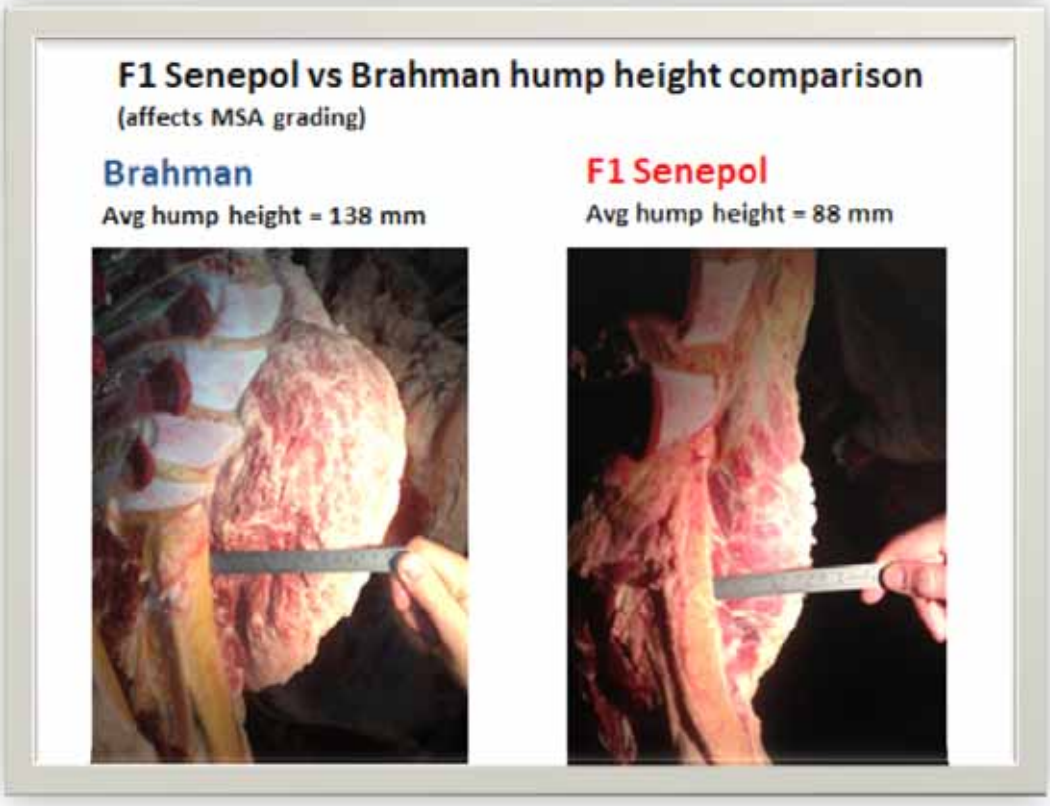
weaning at the Douglas Daly Research Farm (NT). In July 2013, 25 steers of each genotype were transported to the Smithfield feedlot (Proston, Qld) where they were fed for 73 days and then slaughtered at the Dinmore abattoir where MSA assessment was conducted on the carcases. Striploin samples were collected from each carcase and evaluated for tenderness and other meat quality parameters at the University of New England (UNE) meat science laboratory.

MSA carcase assessment found that the F1 Senepol steers on average were graded 2 boning groups better than the Brahmans (the price received for carcases is determined by the boning group that they are graded into). The average boning group was 6.3 for the F1 Senepols and 8.3 for the Brahmans. Shear force tests conducted by the UNE meat science lab were used to assess the tenderness of the meat and the striploin samples from the F1 Senepol steers were found to have significantly lower (P=0.003) average shear force values than the Brahmans (3.43 kg vs 3.86 kg).

It should be noted that while the meat of the F1 Senepols was found to be more tender than the Brahmans, that the meat from the Brahmans in this study was actually found to be quite tender (shear force values of below 4.0 kg are considered to be tender). The shear force values for the Brahman steers in this study were quite low in comparison to values that have been found from other Brahmans (evaluation of data from 1,298 Brahman striploin samples found that the average shear force was 5.5 kg with a range of 2.53 to 16.88 kg - Rod Polkinghorne *pers. comm*.). The good tenderness results found for both genotypes in this study is likely to be due to the fact that they had grown well and were relatively young for their weight at slaughter (the average estimated age at slaughter of the steers was 21.5 months and the average carcase weight was about 238 kg).

This meat quality study combined with previous research which has found that the F1 Senepols perform at least as well or better than Brahmans in every growth and fertility measure studied so far by the NT DPIF, suggests that crossbreeding with a tropically adapted *Bos taurus* breed such as the Senepol may be a good way for north Australian cattle producers to increase their marketing options.

Note: while Senepols have quite good tick resistance, they are as susceptible to tick fever as British *Bos taurus* breeds and so it is worthwhile ensuring that Senepol bulls have been vaccinated for tick fever if they are going to be transported to locations where ticks are a problem. Tick fever is not likely to be a problem in their progeny if they are used in a crossbreeding program with Brahman cows as they will have better resistance due to their higher Brahman content, and also calves can acquire resistance to tick fever if they are bitten by ticks while suckling from cows that have resistance.



factsheet

ANIMAL HEALTH AND WELFARE

# The Australian Poll Gene Marker test

## What is the Australian Poll Gene Marker test?

The Australian Poll Gene Marker test is used to measure the likelihood that a polled animal only carries the polled gene.

The test is used to determine if an animal is 'true polled', known as homozygous (PP), or heterozygous (PH).

Identifying breeding animals that are 'true polled' and carry two copies of the poll allele will dramatically reduce the requirement for dehorning in subsequent generations.

The test was first released in 2010 by the CRC for Beef Genetic Technologies. It has since been refined with increased accuracy and application across a wider number of breeds.

## Which breeds can the test be used for?

The test was initially developed on Brahmans and can now be used with a high degree of confidence across a range of tropical and temperate breeds. Research has shown that the test has a high degree of accuracy and will return an informative result in most cases.

Table 1 opposite outlines the number of animals by breed that were tested and the proportion of animals for which the test returned an informative result.

*Table 1: Number of polled animals tested and proportion of genotypes assigned with confidence (% non-ambiguous) for nine breeds assessed during polled marker field testing.*

| Breed | Number tested | % informative result |
|---|---|---|
| Brahman | 299 | 84% |
| Brangus | 104 | 89% |
| Charolais | 65 | 89% |
| Droughtmaster | 102 | 77% |
| Hereford | 174 | 96% |
| Limousin | 297 | 95% |
| Santa Gertrudis | 225 | 92% |
| Shorthorn | 167 | 94% |
| Simmental | 118 | 93% |

The test has potential application in a variety of other breeds, including cross-bred herds. Laboratories that provide the test can advise on the applicability of the test on different herds.

## How accurate is the test?

In most cases where an informative result is returned the accuracy is high – above 98%. If the result is less than 90% accurate, no result will be returned.

## How is this test different to the previous test?

The first test was based on a single DNA marker, whereas this new test includes information from a further nine markers.

In some breeds, such as Brahman, a single allele at the DNA marker was almost always associated with polledness and other alleles always associated with horned, making the test highly accurate. However, in other breeds, multiple alleles had associations with both polledness and horned, so the test could not accurately distinguish between PP and PH animals.

By using information from an additional nine markers, the new test can create haplotypes. This allows more accurate tracking of alleles and their association with polledness. The additional information also increases test accuracy and the proportion of animals for which the test returns an informative result.

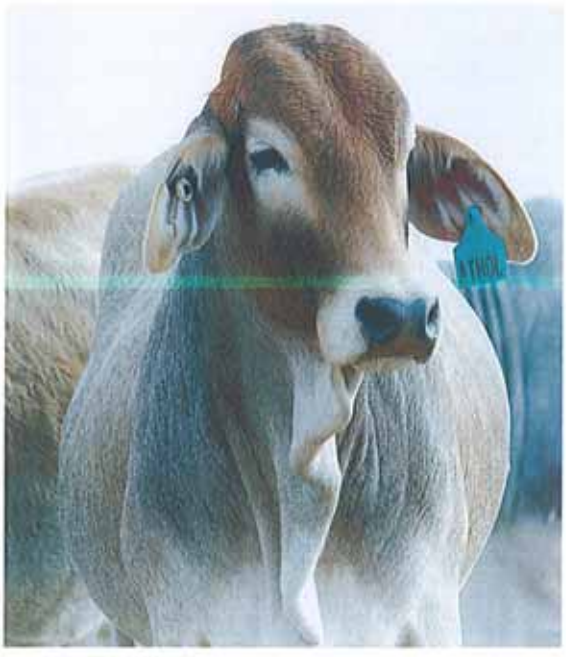
## Who performs the test?

The Australian Poll Gene Marker test will be available from the Animal Genetics Laboratory at the University of Queensland and Zoetis Animal Genetics.

The cost of the test will be set by individual providers. Producers can contact the service providers directly, or through the relevant breed association or society office.

Hair, blood, tissue or semen samples can all be used to perform the test.

Providing information on the breed and phenotype of the animals being tested when submitting the sample will assist increasing the proportion of animals that an informative result can be returned for.



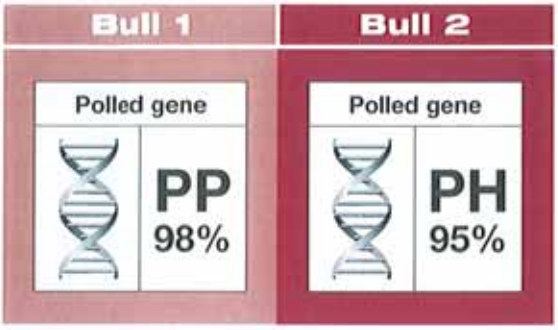
## How are the results reported?

The results will describe the percentage chance of the most likely genotype. The genotypes that will be reported are homozygous polled (PP), heterozygous polled (PH) or homozygous horned (HH).

The accuracy of the test result will be reported alongside the most likely genotype. This accuracy will range from 90% to 99%.

If the test does not return an informative result, the accuracy is less than 90%, the result will be returned as Not Determined (ND).

*Figure 1: Example of Australian Poll Gene Marker test results.*




### Definitions

**Allele** –a variant of the genetic code at the gene. At polled we assume two alleles, P and H.

**Gene** – unit of genetic code that influences phenotype.

**Genotype** – each animal carries two alleles, these comprise the genotype.

**Haplotype** – is a set of characteristics on a single chromosome that are statistically associated.

**Heterozygous** – the two alleles comprising the animal's genotype are different.

**Homozygous** – the two alleles comprising the animal's genotype are the same.

**Phenotype** – the trait as observed in the animal. Phenotype is affected by both genetics and environment.

### Further information

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# HRM and cell grazing: a review of the evidence base

*By John McIvor*

Debate continues over the relative merits of continuous grazing and forms of rotational grazing, especially Cell Grazing. A review was conducted of comparisons of continuous grazing and Cell Grazing published in peer-reviewed journals in which measurements were made of animal performance and pasture and soil characteristics. The review confirmed the conclusion of Briske et al. (2008) that plant and animal production are equal or greater in continuous grazing compared to rotational grazing. In those trials where various plant and soil measurements other than plant production were considered, the results for continuous and Cell Grazing were the same in the majority of cases with only 35% of the cases showing some benefit of Cell Grazing. This suggests that cell grazing can affect some soil and plant measures, relative to continuous stocking, but such effects are not consistent and were not reflected in superior plant and animal production during the period of the trials. There is growing recognition of the need to improve grazing management, in particular management of stocking rate, but the experimental evidence indicates that adoption of cell grazing is not superior to alternative approaches for improving grazing management.

http://www.mla.com.au/Research-and-development/Final-report-details?projectid=15448

*Cattle in the Douglas Daly Research Farm cell grazing trial*

# A national guide to describing and managing beef cattle in the low body condition

MLA Publication

Ian Blackwood[1], Steve Exton[2], Britt Littler[2] and Jason Siddell
[1]Industry Beef Consulting
[2]NSW Department of Primary Industries

http://www.mla.com.au/News-and-resources/Publication-details?pubid=6198

This guide provides an objective description system to assess beef cattle in low body condition and guidance on their management.

# Exotic Rats Tail Grass: Ask the Expert

Wayne Vogler from Biosecurity Queensland has studied exotic rats tail grasses for many years. He was the expert guest speaker at the Emerging Weeds meeting held at the Douglas Daly Research Farm on 22 August 2013.

**IMPACTS**

'Exotic rats tail grass is unpalatable and very competitive. Cattle won't do well on it. In fact the low digestibility and nutrition means they can effectively starve. Dense infestations can double the time it takes to reach market weight and halve stocking rates.

'Realising that you have rats tail grass is the first challenge. It doesn't stand out very well from other grasses. [For assistance with identification, see the Identification link on the webpage http://www.ntca.org.au/our_land/landcare_news.html]

Wayne Vogler discussing exotic rats tail grass

**INVASION**

'It is an opportunistic invader that isn't fussy about soil type. In southern Qld some of the major incursions have followed droughts. Rats tail grass can expand quickly if country has been pushed too hard and ground cover has opened up. So grazing management is a big factor.

'Seeds are easily spread thanks to a sticky mucilage when the seed gets wet. Mustering through rats tail grass on a dewy morning or after rain can turn the underbelly of a horse red with seed. Anything moving through mature seed heads when they are moist will transport the seed.

'The seed sticks to transporters until it gets brushed or washed off. So don't be surprised to find it popping up in strange places. Controlling vehicle and cattle access into invaded areas is good practice, especially after dew or rain.

'Although it's highly unpalatable to livestock they will bite off the seed heads. Almost all that seed will go straight through the gut and still be viable.'

CARING FOR OUR COUNTRY

Wayne has measured 85,000 seeds per square metre of infested area. Greater than 90% of that seed is viable. Seed life is approximately eight years in Qld, but most seed will lose viability after 2-3 years. In a glasshouse a seedling can produce seed 15 weeks after germination.

**MANAGEMENT**

'There's no silver bullet for rats tail grass. Plants are tolerant of fire and slashing. Experience shows that herbicides alone haven't done the job. They need to be integrated with good grazing management, and where possible ploughing and renovating pasture.

'Rats tail grass has a very small seed and the seedlings take a while to get going. This means they are susceptible to competition after germination and can die off if there is a poor start to the season. So maximising cover and health of competing plants is vital.

'The seed doesn't have a burial mechanism, so fire can kill a fair bit of the seed. But fire also reduces competition and can create a nice seed bed. So any use of fire needs to be followed up with other control techniques.

'Well managed and fertilised Rhodes grass will outcompete it and Rhodes grass is relatively resistant to glyphosate. So replacing areas with competitive pastures where possible has promise. You can also spray it out and sow a fodder crop to manage germination with herbicide like atrazine to run the seed bank down.

'The main chemical used to control rats tail grass is the selective and residual herbicide flupropanate. The liquid form is sprayed onto the plant and rainfall washes it into the ground. Granular flupropanate was developed for aerial application to minimise the risk of seed spread from ground rigs, but it can also be applied from the ground. The granule is designed to fall through trees and shrubs and is quite stable in sunlight so can be left for some time before rainfall.

'Flupropanate is a slow acting residual herbicide that can take 6-12 months to kill plants. It has a 4 month withholding period for broad-acre application and 14 days for spot application. It isn't known how long it stays active in Top End soils.

'At label rates flupropanate is selective and native grasses aren't killed. But increasing the rate or overlapping applications can kill natives and potentially result in bare ground. Soil type will influence selectivity and local trials are recommended.

'Flupropanate efficacy is very dependent on soil type. It's less effective on sandy soils where it may be leached before it can work. Your length of residualness in this situation is probably reduced. It works best on clay soils and some level of clay in the soil is important.

'Rats tail has been unsuccessfully tested for biological control in the past. However, a fungus in New South Wales has recently been active on another introduced *Sporobolus* grass (Parramatta grasses). The fungus is being tested on giant rats tail grass in the Mackay region. In the long term there may be potential to see if it can work in NT conditions.'

This project is supported with funding under the Australian Government's Caring for our Country Initiative.
Thanks to Wayne Vogler and Biosecurity Queendsland (Queensland Government)

# Exotic Rats Tail Grass: Chemical Control Options

Flupropanate is the most commonly used herbicide for exotic rats tail grass control. It is a residual herbicide and selective when applied at label rates. Trials being run over the next 12 months will confirm its effect on native and improved pasture grasses.

Flupropanate is expected to be most effective against new seedlings. Therefore, it is perhaps best to apply it in the late dry season prior to seedling emergence.

Liquid and granular forms of flupropanate are available. The liquid form (e.g. Taskforce or Tussock) is applied directly to plants and surrounding vegetation within a 2 metre radius to control seedlings. It is a stable chemical that dries on leaves and is then dissolved by rainfall and infiltrates into the soil. It is thought that liquid application provides a better coverage than granules because the chemical does not move in the soil. Granules may be better for single plants or aerial application for which they are designed.

It can take 3-12 months to kill plants, although they may brown off earlier. This means there is a risk that plants will produce seed before they die. To address this, glyphosate can be applied to plants when they are actively growing.

The risk of using glyphosate is that it will kill neighbouring plants and open up space for rats tail seed germination and seedling establishment. This risk is reduced if the residual has already been applied to the area to help control emerging seedlings. Glyphosate and flupropanate can be mixed but ideally they should be applied at different times, and mixing can reduce the effectiveness of flupropanate.

The length of time that flupropanate is active in the soil is not known in the Top End but is expected to be at least one wet season. This will be clarified in 2014 following trials. There is a 14 day with-holding period for spot spraying and 4 months for blanket spraying.

Liquid flupropanate (Taskforce) is applied at 200ml per 100L of water, spraying to the point of runoff (2L/ha). A wetting agent is not required unless specified on the label.

CARING FOR OUR COUNTRY Current September 2013

# Pastoral Industry Feed Advisory Bulletin now available

*Dionne Walsh, Rangeland Program Manager*

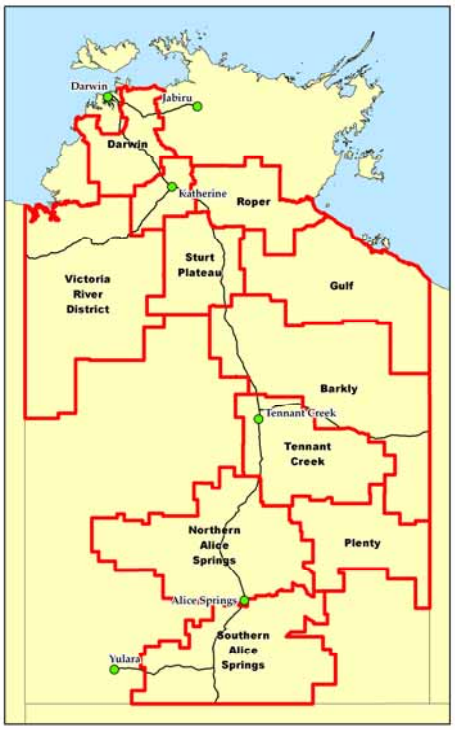
The DPIF has a new information bulletin that summarises current feed supplies, seasonal conditions and fire risk for each of the 11 pastoral districts in the NT.

This bulletin is produced quarterly and the March 2014 bulletin is now available on our website as a pdf or Word document:

http://www.nt.gov.au/d/Content/File/p/pi/outlook/2014-03_NT_Pastoral_Feed_Outlook.pdf

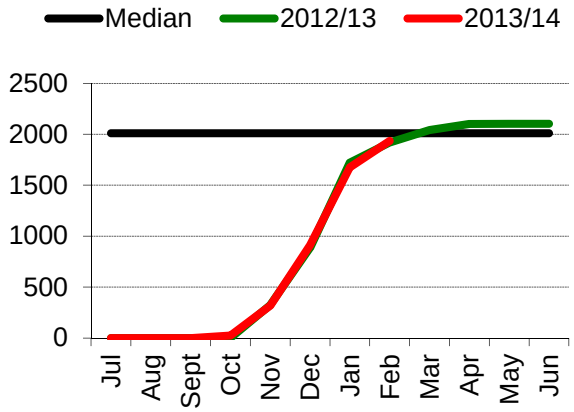
http://www.nt.gov.au/d/Content/File/p/pi/outlook/2014-03_NT_Pastoral_Feed_Outlook.docx

If you would like to receive an email alert when a new bulletin is available, please contact dionne.walsh@nt.gov.au.



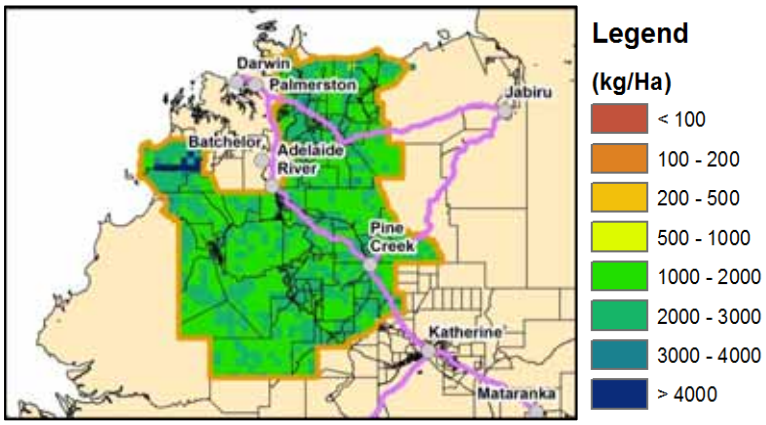

Following are some examples of what can be found in the Bulletin.

**Running total of median pasture growth (kg/ha):**



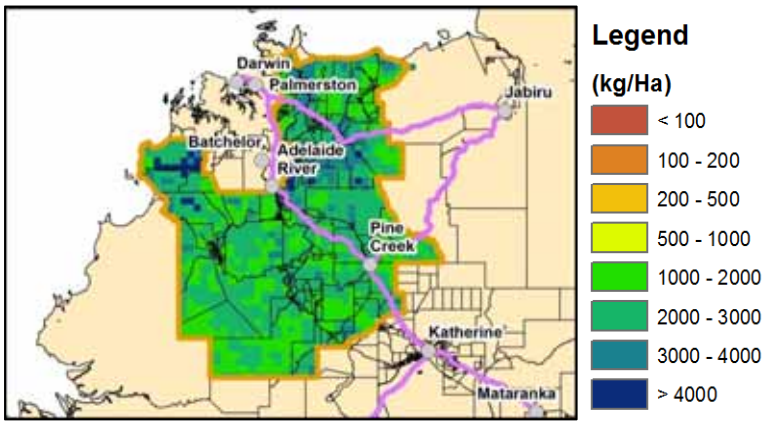

This graph shows that the long-term median pasture growth in the Darwin pastoral district is about 2,000 kg/ha. The red line shows that 2013/14 pasture growth is tracking similarly to 2012/13 and has almost reached the long-term median this wet season.

**Total 2013/14 pasture growth (July 2013 to February 2014)**




This map shows how much pasture has grown across the Darwin district this wet season. Most areas have received more than 1,000 kg/ha of growth.

**Current estimated total standing dry matter (as at end February 2014)**




This map shows how much pasture is estimated to be standing in the Darwin district. Most areas have more than 1,000 kg/ha of standing pasture biomass, with some having very high levels above 4,000 kg/ha. [But see box below].

This is just a taste of what is in the Bulletin. The information can be used to:

- see how this year compares to last year and to the long-term
- identify whether you might have potential feed surpluses or deficits
- assess fire risk
- get an idea of whether there might be more growth this season.

Feedback on the Bulletin is welcome, please email dionne.walsh@nt.gov.au, or chris.materne@nt.gov.au

The pasture and fire risk information in the Bulletin is derived from AussieGRASS. AussieGRASS is a model that simulates pasture growth and standing biomass using climate data, vegetation mapping, fire history and regional estimates of grazing pressure. Note that the model does not use stocking rate data for individual properties. Where stock numbers are significantly higher or lower than typical for a district, model estimates of total standing dry matter may be erroneous.

*Native pastures*

# 2010 NT Pastoral Industry Survey shows ongoing development and intensification of management

The 2010 NT Pastoral Industry Survey report is now available online and in hard copy. It follows on from the 2004 pastoral industry survey, which was widely used as a planning and benchmarking tool. The survey seeks to document cattle and land management practices in order to monitor industry changes and identify industry needs. Between March 2011 and February 2012, 127 cattle producers were interviewed across the Territory, generally over several cups of tea! While the initial aim was to finish surveying by mid-2011, the suspension of live cattle exports led to the suspension of surveying! DPIF staff didn't start surveying again until September in 2011, and still focussed on capturing practices of the 2010 calendar year. Questions regarding development plans and challenges and issues facing cattle producers were undoubtedly affected by the export suspension, which left a legacy of uncertainty and a decline in industry confidence.

What's in the report? You will find the percentage of producers carrying out different cattle and land management practices, as well percentage of cattle under different management practices. Some of the topics covered include:

- infrastructure development
- turnoff and market
- cattle management practices
- animal health
- grazing land management practices
- weeds, pest animals
- improved pastures and hay
- producer attitudes about the challenges of managing pastoral businesses.

The report breaks the results down into the regions of the NT (see Table 1). Separate reports are due to be released soon for each region. The following is a snapshot of the report.

***Table 1: Regional differences reported in the 2010 NT Pastoral Survey***

| Region | Number of properties surveyed | Average property size ($km^2$) | Average herd size (head) | Average number of staff |
|---|---|---|---|---|
| **Alice Springs** | 31 | 3,799 | 5,800 | 6 |
| **Barkly** | 13 | 6,653 | 36,000 | 27 |
| **Katherine** | 63 | 2,232 | 11,000 | 8 |
| **Top End** | 20 | 497 | 3,600 | 5 |
| **NT-wide** | 127 | 2,794 | 11,000 | 9 |

***Infrastructure development***

Based on producer estimates, 85% of the surveyed area was utilised for grazing purposes, 4% was classified as not yet developed, another 8% was classified as unproductive and the remainder was not classified. The average property size was 2794 $km^2$, down from 3122 $km^2$ in 2004. This may be due to surveying a different sample of properties, but potentially reflects property subdivisions that occurred between surveys. Private businesses owned more properties and land area than corporate companies, but companies ran the largest percentage of cattle, reflecting their greater presence in premier cattle country in the Barkly region and the Victoria River District in the Katherine region.

Data on infrastructure development, changes in carrying capacity suggest that while a moderate investment in development occurred between the surveys, producers did not realise the increases in carrying capacity that they had anticipated. In 2004 producers predicted a 29% increase in carrying capacity by 2009 and a 54% increase by 2014, based on their plans for infrastructure development. Producer estimates in the 2010 survey suggested that there was only a 10% increase in adult equivalents across the NT between 2004 and 2010, lower than anticipated. Sixty seven per cent of producers carried out water point development and 48% carried out paddock subdivision during 2009 and 2010. This reflected the development intentions captured in the 2004 survey where 80% of producers stated an intention to develop water points and 60% to subdivide paddocks.

Interestingly, there were no major differences in number of paddocks, paddock sizes or number of waters between the surveys, despite the planned and stated infrastructure development. Although Barkly producers did report a higher number of waters per property in 2010 compared to 2004.

On average producers spent $200,000 per property on capital development over 2009 and 2010. This equated to $21 per adult equivalent (AE) run. Capital expenditure per property was highest in the Barkly region, no doubt related to larger property sizes. However capital expenditure per adult equivalent run was highest in the Top End at $49/AE suggesting the greatest intensity of development occurred there.

Producers remained confident about further development potential, predicting a 17% increase in carrying capacity by 2015 and a 25% increase by 2020 in the 2010 survey, driven largely by Barkly and Katherine producer estimates. Crude indicators of watered area (dividing the grazed area by the number of water points) suggest that there is greater development potential in the Katherine and Barkly regions compared to other regions regarding water point development.

***Markets***

Live export remained a major market for NT producers over both survey periods, with an estimated 57% of turnoff going to live export in 2010. The only significant change was an increase in the percentage of producers sending cattle to abattoirs, from 38% in 2004 to 55% in 2010. This no doubt reflected the change in cull cow markets as a result of Indonesia enforcing the 350 kg weight limit in early 2010.

***Breeder management***

There was some evidence of increased intensification of breeder management between the survey periods. In 2010 there was an increased number of producers carrying out three rounds of mustering, pregnancy testing, segregating breeders based on pregnancy status, weighing heifers prior to joining and culling empty heifers after joining. The most significant change was the percentage of producers individually identifying animals for performance recording purposes, which doubled. A moderate number of Barkly and Alice Springs producers used electronic identification tags (EID) in 2004 as this was required when transporting cattle interstate, but very few producers in the Top End and Katherine regions did. In 2010 47% of producers in the Katherine region and 64% in the Top End reported individually identifying cattle for management purposes, which represented an 89% and 94% increase, respectively.

***Bulls***

The average reported bull percentage decreased from 4.3% in 2004 to 3.6% in 2010. There was no change in semen testing of bulls prior to purchase (43% of properties), suggesting that this had not led to lowered bull numbers. There was an increase in the percentage of producers breeding their own bulls, from 24% in 2004 to 36% in 2010.

***Supplementation***

Fewer producers were supplementing cattle in 2010 (80%) compared to 2004 (92%). Dry season supplementation was more common than wet season supplementation across both surveys, with 80% and 62% of producers supplementing across the Barkly, Katherine and Top End regions in 2010, respectively. Those that supplemented in the wet season supplemented a greater proportion of their stock, with 49% of stock on the surveyed Barkly, Katherine and Top End properties supplemented during the 2010 dry and 42% supplemented during the wet. Producers in the Katherine and Top End regions had the highest reliance on supplementation. Conversely, Alice Springs producers carried out the least supplementation, with 30% of producers feeding for part of the year, and another 26% supplementing all year.

***Staff***

On the surveyed properties, 566 seasonal staff and 585 permanent staff were employed in 2010, suggesting that approximately 2100 staff were employed by pastoral properties in NT in 2010, based on having surveyed 54% of enterprises.

This is only a taste of NT Wide survey results! If you want to learn more about particular practices, email trisha.cowley@nt.gov.au for a hard copy or grab it online at:

http://www.nt.gov.au/d/Content/File/p/pi/PastoralSurvey/NT%20Wide.pdf

Northern Territory Government

DEPARTMENT OF **PRIMARY INDUSTRY AND FISHERIES**

# 2010 PASTORAL INDUSTRY SURVEY

## Northern Territory Wide




Northern Territory Government

## Animal Biosecurity Branch
# Livestock Movement requirements

DPIF **Animal Biosecurity Branch** website

www.dpif.nt.gov.au/animalhealth click on Livestock Movement requirements

When moving livestock from one property to another there are mandatory requirements to be fulfilled depending on what type of animals are being moved, and where they are being moved to.

- Moving livestock within the Northern Territory
- Moving livestock to the Northern Territory from Interstate
- Moving livestock from Interstate thru the NT (Transit)
- Moving livestock Overseas
- Land Transport Standards (LTS) apply

Please contact a Livestock Biosecurity Officer for further assistance:

| **Darwin Region** | **Katherine Region** | **Tennant Creek Region** | **Alice Springs Region** |
|---|---|---|---|
| Ian Doddrell (RLBO)<br>Ph: 08 8999 2030 | Greg Scott (RLBO)<br>Ph: 08 8973 9754 | Tom Haines (RLBO)<br>Ph: 08 8962 4458 | Greg Crawford (RLBO)<br>Ph: 08 8951 8125 |
| Rob Wait (LBO)<br>Ph: 08 8999 2034 | Josh Haigh (LBO)<br>Ph: 08 8973 9767 | Greg Maguire (LBO)<br>Ph: 08 8962 4492 | |

DEPARTMENT OF **PRIMARY INDUSTRY** AND FISHERIES

Northern Territory Government

## Animal Biosecurity Branch
# Brands in the NT
## Where can you use your Brand (branding iron)?

What property is your **Three-letter Brand** and/or **Distinctive (symbol) Brand** registered for use on?

Are you only branding cattle and/or horses on the property written on your **Certificate of Registration?**

Alternatively, check on the **NT Brands Register Search Database** http://brand.primaryindustry.nt.gov.au/

**Please remember:**

- A brand is registered to a person or company for use on a nominated **NT property only.**
- Under no circumstances are NT brands to be used on another property without special permission from the Registrar (together with Owners permission to use run – see Brands in the NT website for paperwork).
- This means the brand can only be used by the registered owner (or their representative) on the registered NT property as stated on NT Brand Certificate/s.
- It does not restrict branded cattle being agisted on other properties.
- To brand on a NT property not registered with the Registrar is an offence under the *Livestock Regulations* may incur a penalty.

Check out our Website www.dpif.nt.gov.au/animalhealth **Brands in the NT** or contact your RLBO for assistance

| **Darwin Region** | **Katherine Region** | **Tennant Creek Region** | **Alice Springs Region** |
|---|---|---|---|
| Ian Doddrell (RLBO)<br>Ph: 08 8999 2030 | Greg Scott (RLBO)<br>Ph: 08 8973 9754 | Tom Haines (RLBO)<br>Ph: 08 8962 4458 | Greg Crawford (RLBO)<br>Ph: 08 8951 8125 |

DEPARTMENT OF **PRIMARY INDUSTRY** AND FISHERIES

Northern Territory Government

DEPARTMENT OF **PRIMARY INDUSTRY** AND FISHERIES

# Pastoral Market Update

## Live Cattle Exports via Darwin Port – AUGUST 2014

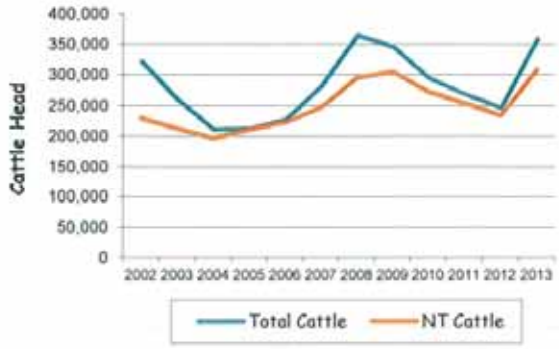
# Please note that the "NT CATTLE" figures are NT cattle exported through the Port of Darwin only, some NT cattle are exported through interstate ports.

| Destination | TOTAL CATTLE (including interstate) | | | | | | | # NT CATTLE | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2012 | 2013 | Last year 31/08/13 | YTD 31/08/14 | 1-31 AUG 2014 | Previous Month | Difference | 2012 | 2013 | Last year 31/08/13 | YTD 31/08/14 | 1-31 AUG 2014 | Previous Month | Difference |
| BRUNEI | 4,639 | 4,043 | 3,034 | 3,123 | 0 | 1,045 | -1,045 | 4,639 | 4,043 | 3,034 | 3,123 | 0 | 1,045 | -1,045 |
| INDONESIA | 201,748 | 282,022 | 171,439 | 248,959 | 35,941 | 27,511 | +8,430 | 189,994 | 243,978 | 147,025 | 159,464 | 25,841 | 23,604 | +2,237 |
| PHILIPPINES | 27,324 | 22,403 | 17,531 | 8,965 | 2,383 | 4,409 | -2,026 | 26,337 | 15,063 | 10,191 | 6,965 | 383 | 4,409 | -4,026 |
| SABAH | 460 | 0 | 0 | 0 | 0 | 0 | 0 | 460 | 0 | 0 | 0 | 0 | 0 | 0 |
| SARAWAK | 0 | 800 | 800 | 0 | 0 | 0 | 0 | 0 | 800 | 800 | 0 | 0 | 0 | 0 |
| W-MALAYSIA | 10,018 | 14,952 | 14,952 | 14,490 | 1,193 | 3,002 | -1,809 | 10,018 | 12,094 | 12,094 | 12,490 | 1,193 | 3,002 | -1,809 |
| VIETNAM | 2,801 | 35,396 | 20,185 | 41,749 | 5,251 | 17,113 | -11,862 | 2,801 | 32,806 | 18,185 | 30,549 | 2,251 | 15,613 | -13,362 |
| EGYPT | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOTAL | 246,990 | 359,616 | 227,941 | 317,286 | 44,768 | 53,080 | -8,312 | 234,249 | 308,784 | 191,329 | 212,591 | 29,668 | 47,673 | -18,005 |
| | | | | +89,345 | | | | | | | +21,262 | | | |

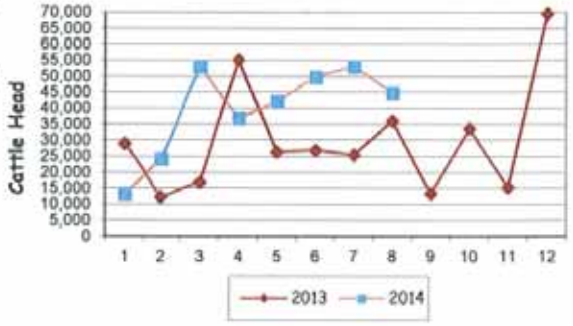
### AUGUST at a glance

- 44,768 head of cattle through the Port of Darwin during August, 8,312 less than July and 8,716 more than August last year.
- 2014 total cattle figures indicate 89,345 head more than last year. NT cattle 21,262 more than last year.

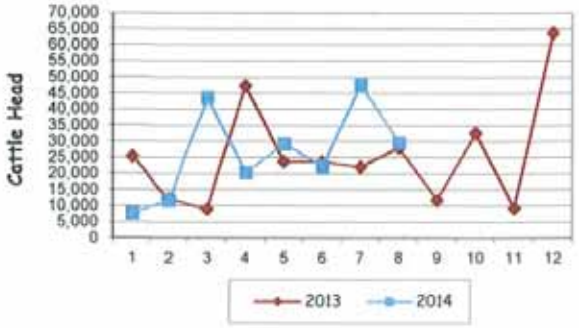
Live Cattle Exports thru the Port of Darwin (last 10 years)




TOTAL Live Cattle Exports thru Port of Darwin 2013 v 2014




NT Live Cattle Exports thru Port of Darwin 2013 v 2014




PREVIOUS 8 YEARS

| Total Cattle, Port of Darwin | | | | | | | | NT Cattle, Port of Darwin | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
| 227,648 | 283,046 | 364,944 | 347,314 | 295,605 | 269,617 | 246,990 | 359,616 | 223,407 | 247,281 | 295,539 | 304,818 | 272,749 | 253,797 | 234,249 | 308,784 |

## OTHER LIVESTOCK EXPORTS VIA DARWIN PORT (includes NT and Interstate Stock)

| Destination | Buffalo | | | Camels | | | Goats | | | Horses | | | Sheep | | | Pigs | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2013 | 2014 | 1-31 MAY | 2013 | 2014 | 1-31 MAY | 2013 | 2014 | 1-31 MAY | 2013 | 2014 | 1-31 MAY | 2013 | 2014 | 1-31 MAY | 2013 | 2014 | 1-31 MAY |
| BRUNEI | 400 | 0 | 0 | 0 | 0 | 0 | 1080 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| INDONESIA | 201 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PHILIPPINES | 199 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| W-MALAYSIA | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SABAH | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SARAWAK | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| VIETNAM | 0 | 1,821 | 867 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **TOTAL** | **800** | **1,821** | **867** | **0** | **0** | **0** | **1080** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |

## NATIONAL CATTLE PRICES - W/E 29/5/2014

**HEAVY STEER**

Estimated dressed weight price (cents/kg)

| | SALEYARDS | | | | O.T.HOOKS | | | |
|---|---|---|---|---|---|---|---|---|
| | NSW | QLD | SA | AV (Aust) | NSW | QLD | SA | AV (Aust) |
| This week | 365 | 281 | 370 | 351 | 337 | 310 | Nq | 341 |
| Last week | 364 | 299 | nq | 352 | 337 | 313 | Nq | 341 |
| Year ago | 326 | 283 | nq | 319 | 302 | 293 | nq | 305 |

**MEDIUM STEER**

Estimated dressed weight price (cents/kg)

| | SALEYARDS | | | | O.T.HOOKS | | | |
|---|---|---|---|---|---|---|---|---|
| | NSW | QLD | SA | AV (Aust) | NSW | QLD | SA | AV (Aust) |
| This week | 310 | 288 | 380 | 308 | 329 | 303 | Nq | 336 |
| Last week | 333 | 289 | 353 | 315 | 329 | 305 | Nq | 336 |
| Year ago | 289 | 270 | nq | 283 | 294 | 283 | Nq | 303 |

**MEDIUM COW**

Estimated dressed weight price (cents/kg)

| | SALEYARDS | | | | O.T.HOOKS | | | |
|---|---|---|---|---|---|---|---|---|
| | NSW | QLD | SA | AV (Aust) | NSW | QLD | SA | AV (Aust) |
| This week | 250 | 223 | 251 | 247 | 264 | 280 | 270 | 275 |
| Last week | 247 | 235 | 253 | 251 | 264 | 283 | 270 | 276 |
| Year ago | 204 | 215 | 234 | 211 | 224 | 243 | 215 | 229 |

**TRADE STEER**

Estimated dressed weight price (cents/kg)

| | SALEYARDS | | | | O.T.HOOKS | | | |
|---|---|---|---|---|---|---|---|---|
| | NSW | QLD | SA | AV (Aust) | NSW | QLD | SA | AV (Aust) |
| This week | 370 | 309 | 353 | 366 | 342 | 333 | 310 | 326 |
| Last week | 364 | 333 | 374 | 369 | 342 | 335 | 310 | 327 |
| Year ago | 344 | 283 | 321 | 318 | 303 | 305 | 310 | 315 |

**LIVE EXPORT QUOTES**

Estimated **live** weight price (cents/kg)

| | LIGHT STEERS (260-360 kg) | | LIGHT HEIFERS (260-360 kg) | |
|---|---|---|---|---|
| | Darwin | Broome | Darwin | Broome |
| This week | nq | nq | nq | nq |
| Last week | nq | nq | nq | nq |
| Year ago | 150 | nq | nq | nq |

**Prices courtesy of Meat & Livestock Australia**

mla market INFORMATION

www.mla.com.au

## CURRENCY EXCHANGE RATES

| Key Currencies *1AUD =* | Current 3.6.2014 | Previous month 1.5.2014 | 3 months ago 1.3.2013 | 1 Year ago 1.6.2013 | Pre-devaluation 01.07.1997 |
|---|---|---|---|---|---|
| **Brunei Dollar** | 1.14411 | 1.15481 | 1.12083 | 1.18785 | 1.076 |
| **Indonesian Rupiah** | 10,897.2 | 10,776.0 | 10,441.8 | 9,330.70 | 1830 |
| **Philippine Peso** | 40.6007 | 40.8769 | 40.0701 | 39.7728 | 19.84 |
| **Malaysian Ringgit** | 2.98918 | 3.02771 | 2.94482 | 2.90393 | 1.9 |
| **Euro** | 0.68034 | 0.68051 | 0.65517 | 0.73587 | N/A |
| **US Dollar** | 0.92626 | 0.93643 | .89904 | .95640 | 0.752 |
| **Vietnam Dong** | 19,433.5 | 19,677.9 | 18,832.9 | | |

**Prepared by the NT Department of Primary Industry and Fisheries**