Is polled, is good!
Polled gene test for Australian cattle breeds

Cassie Duggan, Pastoral Technical Officer, DoR Tennant Creek
Renee Golding, Beef Cattle Research Officer, Dor Katherine

Dehorning and its negative impact on productivity and especially its animal welfare implications are not only well understood by the Australian beef industry but also by animal activist groups. It has long been recognised that the industry needs to take steps to develop cost-effective and permanent alternatives, and the good news is that this is exactly what is happening!

Introducing the ‘Polled Gene Test for Australian Cattle Breeds’…

Collaboration between the Beef Co-operative Research Centre (Beef CRC), Meat & Livestock Australia (MLA), Commonwealth Scientific & Industrial Research Organisation (CSIRO), Animal Genetics & Breeding Unit (AGBU) at the University of New England and the University of Queensland (UQ) has developed a new DNA test to predict polledness in Australian beef cattle herds. Research trials conducted across Australia in Brahman, Santa Gertrudis, Droughtmaster, Hereford, Limousin, Brangus and Belmont Red cattle have proven successful with a high level of accuracy. Although there have previously been tests available internationally for European breeds, this will be the first test aimed at the Australian cattle herd which is comprised predominately of *Bos indicus* and *Bos indicus* cross animals.

Senepol cattle are a true polled breed, meaning when Senepol bulls are mated with horned cows all F1 progeny are polled. These are the first weaners produced from the Department’s Senepol Crossbreeding project being carried out at Kidman Springs Victoria River Research Station.

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The Katherine Rural Review is prepared by the Department of Resources, Katherine.

It is designed to provide advice to people in primary industry in the Katherine region.

For further information please contact Renee (08) 8973 9739.

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What will the test tell me?

Firstly it is important to note that the polled characteristic is dominant over the horned gene. This means that although a bull may be polled, he is still capable of siring horned calves (carries one polled gene and one horned gene otherwise known as heterozygous). Whereas if a bull is ‘true polled’, he carries two copies of the polled gene (homozygous) and will sire predominantly polled calves when joined to horned, scurred or polled females. The test will help you determine if your bull is ‘true polled’ (homozygous) or just polled (heterozygous). See the table below for possible genetic combinations for the polled and horned phenotypes (animal’s physical appearance).

<table>
<thead>
<tr>
<th>Genotype</th>
<th>Phenotype</th>
<th>Description</th>
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<tr>
<td>PP – homozygous</td>
<td>True poll</td>
<td>The animal carries two copies of the dominant polled gene and sires predominately polled calves.</td>
</tr>
<tr>
<td>PH – heterozygous</td>
<td>Poll or Scur</td>
<td>The animal is polled but carries a copy of the recessive horn gene, and will sire a proportion of horned calves. This genotype is also associated with scurs.</td>
</tr>
<tr>
<td>HH – homozygous</td>
<td>Horn</td>
<td>The animal posses two copies of the horn gene and will sire horned calves.</td>
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How do I get my animals tested?

Producers will need to provide a DNA sample of the animal they want to test as well as the phenotype of the animal (eg. Horned, polled, scurred or unknown). A DNA sample is easily obtained by pulling 30-40 hair follicles from the animals tail. Contact the UQ Animal Genetics Laboratory or your breed society to order hair collection kits.

What will it cost me?

The test is being offered to industry at $33.00 (inc.GST). This is a reduced price as the test is still in a validation phase to determine its accuracy in more extensive cattle populations.

Why I like polled beasts

“There are two main reasons why I like polled cattle. You can fit an extra two beasts on each truck deck; that equates to a considerable saving in freight costs. It’s also much safer for people handling the cattle. You might get a few bruises from a polled bullock, but you won’t get gored. I previously selected polled heifers and bulls in preference to cattle with horns. But that has meant a smaller pool of cattle to choose from. This could be why some people think breeding polled cattle negatively affects productivity. But you have to remember that Rome wasn’t built in a day. If you try and eliminate horns over night by selecting only polled animals you could well be losing productivity in other areas. I welcome a test where a producer is told straight away whether a beast is going to produce a calf with horns or not. That will allow us to make our selections much earlier when we have bigger mobs of cattle to choose from.”

Tom Mann, Hillgrove Station, north of Charters Towers, is around 42,500 hectares and carries between 5000 and 8000 head of cattle.

Source: ‘New DNA test for polled cattle: Developed for Australian breeds’ Beef CRC, MLA, CSIRO, 2010

For more information on this test visit [http://www.beefcrc.com.au/PolledGeneMarkerTest](http://www.beefcrc.com.au/PolledGeneMarkerTest)

A more detailed explanation of the polled and horned characteristics of cattle can be found in the Cattle and land management best practices in the Katherine region manual, page 65.

Source: Beef Bulletin and associated flyers (ed. July 2010). Published by the Beef CRC, MLA & CSIRO
Katherine to host ABARE–BRS’s Northern Territory Regional Outlook Conference

Phil Anning, Regional Manager, Department of Housing, Local Government & Regional Services

With a diverse range of industries including mining, agriculture and tourism, Katherine is a unique location for the Northern Territory Regional Outlook conference, hosted by ABARE–BRS.

The Katherine Regional Outlook conference, on Wednesday 13th October, has speakers from ABARE–BRS, the Bureau of Meteorology, local producers and Nitmiluk Tours, among others.

There are 12 speakers across four sessions on the conference program, which will explore issues crucial to the region, as well as commodity forecasts and industry trends. Delegates can access information, make new contacts in their community, gain an understanding of global issues and discuss the impact of those issues likely to affect their region.

Program coordinator Vince O'Donnell explains the choice of Katherine for this year’s conference.

“We’ve held our previous conferences for the Northern Territory in either Darwin or Alice Springs but this year identified Katherine as an ideal location because of its mix of industries, the strength of the local economy and its contribution to the overall economic activity of northern Australia. We’ve also identified some really interesting regional businesses that are leading their field and representatives of these businesses have agreed to speak at the conference.”

Vince explains that the structure of the conference — with four themed sessions over the day — allows for an interesting array of speakers and topics.

“By opening with The big picture: an economic overview session we set the scene for delegates, explaining how their region is affected by international economic trends and how it plays a part in domestic economic activity.”

The second session Opportunities for industries in the region examines the outlook and opportunities for the region’s agricultural and resources industries, complemented by case studies from producers and businesses.

The Working with the environment session explores climate trends with speakers from the Bureau of Meteorology, and others, who discuss the challenges and opportunities for their business from a changing environment.

The final session Emerging issues in the region looks at key regional issues such as employment and labour, business case studies and local challenges and how these are managed successfully.

The Katherine Regional Outlook conference is being held at the Knotts Crossing Resort, corner of Giles and Cameron Streets, Katherine, on Wednesday 13th October.

Visit www.abare-brs.gov.au/regional for more information and the conference program. Registration is $88 per person (inc. GST) and includes morning and afternoon tea and lunch. For registration enquiries phone Angela Ellerman on 02 6272 2303 or email conferences@abare-brs.gov.au.

DoR – Recent publications

<table>
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<tr>
<th>Title</th>
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<tr>
<td>Agnote E3 – Caribbean Stylo</td>
<td>A. Cameron</td>
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<tr>
<td>Agnote E21 – Wynn Roundleaf Cassia</td>
<td>A. Cameron</td>
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<td>Agnote E27 – Sabi Grass</td>
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<td>Agnote E28 – Buffel Grass</td>
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<td>Agnote E55 – Jarra Finger Grass</td>
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<td>Agnote E65 – Strickland Finger Grass</td>
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All these publications are available from the Department website www.nt.gov.au/d/publications/ or by contacting Jason on 08 8999 2313 or email technical.publications@nt.gov.au.
Katherine fruit fly project set to help maintain interstate markets

_**Austin McLennan, Senior Entomologist, Dor Katherine**_

A new fruit fly research project for the Department’s Plant Industries division was launched at a mango industry meeting at the Katherine Research Station on July 28th.

The project will be focussing on market access issues related to two species of pest fruit flies that occur in the Katherine region: Queensland Fruit Fly (Bactrocera tryoni) and the less commonly-known Jarvis’ Fruit Fly (B. jarvisi).

Both attack a range of native and commercially grown fruits, and while they tend to cause very little damage in commercial mango orchards around Katherine, the fact that we have these two species impacts on how we have to treat fruit before it can be sent to various interstate markets.

**Market access concerns**

Most issues with fruit flies and market access arise when you want to export fruit from a production area known to have pest fruit flies to markets where those same pest species are absent.

For that reason there are no special requirements when exporting mangoes from the Northern Territory into Queensland or most of New South Wales, as both these states already have endemic populations of Queensland and Jarvis’ fruit flies.

However, Victoria, South Australia and the fruit fly free zones of New South Wales are major markets for Northern Territory mangoes where fruit cannot be sent without post-harvest treatments. The main post-harvest treatments currently used throughout the industry are dips or sprays in the packing shed with the insecticides dimethoate or fenthion.

A concern looms because both these insecticides are under review by Australia’s agricultural chemical regulators, the Australian Pesticides and Veterinary Medicines Authority (APVMA), meaning there may soon be additional restrictions on their use for fruit fly disinfestation, at least in certain classes of fruit and vegetables.

Because of these concerns, researchers around Australia and the world are looking for alternative approaches to deliver fruit to market that are free of fruit flies without the need for post-harvest insecticides.

**Capitalising on a natural advantage**

To date, chemical dipping or spraying of fruit from fruit fly areas has been accepted as the standard method for disinfesting fruit.

While some alternative treatments like Vapour Heat and on-farm Hot Water Treatment are practiced they can be expensive and may affect fruit quality.

But what if the fruit didn’t need to be disinfested in the first place?

Female fruit flies generally prefer to lay their eggs into ripening or even overripe fruit. So, in the case of mangoes which are commercially harvested at a hard-green stage, there is already a low chance of them harbouring fruit fly eggs or larvae when they arrive at the packing shed.

Added to this, it is likely that populations of pest fruit flies in the Katherine region are low during the mango harvest window, even further reducing the risk of fruit being infested.

This means that mangoes in general, and Katherine mangoes in particular, should have a natural advantage when it comes to being free of fruit flies when harvested.
Can we prove it?

Suspecting that Katherine mangoes at harvest are free of fruit flies is one thing. Proving this concept is another, and that is exactly what this new project being run out of the Katherine Research Station is trying to do.

This mango season we are focussed on two main activities.

First, we are running an extensive series of fruit fly traps, mostly focussed around four production areas from Katherine to Mataranka, but also including some sites around urban areas and non-commercial orchards.

An exciting part of this project is that a lure has recently been developed for Jarvis’ fruit fly, and for the first time we can get some idea of the natural cycle of this species in the areas where the traps are set.

The trapping program will hopefully confirm that numbers of both species are relatively low during the main harvest window for mangoes.

However, the most important data will come from our second main activity, where we will be collecting, holding and inspecting thousands of untreated mango fruit to see if they really are free of fruit fly eggs and larvae, as we expect they could be.

Provided all fruit for interstate markets are picked at the correct maturity stage when the mangoes are still hard-green and unattractive to our local female fruit flies, there is a good chance that we can show Katherine mangoes do not need a insecticide treatment in the packing shed to be exported free of fruit flies to interstate markets.

Up and running

Trapping of both species has already commenced and preparations are now being made for the mango harvest period. After the 2010 season is over, we will be reviewing both the trap and the mango infestation data with industry to see if the research should be extended.

We look forward to keeping KRR readers updated on future developments.

For more information, please contact Austin McLennan;
phone: 08 8973 9762
mobile: 0488 764 592
email: austin.mclennan@nt.gov.au

Getting around the traps (L-R) are project team members Austin McLennan, Mike Kahl (KRS) and Deanna Chin (Darwin) Photo: M. Neale.

While most traps are located in commercial orchard areas, some are also placed in the surrounding bushland. All trap locations are recorded using a GPS unit. Photo: M Neale.
On the 28th and 29th of July, the department opened the gates of Victoria River Research Station (Kidman Springs) for the public to come along and learn from guest speakers and staff alike, about cattle and pasture management in northern Australia.

The theme of the day was ‘Setting our sights higher’, which was chosen in recognition of the need for pastoral business’s to continually improve productivity to stay ahead of the cost price squeeze. Topics of the day included technologies that can be used to assist in informed bull selection, better management of breeder herds, profitability and nutrition.

**Breeding strategies**

Don Nicol was the first guest speaker of the day, with a presentation entitled ‘Breeding technologies for improving your breeder herd’. One of the main take-home-messages from his presentation was that genetic improvement gains are cumulative, permanent and cheap; encouraging producers to select bulls wisely based on proven breeding merit, rather than a bull’s physical appearance. It is now becoming apparent that the heritability of fertility traits in Brahmans is which is much higher than originally thought. For most heifer traits it is around 40%.

Don was also able to enlighten the audience with his experiences in Venezuela, where the government imposed laws to prevent any animal over 350kg being sold in an attempt to increase the nation’s breeding herd. Producers soon realised that to remain viable, production needed to be increased; therefore, intense selection pressure was applied to fertility. This led to extremely fertile Brahman herds, Don pointed out that similar results that have been achieved in the Selected Brahman Herd at Kidman Springs. In Venezuela, selection pressure for fertility was applied through the use of Estimated Breeding Values (EBVs).

Following this, Don indicated his support of the selection index that is currently being developed by the Department of Resources. This will assist producers in selecting bulls based on a single figure EBV which takes into consideration heritable traits that are important for targeting the live export market.

Other technologies Don discussed included DNA parentage, gene markers and semen sexing, all of which are already currently in use.

**Real production figures from NT herds**

Geoff Niethe, from Meat and Livestock Australia presented information about understanding the components of the breeder herd. He made the point that
as part of a typically managed Territory breeder herd, 50–70% of heifers are kept as replacement females, and with the majority of heifers being mated at two years of age, then approximately 40% of the breeding herd will be less than 4 years old with having only produced one calf in that time. Geoff's presentation drove home the fact that heifer management is crucial to productivity and therefore profitability.

Geoff also presented information on the sale of females. Over a six year period, by studying all NT waybills, he has deduced that females make up only 41.45% of cattle leaving the Territory, when in reality, if all management practices are adequate, this figure should be more like 48%. This indicates that the mortality rate in the NT is more accurately 8–9% rather than the 2.7–3.5% previously thought. He stressed it is important to have a good understanding of mortality rate for your property, which can most accurately be calculated by analysing female sales over a long period.

**Practical breeder management**

Geoffry Fordyce, from Department of Employment, Economic Development and Innovation, Queensland, explained the importance of correctly managing the breeder herd and the effects this can have on profitability in his presentation entitled 'Stepping up management of the breeder herd’. Geoff's presentation touched on bull, heifer and cow management, providing information on tools that can be used for bull selection, the limiting factors of heifer puberty and the importance of body condition of cows to achieve a calf per cow per year in northern Australia.

By including bull breeding soundness evaluation in the process of bull selection, producers will be able to decrease bull percentages in the herd, reducing the bull cost per calf. Geoffry stated that such practices can enable producers to reduce their bull percentages to as little as 1%, stating that rates much greater than this only leads to bulls fighting, causing injuries as well as wasted spending on bulls.

Geoffry discussed how it was previously thought that age determined the onset of puberty in Brahman heifers, but this has been proven not to be the case. Instead weight is the determining factor. *Bos indicus* heifers have to be 68% or more of their mature weight, or approximately 330kg, before they are ready to mate.

This is not the case however in cows re-conceiving after giving birth. The determining factor with cows is body condition. If the cow’s brain tells it that it does not have enough nutrients to support another foetus, the cow will not start cycling until the nutritional pressure of lactation has been removed (i.e. the calf at foot has been weaned) meaning that the chances of that animal producing one calf a year is strongly diminished. This is known as lactation anoestrus, and is particularly prevalent in Brahmans. Geoff discussed solutions to this problem which included stocking paddocks according to long term carrying capacities, combining sustainable stocking rates with timely weaner removal and ensuring that calving cows are in a moderate condition at calving to assist in preventing post-partum anoestrus.

On the second day of the field days, Geoffry also provided a practical demonstration on correct dehorning and castrating techniques. One of the points he made was that when surgeons are operating, after opening the skin with a scalpel, the instrument is put down and not picked up again. Geoffry suggests pulling the testes out after opening the site with a scalpel, as tears in tissues clot quicker and heal faster than tissue that has been sliced. This method of castration reduces blood loss from the animal. The demonstration was well received and held a captivated audience.

**NT fertility trials**

From the Department of Resources numerous staff were able to provide updates of current projects. Kieren McCosker provided an update on the Cash Cow project which will enter its final year of data collection next year.

Tim Schatz presented results from Selected Brahman herd that has exceptional fertility rates compared with commercial Brahman herds. This herd is the best performing Brahman herd according to Breed object, with all cows still in the herd having produced a calf every year, many of them since having their first calf at two. A number of discussions centred on this herd as an
example of what can be achieved through combining selection pressure on genetics combined with best practice management.

Andy Bubb and Tim Driver demonstrated how automatic drafters can be utilised in practical situations, and provided a demonstration using it to draft Brahman weaners from Senepol cross weaners using NLIS tags. This created much interest among field day participants as it has possible applications for drafting off sale weight animals without the hassle and stress of mustering.

Trudi Oxley described the process of developing an index for bull selection for live export markets in the Top End. The Northern Live Export $Index has had extensive industry consultation and support, with a draft index being presented for discussion and refinement at an industry workshop on the 21st of October. She outlined the benefits of using the technology to speed up genetic improvement based on economically important traits for the production system in the Katherine region.

Trisha Cowley led a theoretical and practical demonstration on the importance of hygiene when applying hormonal growth promotants in cattle. The reason for this demonstration came about as a surprising find while collecting data for the Liveweight Gain Project, as a relatively large percentage of animals on some stations returned the following season without an implant. Trish found that stations with good hygiene practices had better rates of present HGPs months after initial implantation, than those with low standards of hygiene.

Dionne Walsh had producers reconsidering their greatest station asset in her presentation entitled ‘Best bet options for managing pastures for production and profit in the VRD’ and was rated as one of the favourite and most valuable presentations by participants. Dionne presented solutions to four common problems found on the VRD, including matching animal demand to pasture supply, large areas of poor condition country, underutilised pastures too far from water and woody vegetation thickening.

Producer interaction was high, as staff and guest speakers were available to answer questions during the presentations and afterward while enjoying a cold beer, overlooking the picturesque Victoria River District at sunset.

Overall, it was a very beneficial day for all who attended, with a few main messages that were reiterated coincidentally by different speakers:

1. Benchmarking is important – it is essential to know current production levels to find out where inefficiencies lie, and therefore better production and profitability
2. Do not keep unproductive females
3. Genetic gains are permanent, cumulative and cheap
4. Stock paddocks to long term carrying capacities, with adjustments in numbers made seasonally in response to feed conditions.
The event was also videoed, and will be released for public viewing at a later date for those who were unable to attend or those who want a permanent record of what was discussed over the two days. Please contact Katherine Research Station on (08) 8973 9739 to place your order.

More photos of the Field Day can be seen on the Round the Region spread on page 10.

Industry notices

Horse Levy and any future Exotic Horse Disease Response

Australia has a government and industry response agreement including cost sharing for 64 specified emergency diseases. There are 12 diseases where horses are the primary host and another 3 diseases where horses may be affected.

The horse owner organisations are not a signatory to the exotic disease response agreement due to the lack of a levy mechanism to provide horse industry funding despite a willingness to be a party to the response agreement.

The Commonwealth Government will not again underwrite the horse sector funding for any future disease responses and agreed to a 6 month delay until 1 December 2010 to enable the horse sectors to agree to a horse levy mechanism. **If there is no agreement, there will be no national response to any exotic horse disease.**

The current favoured approach is a levy on worming treatments and manufactured horse feed. A levy would be initiated for up to 10 years and only following an emergency horse disease response.

For more information visit the following links on the Internet:


I suggest that horse owners consider the issue and provide feedback to your relevant horse organisation.

BRIAN RADUNZ
Chief Veterinary Officer

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Senior Beef Cattle Researcher Recognised

Katherine based Beef Cattle Research officer Kieren McCosker has recently been awarded the North Australian Beef Research Council (NABRC) Young Achiever Medal. In a ceremony at the MEATing Centre at the Royal Queensland Show (EKKA), Kieren was recognised for his long-term commitment to the Northern Territory beef industry through his scientific ability, practical skills and keenness to communicate with producers.

Kieren has been working for the DoR since 2002 and has been involved in a number of cattle projects conducted by the Department. He is currently working on the CashCow project which runs throughout Queensland, the Northern Territory and Western Australia on commercial cattle properties and is looking at the factors contributing to reproductive wastage in northern breeder herds.

Kieren was one of four beef industry representatives awarded. Other recipients included Queensland Research Scientist Dr Richard Holroyd and Extension Officer Robert Shepherd and Western Australian Producer Keith Anderson of Jubilee and Quanbun Downs.
Round the region

Alison Haines (Assistant Manager Kidman Springs) & Tony Moran (Manager Kidman Springs).

Charles Darwin University students.

Daryl Hill of Soil Save.

Ewan (Pzifer), Mark (Rumivite) talk with Trumby (Montjinni) and Mark (Delemere).

Henry Anderson (Humbert River).

Andy Bubb (DoR).

Kieren McCosker (DoR) discusses the day with Rob Venturin (West Elsey) and Mike Earley.

Trumby (Montjinni) and Mark (Delemere).

Sarah Streeter (DoR), Stephen Lavers, Andy Bubb (DoR), Neil MacDonald (DoR) & Anne Marie Huey (WA Dept Ag).
Bookworm’s review

Jodie Ward, Pastoral Production

Title: Slower than the eye can see
Author: Darrell Lewis

Published in 2002, “Slower Than The Eye Can See” is a historical case study of the Victoria River District since European settlement late in the 19th century. Through the use of repeat photography, published journal articles written by early explorers and station diary entries, the author, Darrell Lewis, has been able to capture the dramatic changes in the VRD landscape.

Using repeat photography, a technique where the photographer aims to take another photo in the exact location of one taken many years prior, it is easy for the reader to visually assess the impacts of domestic stock and changed fire regimes on the area. Topics covered include soil erosion, vegetation thickening, the impact of feral animals, stocking rates and plant and animal species now extinct in the local area.

Interesting historical reflections are made throughout the book, such as the Victoria River Downs station manager recognising that the landscape was changing within six years of being stocked at only 15,000 head, and that by 1896, the Victoria River Downs herd of 30,000 head was “out of control”.

Although I personally, have not had a great deal to do with the VRD, I found this unique book to be enthralling and strangely captivating, so much so, that I found myself making notes on post-its so I could come back and examine certain points once I had finished reading. The excerpts from station diaries, letters written by managers back to head office and first hand early explorer accounts has enabled the author to capture the feel of the landscape and environmental conditions the early settlers must have faced and how management techniques have changed it.

I would certainly recommend this book to any person who has an interest in the VRD, or even the Australian pastoral industry, as I feel it is important to know where we, as an industry, have come from, to accurately manage our future and the environment that supports it.

This book is available through the Tropical Savannas CRC for a cost of $15, visit http://savanna.cdu.edu.au/publications/landscape_change.html

The book is also available from many libraries throughout the NT, visit www.libraries.nt.gov.au

Tips and Tricks for Using RFID Panel Readers

Don Menzies, Outcross – Precision Livestock Management

Listed below are some tips and tricks for using RFID Panel Readers. Please note my experience mostly relates to Allflex readers but generally all readers operate the same in terms of the issues discussed. The reasons for using a Panel Reader are obvious in terms of the increased speed but consideration needs to be given to interference from metal and electrical equipment when installing and using.

1. Metal installations

RFID readers emit an electromagnetic field, which is radiated from the reader in a sphere. Metal will either absorb the electromagnetic field or it can also channel the electromagnetic energy away from the usual read zone.

Readers will not read through sheet steel but will read through / around metal pipes (as typically found in a crush) and achieve a decent read range. Our experience is that the read range
achieved when mounting a reader on a crush is fine for scanning cattle when they are being stopped, weighed etc.

The other consideration is that the more metal, the more the reader’s electromagnetic field is absorbed and therefore read ranges can be inadequate when used in very heavy duty crushes and the reader may require tuning or some steel removed from the crush.

A trick to allow the reader to be used in a range of conditions from site to site without tuning is to simply lift the reader off the metal on one side. That is, instead of mounting the antenna flat against the pipes, leave one edge flat and swing the other edge away (about 50mm–75mm). Pack the gap with something non conductive, like a wooden block and you will be ready to read.

In some situations you might find what you think is the perfect spot to mount the antenna within a “window” of metal pipes. However this can form a closed metal frame around the Panel Reader, which will reduce the electromagnetic field emitted from the reader. To prevent this, simply mount the antenna so it straddles one of the metal sides and you achieve a reasonable result.

2. Parasitic Effect

As mentioned earlier, metal can absorb the electromagnetic field but can also channel the electromagnetic energy away from the usual read zone. What often happens is that the metal actually acts like an extension to the antenna. This is called the Parasitic Effect. In most instances this can be extremely beneficial as it means that the RFID tags begin being read well before the animals head is in front of the panel reader.

The Parasitic Effect can be a disadvantage when a panel reader is mounted in a metal raceway. In a crush the “enhanced” read zone is restricted. A typical metal race has vertical posts about 2700mm apart and horizontal rails in between the vertical posts. If you mount a panel reader close to one of the vertical post the read area can extend the full distance between the vertical posts. This looks impressive when you are testing but when you try to read cattle in single file you end up with multiple tags being read simultaneously. This can result in missing some tags especially if you are processing weaners that can be two abreast.

The simplest solution to this is to position the antenna about 300mm from one vertical post and then weld a new vertical bar about 1200mm from the other post. You need to weld the new bar to each horizontal bar. This stops the electromagnetic field from travelling outside the read zone “window” you have now created.

3. Electrical Interference with RFID Readers

Interference can be broken into radiated or conducted.

3.1 Radiated Interference

Other Readers

When you have any two readers operating (either Panel Readers or Wands) the effect is to reduce the read range of each one. For instance, Outcross data collectors will often have to touch the handheld reader against the ear tag to get it to read when a panel reader is operational as its read range is drastically reduced. Likewise the effect is particular apparent when two panel readers are operating at the same time. There are a few collaborators within the Cash Cow project who would like to collect data and use a panel reader at the same time as Outcross is working. The best solution we have found is to use the Allflex Panel Reader with a split cable that goes to both the Outcross data collector’s computer and the collaborators data collection unit.

3.2 Conducted Interference

Conducted interference relates to a current conducted into the panel reader different from the power being sent to charge the panel reader. Possible sources of interference include generators, light dimmers and solid state relays.

I recently had an instance when demonstrating NLIS equipment where current unintentionally travelled from a generator to a panel reader while the reader was being powered from a 12volt battery. The read range was drastically reduced, which meant a wand had to be used. If I had of isolated the generator power from the panel readers the problem should have been eliminated.
Another issue to be aware of is electrical noise conducted into the power system of the reader. An example of this occurring is if a scale indicator is being charged from a battery which is also being used to operate a panel reader. The regulating of the scale charger will interfere with the power into the reader.

**Conclusion**

Irrespective of what brand of reader you have, all of the suppliers have support staff you can turn to for assistance either through sales representatives or via help desks. If you consider the points above when installing and using Panel Readers their use will be optimised and your cattle flow will be increased. If you would like further information on RFID readers please feel free to contact Outcross on 07 49274160 or don@outcross.com.au.

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**Rural Women’s Award 2011**

**What is the RIRDC Rural Women’s Award?**

The RIRDC Rural Women’s Award is Australia’s pre-eminent Award that recognises and encourages rural women’s contribution to primary industries, resource development and rural Australia.

While the Award acknowledges past achievements, it is focused on the future and provides rural women with financial and practical support to implement their visions for primary industries and rural Australia, and to enhance their leadership and representative capacities.

The Award provides an amazing opportunity to further your own professional development, to make a tangible difference and to inspire others. You could become one of the seven state and territory winners and go on to become the Australian winner. But the Award is much more than just winning a title. It is a life changing experience that will open up a positive and powerful network of like-minded women across the country who are passionate about primary industries and rural Australia.

**Who can enter?**

The Award is open to all women involved in primary industries and resource development. Don’t be shy about entering yourself, many people do and we encourage you to. You can also nominate someone provided you have their written consent. You don’t need formal qualifications to enter.

**What is the bursary?**

The Award is very clearly a leadership and capacity building initiative that is designed to help build your skills and assist you to contribute more effectively to leadership and decision making in primary industries.

The $10,000 bursary is the major prize for each state and territory winner to support your professional development, by providing you with the resources to develop your vision into a new project or initiative that will benefit primary industries and rural Australia.

Examples of some of the initiatives the bursary CAN be used for include:

- Formal training in leadership and business management
- Overseas study tours
- Networking at forums and conferences to grow your knowledge of industries, innovations and markets
- Developing educational and promotional campaigns
- Developing training programs and information technology initiatives
- Publishing books
Examples of what you CANNOT use the bursary for are:

- Buying capital equipment (without explicit approval from RIRDC)
- Further education such as a Masters or Doctorate degree.

**How do I enter or nominate someone?**

**To enter:** Complete the [entry form](http://www.ruralwomensaward.gov.au) which can be found on the website and attach your answers addressing each of the selection criteria.

**To nominate someone:** Please contact your relevant state coordinator for directions.

**Remember** to include the names and details of **TWO REFEREES**. We will only contact your referees if your application makes it to the final round. Mark your entry ‘PRIVATE & CONFIDENTIAL’ and send it to your state or territory contact.

**What is the process from here?**

- Nominations open on 1st August 2010 and close on World Rural Women’s Day — 15th October 2010
- Applicants will be short-listed and interviewed in each state and territory.
- Successful applicants will be announced at formal state presentation events
- Award winners AND runners-up will be invited to attend the Australian Institute of Company Directors Course in Canberra.
- State and territory winners will be interviewed by a national selection panel for the title of the Australian RIRDC Rural Women’s Award 2011 winner and runner-up who will be announced at the Award’s national celebratory dinner in May 2011 in Canberra during the week of the Company Directors Course.

**What is RIRDC?**

The Rural Industries Research and Development Corporation is an Australian Government Statutory Authority. Our mission is to maximise knowledge outcomes for industry and government from our R&D investments.

The Rural Women’s Award is a RIRDC initiative in partnership with relevant state and territory agencies who manage the Award at a state and territory level. National partners are the Australian Government Department of Agriculture, Fisheries and Forestry and the Department of Infrastructure, Transport, Regional Development and Local Government. National sponsors are ABC Radio, Rural Press Ltd and Westpac Banking Corporation.

**Your responsibilities to RIRDC**

State and territory Award winners will need to sign a contract with RIRDC and will also need to submit a formal report at the end of their tenure on their Award activities and how the bursary was used. RIRDC will seek reimbursement of the bursary if the report is not provided. State and territory RIRDC Rural Women’s Award 2011 winners and runners-up can expect to be interviewed by media and where practical, attend and speak at relevant public functions.

Additional financial support will be given to the Australian RIRDC Rural Women’s Award 2011 winner and runner-up to assist with speaking engagements. RIRDC and relevant state/territory agencies reserve ‘non exclusive’ rights to publish material generated from successful applicants’ involvement in the Award and from the bursary outcomes.
WEED ALERT
Parthenium weed

Parthenium weed (Parthenium hysterophorus) has recently been found at the Tennant Creek stockyards. This area is now under containment.

Parthenium weed is declared a Class A (to be eradicated) and Class C (not to be introduced to the Northern Territory) weed under the NT Weeds Management Act and is a Weed of National Significance.

Parthenium weed:
- spreads rapidly and can quickly colonise large areas
- is capable of invading grazing land, roadsides and other disturbed areas
- produces large quantities of seeds
- is spread by vehicles, machinery and livestock
- degrades pastures, increasing production costs and decreasing productivity
- adversely affects human and animal health. All parts of the plant are toxic.

There are currently no other known parthenium weed infestations in the Northern Territory.

Landholders are urged not to attempt to control or dispose of parthenium weed themselves.

Have you seen this weed?
Contact the Weed Management Branch immediately on 8999 4567.
For further information go to www.nt.gov.au/weeds

<table>
<thead>
<tr>
<th>HABIT</th>
<th>STEMS AND ROOTS</th>
<th>LEAVES</th>
<th>FLOWERS</th>
<th>FRUIT AND SEED</th>
</tr>
</thead>
<tbody>
<tr>
<td>A fast-maturing branching annual herb. Able to germinate, grow, mature and set seed in 24 days. Toxic to stock and can cause allergic reactions in people.</td>
<td>An erect stem up to 2 m high becoming woody with age, and a deep tap root.</td>
<td>Pale green, lobed leaves, covered with soft fine hairs.</td>
<td>Flowers grow on the stem tips, and are small, white and 4 mm across with five distinct corners. Each flower produces four or five seeds.</td>
<td>Seeds are black and wedge-shaped, 2 mm long, with thin white scales. Up to 100,000 seeds produced per plant. Seeds spread easily by vehicles, machinery, stock, grain and fodder.</td>
</tr>
</tbody>
</table>
Forecasting the Wet season onset –
when will the season break?

Whitney Dollemore, Pastoral Production, Dor Katherine

Being able to predict in advance when a wet season will start and the variability of rainfall within a wet season would be a great tool to help land managers better plan their operations. For example if you knew before the second round muster whether you were likely to have an early, usual or late start to the wet season, this could assist decision making about whether to keep or offload cattle. During the wet season, knowing when the rainy periods and breaks will occur could assist with planning station activities such as wet season musters, when to go on holidays and when to get supplies in and out while roads are accessible. In addition, predicting when the wet season will start is also useful if you plan to plant a summer broadacre crop, such as maize or hay, as the time of planting is crucial to crop establishment, or if you need to harvest a crop, such as melons, before the wet sets in.

Climate researchers have developed a method to predict the onset of the North Australian wet season using the preceding July–August Southern Oscillation Index (SOI) (Lo et al 2007). The SOI is a measure of the difference in atmospheric pressure between Tahiti and Darwin. A positive SOI value indicates Australia is experiencing La Niña: for northern Australia this usually means an early onset of the wet season, increased cyclonic activity and higher than average rainfall. A negative SOI (El-Niño conditions) typically means a later onset of the wet season and lower than average rainfall for the season.

The average SOI value from July–August is a predictor of El-Niño or La Niña episodes and can be used to forecast the onset of the wet season (the date at which 50mm of rainfall is received after the 1st September). This amount of rainfall is used as an indication of the break of season because it considered to be the amount of rainfall required to initiate plant growth.

What is going to happen this year then?

The July–August SOI has been high and positive at +19, which is indicative of a La Niña event and an early break to the wet season in the Northern Territory, as shown in Figure 1a.

The last time the SOI was this positive was 1974. In a high SOI year (like 1950 when the average was +16.7), the model predicted a 90% probability that the wet season would start before the 25th September and only a 10% probability that it would occur later than the 25th October in Darwin. In contrast, in a low SOI year (eg 1997 when the average was -14.6) the model predicted that there was only a 50% chance of the wet season starting by mid November.

The onset of the wet season occurs later as you move south from Darwin. With the present SOI sitting at +19, the model predicts that the wet season will begin in Darwin approximately two weeks in advance of the 1950 wet season. This means there is a high probability that the onset of the wet in Darwin will occur prior to the 11th September this season. By following the gradient shown in Figure 1b, the wet season break (defined as 50mm of rain post 1st September) is expected to occur by early October for areas around Adelaide River, Pine Creek, Katherine, Mataranka and Daly Waters.

References:

Figure 1 (opposite page).

Mean onset dates for low and high SOI years.
(a) Low SOI (< -10) years
(b) High SOI (> +10) years
Onset date: date at which 15% of mean wet season rainfall is reached.
It’s Happening Again…

Pastoral Industry Survey 2010

If you could ask the NT pastoral industry one question, what would it be?

Email your question to: Trudi.Oxley@nt.gov.au

The best question will be included in the NT Pastoral Industry Survey for 2010 and will win a mystery prize.
Live Cattle Exports via Darwin Port – JULY 2010

Katherine Rural Review, Issue 301

### TOTAL CATTLE (including interstate) vs. NT CATTLE

<table>
<thead>
<tr>
<th>Destination</th>
<th>2008</th>
<th>2009</th>
<th>Last year</th>
<th>YTD</th>
<th>1-31 JULY</th>
<th>Previous Month</th>
<th>2008</th>
<th>2009</th>
<th>Last year</th>
<th>YTD</th>
<th>1-31 JULY</th>
<th>Previous Month</th>
</tr>
</thead>
<tbody>
<tr>
<td>BRUNEI</td>
<td>4,289</td>
<td>3,131</td>
<td>591</td>
<td>948</td>
<td>0</td>
<td>232</td>
<td>3,238</td>
<td>2,661</td>
<td>991</td>
<td>948</td>
<td>0</td>
<td>232</td>
</tr>
<tr>
<td>INDONESIA</td>
<td>341,768</td>
<td>330,433</td>
<td>154,201</td>
<td>158,509</td>
<td>27,997</td>
<td>13,814</td>
<td>+14,183</td>
<td>276,259</td>
<td>288,847</td>
<td>147,924</td>
<td>158,117</td>
<td>27,997</td>
</tr>
<tr>
<td>PHILIPPINES</td>
<td>12,247</td>
<td>10,422</td>
<td>8,535</td>
<td>4,677</td>
<td>0</td>
<td>1,913</td>
<td>-1,913</td>
<td>11,945</td>
<td>10,422</td>
<td>8,635</td>
<td>4,877</td>
<td>0</td>
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<tr>
<td>SABAH</td>
<td>2,985</td>
<td>1,410</td>
<td>910</td>
<td>692</td>
<td>0</td>
<td>692</td>
<td>-692</td>
<td>2,055</td>
<td>910</td>
<td>692</td>
<td>692</td>
<td>0</td>
</tr>
<tr>
<td>SARAWAK</td>
<td>2,540</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1,550</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<tr>
<td>W-MALAYSIA</td>
<td>1,250</td>
<td>1,513</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>418</td>
<td>1,513</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>EAST TIMOR</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>TOTAL</td>
<td>304,944</td>
<td>247,314</td>
<td>104,737</td>
<td>165,626</td>
<td>27,997</td>
<td>16,651</td>
<td>+11,346</td>
<td>295,529</td>
<td>304,918</td>
<td>155,460</td>
<td>144,526</td>
<td>27,997</td>
</tr>
</tbody>
</table>

### July at a glance

- 27,997 head of cattle through the Port of Darwin during July, 11,346 more than June and 56 less than July last year.
- 2010 total cattle figures indicate 689 head more than last year. NT cattle 13,826 less than last year.

### TOTAL Live Cattle Exports thru Port of Darwin

2009 v 2010

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

[Graph showing live cattle exports over the last 10 years]

### NT Live Cattle Exports thru Port of Darwin

2009 v 2010

[Graph showing NT cattle exports over the last 10 years]
OTHER LIVESTOCK EXPORTS VIA DARWIN PORT (includes NT and Interstate Stock)

<table>
<thead>
<tr>
<th>Destination</th>
<th>Buffalo</th>
<th>Camels</th>
<th>Goats</th>
<th>Horses</th>
<th>Sheep</th>
<th>Pigs</th>
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</thead>
<tbody>
<tr>
<td>BRUNEI</td>
<td>327</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<tr>
<td>INDONESIA</td>
<td>3,274</td>
<td>1452</td>
<td>177</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>PHILIPPINES</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>W-MALAYSIA</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>SABAH</td>
<td>176</td>
<td>76</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>SARAWAK</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>TOTAL</td>
<td>3,777</td>
<td>1,828</td>
<td>177</td>
<td>0</td>
<td>0</td>
<td>0</td>
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</tbody>
</table>

NATIONAL CATTLE PRICES - W/E 30/7/2010

<table>
<thead>
<tr>
<th>JAPAN QX</th>
<th>MEDIUM STEER</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Estimated dressed weight price (cents/kg)</td>
</tr>
<tr>
<td></td>
<td>SALEYARDS</td>
</tr>
<tr>
<td>This week</td>
<td></td>
</tr>
<tr>
<td>NSW QLD</td>
<td>324</td>
</tr>
<tr>
<td>SA</td>
<td>320</td>
</tr>
<tr>
<td>Year ago</td>
<td>323</td>
</tr>
<tr>
<td>Last week</td>
<td>327</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>US COW</th>
<th>TRADE STEER</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Estimated dressed weight price (cents/kg)</td>
</tr>
<tr>
<td></td>
<td>SALEYARDS</td>
</tr>
<tr>
<td>This week</td>
<td></td>
</tr>
<tr>
<td>NSW QLD</td>
<td>267</td>
</tr>
<tr>
<td>SA</td>
<td>267</td>
</tr>
<tr>
<td>Year ago</td>
<td>274</td>
</tr>
<tr>
<td>Last week</td>
<td>274</td>
</tr>
</tbody>
</table>

LIVE EXPORT QUOTES

<table>
<thead>
<tr>
<th></th>
<th>Estimated live weight price (cents/kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>LIGHT STEERS (280-400 kg)</td>
</tr>
<tr>
<td>Darwin</td>
<td>200</td>
</tr>
<tr>
<td>Fremantle</td>
<td>170</td>
</tr>
</tbody>
</table>

CURRENCY EXCHANGE RATES

<table>
<thead>
<tr>
<th>Key Currencies</th>
<th>1AUD =</th>
<th>Current 4.8.2010</th>
<th>Previous month 1.7.2010</th>
<th>3 months ago 1.3.2010</th>
<th>1 Year ago 1.8.2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brunei Dollar</td>
<td>1.24683</td>
<td>1.14913</td>
<td>1.24251</td>
<td>1.22205</td>
<td>1.076</td>
</tr>
<tr>
<td>Indonesian Rupiah</td>
<td>8,004.74</td>
<td>7,614.85</td>
<td>8,323.79</td>
<td>8,179.61</td>
<td>1830</td>
</tr>
<tr>
<td>Philippine Peso</td>
<td>41.26999</td>
<td>39.0042</td>
<td>41.7793</td>
<td>40.41892</td>
<td>19.94</td>
</tr>
<tr>
<td>Malaysian Ringgit</td>
<td>2.8542</td>
<td>2.64312</td>
<td>3.03421</td>
<td>2.94756</td>
<td>1.8</td>
</tr>
<tr>
<td>Euro</td>
<td>0.60919</td>
<td>0.60934</td>
<td>0.60905</td>
<td>0.58504</td>
<td>N/A</td>
</tr>
<tr>
<td>US Dollar</td>
<td>0.91190</td>
<td>0.90003</td>
<td>0.90003</td>
<td>0.84250</td>
<td>0.752</td>
</tr>
</tbody>
</table>

Prices courtesy of Meat & Livestock Australia

www.mla.com.au
# Katherine Region Events Calendar

<table>
<thead>
<tr>
<th>Event</th>
<th>Location</th>
<th>Date</th>
<th>Contact</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>September</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rain on the Rangelands Conference</td>
<td>Bourke, NSW</td>
<td>26th–30th Sep</td>
<td>Russell Grant: 02 6836 1575</td>
</tr>
<tr>
<td><strong>October</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NTCA Workshops</td>
<td>Douglas Daly</td>
<td>11th Oct</td>
<td>NTCA office 08 89815976</td>
</tr>
<tr>
<td>'A woman’s capacity: Building Strength'</td>
<td>Katherine</td>
<td>12th Oct</td>
<td><a href="http://www.ntca.org.au">www.ntca.org.au</a></td>
</tr>
<tr>
<td></td>
<td>Top Springs</td>
<td>13th Oct</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Daly Waters</td>
<td>14th Oct</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cape Crawford</td>
<td>15th Oct</td>
<td></td>
</tr>
<tr>
<td>World Rural Women’s Day</td>
<td></td>
<td>15th</td>
<td><a href="http://www.ruralwomensaward.gov.au">www.ruralwomensaward.gov.au</a></td>
</tr>
<tr>
<td><strong>Later on…</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sturt Plateau and Beyond Ladies Day</td>
<td>Hi-Way Inn Daly Waters</td>
<td>Nov 13th</td>
<td>Amanda Murphy: 08 8975 9941</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><a href="mailto:tossamanda@bigpond.com">tossamanda@bigpond.com</a></td>
</tr>
</tbody>
</table>

Please email with updates of events happening in your area.

If you know someone who would like to receive this newsletter or if you no longer wish to receive this newsletter, have a change of address or would prefer to receive this newsletter electronically please forward your request to Krs.Dor@nt.gov.au.

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