A successful “mini-field day” was recently held at Old Man Plains Research Station, Alice Springs. The day focused on the Quality Graze: Producer Steer Challenge (known as the ‘Challenge’) which is a Producer Demonstration Site funded by Meat and Livestock Australia. Producers from seven properties were present, five of which are participating in the ‘Challenge’. Representatives from local company Precision Pastoral, along with Allflex were in attendance. A total of 23 participants enjoyed the day.

Staff from the Department of Primary Industry and Fisheries presented an update of the activities and results from the ‘Challenge’ to date. These presentations helped set the scene for a general discussion on issues affecting the grazing outcomes of a property. Topics in the general discussion included animal health, grazing land management, factors affecting MSA grading and wild dog control.

Along with the lively discussions, attendees were given a demonstration of how the static data is collected for the ‘Challenge’ steers. Static data is measured every three months and includes body weight, hip height, body condition and fat depth.

Attendees were pleased with the opportunity to learn new things and view the ‘Challenge’ steers. All stated that they appreciated the opportunity to better understand the issues other producers are facing and to track the results of those involved in the ‘Challenge’. The next mini field day will be in March 2015.
Editorial

Message from the Team Leader

This edition of the Rural Review brings us to the end of another eventful year in central Australia. A highlight of this year for the Alice Springs office has certainly been the wonderful response from pastoralists to participate in the steer challenge. The performance of these steers, originating from seven stations, has been followed with interest by industry and researchers alike and even our colleagues in the north are astounded by the consistent growth rates of more than 0.5 kilogram per day achieved during the dry winter months.

One of the greatest strengths of the pastoral industry in central Australia will always be the ability to produce quality beef, and with this trial we aim to develop a better understanding of how to access premium markets such as MSA, Grassfed, EU and Organics on a consistent basis. Challenges such as distance from markets, meat quality and wild dog management, without losing accreditation for those that are aiming for the organic market, will be investigated along the way.

At the recent Alice Springs Industry Advisory Committee meeting, research and extension needs were identified for discussion at the North Australian Beef Research Committee meeting that was held on 2 December. The research needs identified by participants during the industry survey, together with additions from the mini field day held at Old Man Plains Research Station on 22 October, were given consideration when the future research agenda was determined.

One of the issues identified by the advisory committee for further investigation is supplementation. Timely and effective supplementation can have a significant effect on livestock performance, but can also be very costly if not applied appropriately. In this edition, information is provided on the properties of a number of commercial products currently being used for supplementation.

An uncertain start to the rainy season reminded us once more of the extremely variable climate in which the pastoral industry in this arid region has to function. Dry to neutral conditions are predicted by AussieGRASS for the period December to February with average temperatures being higher than the norm during the past two months. One approach to deal with the variable climate is to adjust long term carrying capacity appropriately. Five different grazing strategies are currently being tested at Old Man Plains Research Station with the challenge steers in a two paddock rotation system with a variable stocking rate that is capped at realistic upper and lower limits. The performance of these steers will be closely watched during the next 15 months to determine how successful this grazing strategy is.

The Pastoral Industry Survey for the Alice Springs region is now ready for distribution, so please let this office know if you have not received a copy in the mail by the end January.

I wish you all a very Merry Christmas and a prosperous 2015.

Pieter Conradie

From left to right: Tim Driver (Precision Pastoral), Bryan Gill (DPI&F), Duncan Pixley (Allflex), Neil MacDonald (DPI&F) and Dick Cadzow (Mt Riddock) viewing data from the Remote Livestock Management System via Tim’s smart phone as cattle leave the yard at the mini field day at OMP
Department of Primary Industry and Fisheries join forces with Centralian Senior College VET Rural Operations students.

Old Man Plains Research Station (OMP) has been a hive of activity over the past few weeks with Department of Primary Industry and Fisheries (DPIF), Acting Farm Manager, Darren White showing a group of students undertaking the VET in Schools Rural Operations program the ropes on fencing techniques.

Over the past few weeks the students have been busy working on the repair and maintenance of existing fence lines. After mastering all the tools and techniques, the students were able to take on the construction of a new fence line and to securely fence in a new tank.

The partnership between DPIF and the VET Rural Operations program has been a win-win situation for all. The students are gaining experience working in Industry and learning valuable skills in a real work environment, while also achieving tasks which support the running of OMP. VET Rural Operations Trainer, Bec Freshwater, said the essence of the program is to engage with Industry and get hands dirty working on real projects. Darren has been a real asset in engaging with the students and giving a feel for the real world.

Students and Staff from the Centralian Senior College are looking forward to an ongoing partnership with DPIF. This partnership will allow students to work on a range of projects. In the coming weeks students will be working also with DPIF’s Technical Officer, Simon Carr, to undertake maintenance of machinery and equipment. The students are showing a real sense of work readiness and an eagerness to learn.

Centralian Senior College, VET Students experiencing a range of activities as a part of Rural Operations from operating equipment to fence construction and observing animal behaviour.
Earlier in the year the annual fire management plan for Old Man Plains Research Station (OMP) was reviewed and updated to reflect conditions this year. Recently roads and fencelines have been graded to improve access and provide containment lines when backburning.

**Figure 1.** Improving access along roads.

Points to consider for fire management include:

**Plan and Prepare**

- Check your fire plan & strategy
- Ensure fuel breaks are cleared
- Apply to Bushfires NT for equipment subsidies

**Your Responsibilities**

- To have fuel breaks in place
- Inform neighbours before burning
- Do you need a permit?

**What are you protecting?**

- Infrastructure (fences, buildings, water points)
- Resources (vehicles, equipment)
- Livestock
- Pastures
- Livelihood

**Record keeping (fire management costs)**

- Staff & equipment hours for fuel breaks, control burns & wildfires
- Equipment repairs & maintenance
- New resources purchased
- Post fire impacts (selling/agisting cattle, fence lines, tanks)

Are you fire ready?
Supporting the Northern Territory Pastoral industry

The Pastoral Business Growth program is a suite of continuous improvement strategies structured to meet the unique needs of Northern Territory pastoral sector.

The innovative assistance packages can provide assistance to the pastoral sector to undertake business overviews, business planning, technology solutions plus many other business assistance options. The program can also support the sector in diversification planning in conjunction with the changes to the Pastoral Land Act.

Pastoral Land Act amendments effective from the 1 January 2014 permit pastoralists to apply to the Pastoral Land Board to develop non-pastoral activities on their lease, provided pastoralism remains the primary use. Activities such as tourism, horticulture, broad scale agriculture and forestry may now be possible.

How does the program work for you?

The Pastoral Business Growth program offers reimbursements to engage professional advisors who will work with you to assess whether diversification will be appropriate for your unique pastoral operations activities based on land and water capability assessments, market and supply chain analysis, business structures, and day-to-day operational requirements.

For more information call 1800 193 111 or visit www.dob.nt.gov.au
Looking like a drier than normal new year for most!

Chris Materne, Pastoral Production, Alice Springs

AussieGRASS – December 2014 update

2014/15 Pasture Growth

Figure 1: Past 6-months pasture growth relative to historical records since 1957 (1st June to 30th November 2014)

Dry to neutral conditions predicted

Figure 2: Chances of exceeding median growth over the next 3-months (December 2014 to February 2015)

What is AussieGRASS?

AussieGRASS is a spatial modelling framework that estimates various pasture characteristics (such as growth and total standing dry matter) over a given time period and compares it with historical records. It does this by using rainfall, climate, soil and pasture type information to estimate average pasture growth (among other parameters) over 5km x 5km square grids across Australia.

For more information on AussieGRASS see http://www.longpaddock.qld.gov.au/about/researchprojects/aussiegrass/index.html
70% chance El Niño to develop in the near future!

(Sourced from the Australian Bureau of Meteorology)


The national outlook for December 2014 to February 2015 indicates that:

- **Drier** than normal across the NT
- **Warmer** than normal nights and days across the NT

Climate influences include El Niño-like conditions in the tropical Pacific Ocean, and average to cooler than average waters surrounding northern Australia.

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**Table: Seasonal Indicators**

<table>
<thead>
<tr>
<th>Seasonal Indicators</th>
<th>Comments</th>
</tr>
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</table>
| **El Niño Southern Oscillation (ENSO)** | El Niño-like impacts emerge in a number of areas

Many climate indicators remain close to El Niño thresholds, with climate model outlooks suggesting further intensification of conditions remains likely. Whether or not an El Niño fully develops, a number of El Niño-like impacts have already emerged.

Indicators close to the El Niño thresholds include tropical Pacific Ocean temperatures, which have now exceeded El Niño levels for a month, and the Southern Oscillation Index, which has remained at or near El Niño levels for three months. Other indicators, such as tropical cloud, trade winds and rainfall patterns, have either remained near average or only temporarily approached thresholds. This indicates a typical El Niño ocean–atmosphere interaction may not be fully locked in.

El Niño is often associated with below-average rainfall over large parts of southern and eastern inland areas of Australia and above-average daytime temperatures over southern Australia. Such impacts can often occur while an event is developing, as experienced in some locations over the past several months. |
| **Indian Ocean Dipole (IOD)** | The IOD index remains neutral.

The latest weekly index value to 30 November is +0.2 °C. Climate models surveyed in the model outlooks favour a continuation of neutral IOD values for the remainder of the year.

The IOD typically has little influence on the Australian climate from December to April. A negative IOD pattern typically brings wetter conditions to inland southern Australia during winter and spring. |
Intestinal worms are an issue for cattle in central Australia

by J. Tincknell and J. Coventry, DPIF – Alice Springs

Myth 1: “Intestinal worms are not widespread in central Australia.”

Animal health testing as a part of quarantine requirements before entering the Quality Graze: Producer Steer Challenge (‘Challenge’) has demonstrated that intestinal worms are present in central Australian cattle. Young steers from 7 commercial properties within a 500 kilometre radius of Alice Springs, along with steers from Old Man Plains Research Station (OMP) are in the ‘Challenge’. Animal health testing conducted prior to induction into the ‘Challenge’ found intestinal worm eggs in the faeces of a number of young steers (6-9 months of age) from all the participating properties.

When worm egg counts are greater than 200 eggs per gram of faeces (epg), worm species are routinely identified by the laboratory. There are 3 types of worm species known to exist in the Alice Springs district, however only 2 species were found on the commercial properties during preliminary animal health testing prior to the ‘Challenge’. A summary of the type of intestinal worms in the young steers from the commercial properties can be seen in Table 1.

Table 1. Identification of intestinal worm species found in steers from commercial properties during animal health testing as a part of the ‘Challenge’.

<table>
<thead>
<tr>
<th>Number of commercial properties</th>
<th>Worm species identified</th>
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<tbody>
<tr>
<td>3</td>
<td>100% <em>Haemonchus</em></td>
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<tr>
<td>2</td>
<td>Varying presence of <em>Haemonchus</em> and <em>Oesophagostomum</em></td>
</tr>
<tr>
<td>2</td>
<td>Insufficient worm egg count to identify species</td>
</tr>
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</table>

*Haemonchus* species of worms are commonly known as Barber’s pole worm, large stomach worm or wire worm and are a very common parasite. Females lay over 10,000 eggs a day. A large infestation with *Haemonchus* sp. can cause anaemia and results in production losses.

*Oesophagostomum* species of worms are commonly known as nodular worms. These worms are not as common in the Alice Springs district; however their presence can result in an increase in scouring and can cause lifelong issues if scarring occurs in the small gut.

Figure 1. Damage caused by *Oesophagostomum* sp. in the digestive tract.
**Myth 2: “Intestinal worms are not a production issue for cattle in central Australia.”**

Faecal worm egg counts up to 200 epg have minimal impact on young cattle and their production. Once faecal worm egg counts rise above 200 epg, production begins to fall; over 500 epg usually results in the production capacity of animals being impaired.

The level of intestinal worm egg count in the faeces for some of the young steers was high enough to negatively impact on their production capacity. A summary of the worm egg counts can be seen in Figure 2.

![Figure 2](image)

**Figure 2.** The number of young steers tested within each category of worm egg count prior to entry into the ‘Challenge’. Note: This is combined data from all steers from all properties.

There are management recommendations that help young cattle prevent intestinal worm infestations and rising faecal worm eggs counts. These include:

- provide plenty of good quality clean hay in feeders during yard weaning;
- provide clean fresh water preferably in troughs;
- turn weaners out into fresh paddocks;
- use a low stocking density;
- limit access to grass growth from tank or trough overflows.

**Myth 3. “Scouring cattle always have intestinal worms.”**

In order to level the playing field for the ‘Challenge’, so that results can be compared once the steers were on OMP, all ‘Challenge’ steers were given Ivomec pour-on® to treat for intestinal worms. The steers were also fed coccidiostat to prevent clinical coccidiosis from occurring. It is interesting to note that these two actions did not stop scouring in some steers. Animals initially thought to be scouring from intestinal worm or coccidiosis burdens may have had transient scourds that is a part of a short term BVDV (pestivirus) infection. It is recommended that before any blanket intestinal worm treatments are applied to a mob, the results of a faecal worm egg count, along with potential management interventions and environmental factors, are discussed with your local animal health professional.

In conclusion, a young animal’s ability to absorb nutrients and fluids can be permanently impaired if intestinal worm numbers are not minimised. Now is the time to review management of young animals and make necessary changes for your next round weaning. If you are considering using an intestinal worm treatment ensure that it is strategic and based on objective results (eg. faecal egg count) with a clear purpose.
Cattle Nutrition: What is the primary limiting nutrient?

by J. Tincknell and J Coventry, DPIF – Alice Springs

“Targeting the primary limiting nutrient” is one of the key principles to understand about cattle nutrition. Cattle production (i.e. either liveweight gain or breeding in the first instance) is driven by the availability of the most limiting nutrient. The supplying of nutrients other than the primary limiting nutrient will have little impact on cattle production until the primary limiting nutrient deficiency is corrected.

Explaining the key principle
This is illustrated by the holding capacity of two barrels in Figure 1 below. In the Barrel #1 on the left, holding capacity (i.e. production capacity) is being limited by the lack of protein. So if you were to feed a protein supplement (as per the Barrel #2 on the right), you stop that leak; then energy is the primary limiting nutrient. The level of production never gets higher than the lowest leak.

Figure 1. The dynamics of addressing the limits

Barrel #1 - The primary limiting nutrient is protein.

Barrel #2 - The protein deficiency is fixed; the primary limiting nutrient is now energy.

Therefore it is critical to understand the hierarchy of nutrient deficiencies on your country. Lack of attention to this simple principle may be a major cause of economic wastage in your business associated with supplementation. On the other hand, attention to this principle can help you see through slick advertising campaigns that might otherwise entice you to spend money on products that do not address a deficit of the primary limiting nutrient, and would thus have no discernable impact on your cattle production.

Limiting nutrients on central Australian rangelands
On central Australian rangelands, the primary limiting nutrient at any one time is determined by a balance of multiple factors, such as grazing management, pasture quality, seasonal conditions, soil type, water quality, cattle class (age, gender and reproductive status). In general, the rangeland nutrition is highest when pasture provides a bulk of growing grass with good digestibility (55% to 60% digestible) and is matched to a budgeted stocking density. A summary of the relative importance of individual nutrients is given in Figure 2. Attention must first be paid to energy and protein, then phosphorus and sulphur, particularly in areas of low soil P and in areas where high levels of dietary tannins can bind-up essential micronutrients such as sulphur. Generally, when grass is brown or rank protein will be limiting production; when grass is in short supply energy is the limiting nutrient and when grass is green phosphorus is limiting.

© Copyright MLA 2006 ‘Beef cattle nutrition’
**Figure 2.** Relative importance of nutrients for cattle production in central Australia

<table>
<thead>
<tr>
<th>Level of Important</th>
<th>Nutrient</th>
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<tr>
<td>High</td>
<td>Metabolisable Energy</td>
</tr>
<tr>
<td></td>
<td>Protein</td>
</tr>
<tr>
<td></td>
<td>Phosphorus</td>
</tr>
<tr>
<td></td>
<td>Sulphur</td>
</tr>
<tr>
<td>Low</td>
<td>Sodium, Calcium, Vitamins, Trace minerals</td>
</tr>
</tbody>
</table>

© Copyright MLA 2006 Beef cattle nutrition

**Which supplement product to use?**

There are numerous products available to fill primary nutrient demands. In general, when deciding which product to use, consideration needs to be given to which product will be able to meet the nutritional requirements of the cattle, as well as what infrastructure and human resources will be available for timely delivery of the product to the cattle.

\[\text{Merry Christmas}\]

*May rain fall respectfully on your land when it is required.*

*May your cows carry their next calf while rearing their current calf.*

*May there be a surplus of cattle buyers with long arms and deep pockets of money.*
Beetaloo Rotational Grazing Field Day

Jane Douglas, Pastoral Production Officer, Tennant Creek

On the 10th of September 2014, a Rotational Grazing Field Day was held at Beetaloo. Forty two participants travelled from all over, Darwin to Alice Springs, Queensland, NSW and even Tasmania; just to see what was being done on the Barkly.

Participants met up at the Beetaloo homestead for morning tea, general introductions and a quick overview of the project. Everyone then convoyed out to the Peabush site, stopping off along the way to see the cattle in the rotation before lunch was served in the paddock.

After lunch, Dionne Walsh (DPIF) discussed the pasture sampling that is being conducted, and Jon Hodgetts (NRM) spoke on behalf of Desert Wildlife Services about the Fauna surveys. The real discussion came via talks by Jane and Scotty Armstrong about the management, infrastructure and development that have taken place across the property. John Dunnicliff also joined in with an informal panel discussion to round out the day.

After purchasing Beetaloo, Mungabroom and OT Downs, the Dunnicliffs and Armstrongs had noticed that the traditional set stocking regime was impacting on their land condition and animal performance. At this time, there were about 40 waters across the 3 properties. In order to realise the carrying capacity and production potential of the leases, a substantial infrastructure development program has been undertaken. There are now almost 600 waters and thousands of kilometres of new fencing and polypipe on the properties.

They believe that this development will:
- increase herd productivity
- improve and maintain land condition
- maintain biodiversity values within a productive native pasture ecosystem
- increase water use efficiency

The family believes that in order to achieve development of this scale, both forward planning and flexibility are essential. Know what you want to achieve in the long run, but be willing to change things along the way in order to reach the final goal.

Scotty Armstrong giving some insight on the development at Beetaloo

The set stocked areas tend to have higher levels of defoliation compared to the adjacent rotation paddocks, illustrating the issue that the development program is addressing.

Scotty prefers the simple set up, with the water lines connecting a series of tanks and bores on loop systems, allowing for storage and backup water supplies.
The Rotational Grazing Pilot has been collecting data on pasture & cattle performance, as well as fauna surveys, for a couple of years. At this stage it is still too early to say how the environmental and animal performance outcomes of the system compare to traditional grazing practices. Stay tuned for future results!

Participants at the Beetaloo Field Day

Bulls surrounding one of the hundreds of new tanks covering the property

Animal Biosecurity Branch
NT Brands Audit – starting soon

With approximately 1200 brands registered for use in the NT it is vital that all registration details are correct and that all associated information is still current. To ensure this is so, a NT wide audit of brands will commence soon.

The purpose of the audit is to ensure the NT Brands are being used in compliance with the NT Brands Register. For example the registered owner details are accurate, the registered brand is being used on the correct property/run as stated in the NT Brands Register (as stated on your Certificate of Registration etc).

That the registered brand owner is:
- Aware of their obligations under the Livestock Act and Livestock Regulations; and
- Comply with the Livestock Act and Livestock Regulations

Please refer to our website – www.dpif.nt.gov.au/animalhealth click on Brands Audit
Complete the NT Brands Register - Update your Contact details to ensure your details are current.
You can also use the NT Brands Register Search Database - http://brand.primaryindustry.nt.gov.au/
Alternatively, please contact your Livestock Biosecurity Officer for advice and assistance:

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Live Cattle Exports via Darwin Port – NOVEMBER 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.

### LIVE CATTLE

**TOTAL CATTLE** (including interstate)

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<th>2013</th>
<th>Last year 30/11/13</th>
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<th>1-30 Nov 2014</th>
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**NOVEMBER at a glance**

- 14,370 head of cattle through the Port of Darwin during November, 20,708 less than October and 913 less than November last year.
- 2014 total cattle figures indicate 139,578 head more than last year. NT cattle 38,750 more than last year.

### 2006-2013 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
### OTHER LIVESTOCK EXPORTS VIA DARWIN PORT (includes NT and Interstate Stock)

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**TOTAL**

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### NATIONAL CATTLE PRICES - W/E 27/11/2014

#### HEAVY STEER

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#### MEDIUM COW

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### CURRENCY EXCHANGE RATES

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Prepared by the NT Department of Primary Industry and Fisheries

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GLOSSARY

ASPIAC: Alice Springs Pastoral Industry Advisory Committee  DPIF: Department of Primary Industry and Fisheries
CAGLM: Central Australian Grazing Land Management  GRASP: Pasture Growth Model
CLMA: Centralian Land Management Association  MLA: Meat & Livestock Australia
CSIRO: Commonwealth Scientific & Industrial Research  NABRC: North Australian Beef Research Council
Organisation  NBRUC: Northern Beef Research Update Conference
DLRM: Department of Land Resource Management  NLIS: National Livestock Identification System
DAFF: Department of Agriculture, Fisheries & Forestry  NLP: National Landcare Program
DCQ: Desert Channels Queensland Inc.  NTCA: Northern Territory Cattlemen’s Association
DoE: Department of Education  PIC: Property Identification Code
DK-CRC: Desert Knowledge Cooperative Research Centre  RFID: Radio Frequency Identification Device

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