Alcoota Station was home for the 2015 Department of Primary Industry and Fisheries and Alice Springs Pastoral Industry Advisory Committee biennial field day, on October 22. The day focused on managing the things you can control, such as cattle nutrition, selection of functional females and males, pregnancy diagnosis, marketing strategies and of course, your attitude. Thanks again to hosts Margo and Chris Nott.

A total of 46 participants representing seventeen pastoral businesses and seven service agencies committed to the day. It was very encouraging to see a number of young producers, as well as some of the most experienced in the district, attend the event.

The day began and concluded with Helen Everingham, from The Centre Within, sharing the importance of life balance in family businesses and the impact that attitude can have on your work, life and family. Helen hit a particular cord with a selection of the audience and it appears that she will be back in central Australia next year. Désirée Jackson, Livestock Management Consultant, shared with the audience the significance of addressing the primary limiting nutrients for optimum production. Désirée began by pointing out the importance of healthy pastures, as grass remains the cheapest and most important feed source available. Later in the day, Désirée ran through a process for selecting products to support a balanced feeding regime.

Morning tea was held at the cattle yards. After the break Santa Gertrudis Breeders’ (Aust) Association classifier Russell Gray, discussed the importance of functional females and went through two pens of heifers to demonstrate desirable and undesirable characteristics.

... continued on page 3
Solar bores generate savings for Phillip Creek Station

Phillip Creek Station, located 40km north of Tennant Creek recently received $19,500 in funding under the Northern Territory Department of Business Smarter Business Solutions program. The funding covered half of the purchase price to replace three existing diesel generator powered bores with three new solar powered bores. The solar bores will provide about 85,000 litres per day to tanks and watering points across the station. Pressure switches have also been installed that will turn off the pumps when the tanks and troughs are full.

The solar bores have an annual fuel saving of around 8300 litres or about $13,000 per year; with additional savings on maintenance and labour as the existing diesel bores require staff to drive considerable distances to refuel them multiple times a week. Bore checks will still occur on the solar units, however they will be less often.

The Smarter Business Solutions program is designed to help Northern Territory business owners, Indigenous enterprises and not-for-profit organisations reduce their day to day energy, water and material costs. The program provides free advice and grant funding incentives for entities to adopt efficient, innovative technologies and best practices that will reduce their energy, water, waste and material costs.

For more information, contact the Department of Business Development Officers on 8951 8562 or businessinfo@nt.gov.au

Dear Reader

The much anticipated Alcoota Field Day (cover story), contributed to make 2015 a memorable year. And what a year it has been; with exceptional cattle prices, a large number of pastoral properties changing hands at record prices and many other highlights such as the establishment of the Central Australian Development Office in Alice Springs to support the Northern Territory Government’s Northern Development agenda. Foreign investors have discovered the potential of the Territory, although natural resources are being unlocked with caution through initiatives such as non-pastoral use permits. Inter-government collaboration has advanced with initiatives to improve the road transport system, increased access to markets and a commercial camel meat viability study due to be completed early in the new year.

The full component of the Department of Land Resource Management is now housed at AZRI, making it an information hub for much of your water, land, biosecurity, horticulture, pastoral and mining and energy needs. Our horticultural section, which serves Central Australia, has been bolstered with the recruitment of three new staff members starting in the new year. We will also be welcoming three Indigenous apprentices to join the team late January. I also use this opportunity to say goodbye to Jane Tincknell who returns to her family in Queensland after an 18 month contract with the department. Jane’s extension skills have been exceptional and a welcome addition to the pastoral team while her contribution to the Indigenous Pastoral Program has been outstanding.

At this time, we would like to wish you all an enjoyable Christmas break and look forward to providing ongoing high quality services in 2016.

Happy reading!
Pieter Conradie
Colin Hammond demonstrated portable veterinary ultrasound technology from Repro-Scan, and a comprehensive overview of the importance of pregnancy diagnosis and the positive impact it can have on a business’ bottom line.

A number of heifers were scanned to demonstrate the technology with a few producers trying their hand at it.

A quiet Alcoota bull was used by Russell Gray to run through the importance of functional males and to identify characteristics to help select bulls. Russell uses the Triple C principle which focuses on conformation, constitution and carcase to help select animals.

Four bulls were presented for a judging competition which gave participants an opportunity to put these into practice.

Désirée wrapped up the session in the yards with a short discussion about utilising data such as EBVs in association with visual assessment to make better decisions when selecting bulls.

Markets and marketing were the focus of the session after lunch. Meat and Livestock Australia’s Tim Ryan gave a thorough analysis of the current position for many of the markets available for cattle from Central Australia.

A panel discussion with Nicole Hayes, Undoolya Station, Chris Nott, Alcoota Station and Steve Cadzow, Mt Riddock Station, provided valuable insight into supplying MSA, Organic, EU, Feeder and Live Export markets. Special thanks to Nicole, Chris and Steve for agreeing to talk publicly about their marketing experiences.

DPIF Economics Leader, Francis Bright, was a crowd favourite during this session with his no nonsense practical steps for decision-making for marketing cattle. He discussed the importance of remembering the difference between marketing and selling… Marketing is a part of your business plan and identifies which markets will be targeted. Selling is a part of crisis management resulting from unexpected resource (feed, water, labour) shortages.

Thank you to our sponsors without whose support days like this would not be possible: Meat and Livestock Australia, Developing the North, Santa Gertrudis Breeders’ (Aust) Association, Repro-Scan and the NT Government.

And finally, thank you for the commitment to come along to Alcoota. Your comments and input, especially around the breaks and barbeque, added much value to the day.
The CRC for Remote Economic Participation’s Precision Pastoral Management Tools (PPMT) project has seemingly been a bit quiet over the past couple of years; however, we’ve been heads down and tails up, fervently working on the Precision Pastoral Management System (PPMS) software and conducting fieldwork. In fact, the team completed its fieldwork with Glenflorrie Station in the WA Pilbara region and is the first research site to be wrapped up.

How does PPMS Work?
As illustrated above, first the system receives data collected by a satellite on the pasture greenness. Then cattle liveweight data collected via the RLMS is also supplied. Followed on a weekly basis, the beef producer is then able to review trends in cattle liveweight and pasture greenness to determine whether any actions are required (such as the sale of cattle, supplementation or stocking rate adjustments).

What is the PPMS?
The PPMS is software (which will be customised for each station) that reports on the trends in cattle and pasture production. Its unique attribute is that it automatically collects, analyses and reports on cattle liveweight and pasture production data with little error and without labour expense.

The PPMT project held its first field day at Glenflorrie Station on 28 October, with an excellent representation of beef producers from the Pilbara region. The field day was the first opportunity for beef producers to learn more about the PPMS software and to see the RLMS in the paddock.

Murray Grey at Glenflorrie Station
“We are really excited at the potential benefits that this R&D project looks to deliver to the pastoral industry. The ability to monitor cattle live weights in real time on such a broad scale whilst simultaneously monitoring feed on offer, and make critical decisions before it impacts on the bottom line, is a game changer in my opinion...We have found it [the PPMS] to be a reliable and easy to use system.”

Hi-­Tech Cattle Production
PRECISION PASTORAL MANAGEMENT TOOLS PROJECT
Sally Leigo, Research Leader
Hi-Tech Cattle Production

PRECISION PASTORAL MANAGEMENT TOOLS PROJECT

Sally Leigo, Research Leader

The Grey family have found that the PPMS has helped them to minimise weight loss from their cattle through making better timed decisions for their supplementation program, minimising handling stress and adjusting stocking numbers in their paddock.

Murray Grey outlined that by just preventing the weight loss of 10kg/head (on average) for a herd of 400 head, amounted to four tonnes of beef. At $3/kg, preventing the loss of four tonnes of beef added up to the avoidance of a $12 000 loss for one herd, in only one year.

What’s next for the PPMT Project?

The PPMT project will be completing its last summer of field work on the four remaining cattle stations involved. Further field days are expected to be delivered in 2016 in the Northern Territory and Queensland.

Look after Australia!

Remember not to take fruit and vegetables, flowers, plants, soil and/or seed with you over state and quarantine borders as they may carry pests and diseases.

Restrictions apply to each state and territory for the movement of these items to protect Australia’s valuable local and overseas markets. These restrictions operate under state and territory legislation.

Movement of fruit and vegetables into NT Fruit Fly Free Zones, such as Ti Tree farms area may introduce pests resulting in expensive controls being implemented and loss of markets; impacting on both producers and the community financially and cost jobs.

Bringing produce and plant material into the Territory

The NT is free from a number of pests that occur in other areas of Australia including Mediterranean fruit fly from WA, which may be introduced in untreated fruit, leafy vegetables or flowers.

There are movement requirements for household and nursery plants, fruit and vegetables, seeds and grain, soil/compost and potting mix, agricultural equipment and other plant related materials.

Requirements can change as new pests and diseases are detected.

For up-to-date entry requirements contact:
NT QUARANTINE
(08) 8999 2118

If you are travelling interstate, contact the relevant authority in the destination state for movement condition advice. There is also a free call hotline number:

1800 084 881
The possibilities of a wetter December continue!

The national outlook for December 2015 indicates there will be a:

- **WETTER** than normal across the Northern Territory in December
- **WARMER** than normal days more likely across the Top End and the southern NT in January
- **WARMER** than normal nights more likely across the entire Territory in December and January.

Current climate influences include a combination of a strong El Niño in the Pacific, a decaying positive Indian Ocean Dipole, and very warm Indian Ocean temperatures.

As the old gives way to the new…
A year happily left behind or a year from which to learn?
MAYBE BOTH.

It’s been a tough year for many, and managing the stress and anxiety in difficult times means some major adjustments. The following may be a helpful reminder (all things that we talk about in “The Centre Within” course, but always good to hear again). I don’t need to remind you of the negative feelings that come with adjusting to the stress of major change – many of you know them all too well. What’s important is having some tools to call on to help us through the rough patches.

All of us may go through these adjustments but at varying rates. Not sitting in judgment on others (and ourselves) is essential – this can bring another set of stressful effects we can well do without, and sitting in judgment is a sure-fire way to bring down our self-esteem!

Some important things to remember, to maintain healthy well-being in stressful times include:
* eating well, good nutrition
* daily exercise
* adequate sleep
* time spent with family and loved ones
* taking note of how much time is spent listening to and looking at mass media
* recalling difficult times and remind yourself how well you coped
* recalling other people’s tough times and how well they coped
* being kind and patient with others (and to yourself)
* reminding yourself of the positives in life
* keeping that sense of humour, everyday find things to laugh at
* when you’re feeling ‘out of control’, setting small achievable goals (very effective in building your self-esteem)
* talking to someone with a willing ear

You may be aware of most of these, but it can be helpful to be reminded every so often.

It’s quite a list. Pick any or all that resonate with you. After all, what’s important here is what works for you. And if all of this doesn’t apply to you right now, it may in the future – a tip worth tucking away for later.

These are all things that are excellent for our well-being, and for building resilience and these work for our kids as well.

And what can we look forward to in the year that lies ahead?

Many happy times, with laughter and adventures that make for wonderful memories.

Sounds like a great year!

We know life will throw us some lessons in the year ahead – many things that we can work through and take control of and some over which we will have no control at all.

If this is familiar territory, some suggestions:
* review the past year’s events, congratulate yourself for the jobs well done and the things you achieved
* recall the good times enjoyed with family and friends
* remind yourself that wherever you are at the moment, this will change (both the “good” and the “bad”)
* savour the happy times but don’t dwell on the not-so-good ones (this too will pass).

Set your goals for the year – personal goals, goals with your spouse/partner, goals for the family and goals for the business.

Not everything will go to plan, but you will achieve more when you have a plan or goals to work on. No goals set means reacting to what happens in life, rather than deciding the path you want your life to take (and yes, there will be surprises).
* you decide the attitude you are going to have for the coming day/week/month/year (no matter what happens, it all comes back to how you handle it!)

* keep your goals in mind – write them down where you can see them as you come and go each day

* talk about the things you plan to achieve in the coming year (this way you will change your daily negative self-talk)

You may have noticed we are faced with more and more change these days. Some people view change positively and see it as an exciting opportunity to learn and grow. Others see change as fearful and something to avoid.

We are being challenged more often and that means changing our attitude and the way things are done. How we handle what happens in life is entirely up to us – every day, every week, every month.

Here’s to an exciting year ahead. May it be filled with wonderful opportunities to learn and grow, with precious times spent with family and friends.

Helen Everingham
The Centre Within
Mobile: 0402 454 898

Wishing you a Christmas filled with new friends, old friends, and all of your loved ones.

And all the best for 2016!

... from the Pastoral Production Crew!
NIRS (Near Infrared Reflectance Spectroscopy) technology enables producers to directly assess diet quality, enabling them to make pro-active and more timely management decisions.

What is NIRS?
The results from numerous NIRS and conventional analyses have been compared to develop calibration equations. NIRS is used most often to analyse faecal samples, known as F.NIRS (Faecal NIRS). The NIRS calibration equations produce predictions of the diet quality attributes for a sample being analysed. The calibration equations are used to predict these attributes:

- dietary crude protein (CP)
- dry matter digestibility (DMD)
- faecal nitrogen (N) concentration
- non-grass proportion of diet

The accuracy of the prediction varies considerably with the attribute being predicted. In some cases the accuracy of the prediction can be very good, such as for nitrogen or protein concentration in forage samples. Phosphorus analysis using wet chemistry analysis can be done on request.

What attributes are assessed?

**Dietary crude protein (CP)**
Predicted dietary crude protein provides an indication of the amount of crude protein in the diet. The amount that cattle will consume will depend on their overall intake of pasture, so the lower the digestibility of the pasture, the lower their dietary intake of crude protein.

Protein is usually the first nutrient to limit production once pastures mature and hay off. The exception is where there are endemic nutritional deficiencies such as phosphorus. If a diet is high in browse from native species, often the predicted dietary crude protein level will be high but much of this protein is unavailable for digestion by the cattle.

**Dry matter digestibility (DMD)**
Digestibility is defined as the percentage of feed consumed that is broken down and absorbed by the animal. Digestibility is strongly correlated with energy. As digestibility increases, the quantity of metabolisable energy (ME) available to the animal also increases.

**Faecal nitrogen (N) concentration**
Faecal N is the amount of nitrogen in the faecal material. Whereas dietary
CP is the amount of protein in the diet (that is, going down the animal’s throat), faecal N is the concentration of N in the faeces.

Dietary CP is NOT calculated from faecal N. However, there is a correlation between dietary CP and faecal N: when dietary protein levels are low, faecal N concentrations are usually low; and when dietary protein levels are high, faecal N concentrations are usually high.

**Dietary non-grass proportions**
Grass usually makes up the bulk of diets consumed by grazing cattle. Non-grass (i.e. browse or top-feed and herbage) plant material can contribute significantly to the diet, depending on land types and seasonal conditions. The NIRS prediction of dietary non-grass proportions will vary depending on the time of year and seasonal conditions and land type.

**Ash**
The ash content of most faecal samples falls in the range of 18–22%. Higher faecal ash levels are usually due to soil contamination arising from:
* poor sampling technique
* dung beetles depositing soil within
* cattle ingesting soil either on purpose or while grazing short pasture or herbage. (Ingesting soil is more frequent during drought when feed is short and cattle fed on the ground.)

Prediction errors will occur when faecal samples are contaminated with soil:
* Dietary CP is over-estimated
* Digestibility is over-estimated
* Dietary non-grass tends to be over-estimated.

Producers must take care to take fresh samples to avoid contamination.

**F.NIRS reports**
Producers must complete a submission form which is sent with the samples for analysis. This form provides information such as land systems, pastures species, rainfall, and animal class and stage of production, which the samples are taken from. This enables the F.NIRS analysis to be interpreted more accurately. It also equips producers with a means of assessing and recording pasture and animal information objectively. The NIRS report, the data collection sheet and photographs taken at the time of sampling all help with interpreting the results and also with assisting future management decisions.

**How well is NIRS working?**
NIRS works particularly well on some land systems under certain seasonal conditions. However, results are less reliable when variables occur:
* high proportion of browse in the diet (some contain high tannin levels which binds the protein; although the CP prediction may be accurate, the amount of protein actually available can be significantly less than predicted
* diverse land systems within a paddock
* high proportion of herbage in the diet
* sampling from a number of classes of stock in the paddock
* a reasonable amount of energy and protein supplements such as whole cottonseed, protein meal, grain and molasses.

The reliability of CP predictions for mulga and spinifex country is not particularly good because dietary CP tends to be overestimated; however the non-grass component and digestibility levels appear to be reasonably reliable.

On these land systems, it is a given that protein is more limiting than energy; once stock begin relying on mulga leaves, for example, as a major source of their diet, it can be assumed that the diet is protein deficient. Monitoring the
digestibility through faecal NIRS provides a reasonable indication of dietary ME, enabling producers to pinpoint when energy supplements need to be provided or whether animals need to be turned off to save on expensive bulk supplements.

**How to best use NIRS information?**
Whilst one F.NIRS analysis provides a good indication of the current dietary status of the mob tested, it is important to get an indication of how quickly diet quality is falling to determine when cattle are likely to require supplements, how long a supplement will be appropriate before it needs to be upgraded, and when cattle are likely to begin losing weight.

Getting consecutive analyses done for a paddock or a group of cattle that are of most concern is important for developing both short- and long-term nutritional management strategies.

Some of the nutritional management strategies that F.NIRS diet quality results can be used to assist in making informed decisions are:
* timing of weaning and age to wean down to
* putting classes of cattle with the highest nutrient requirements (e.g. first-calf cows, weaners) into paddocks with the highest diet quality
* identifying nutrients that are deficient in the diets as well as any nutrient imbalances, and modifying licks to ensure there is a balance between nutrients fed in licks with nutrients obtained from pasture
* identifying when to upgrade from a nitrogen-based (i.e. urea-based) lick to an energy-based supplement before stock begin to rapidly lose weight
* identifying when to sell stock before they begin losing weight.

**Getting dung samples analysed**
Symbio Alliance is licensed by MLA to do the NIRS analysis. A limited number of kits are available at DPIF or contact Désirée on 0746 583 254.

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On 20 October, a year seven class from Yirara College visited Old Man Plains Research Station (OMP) to look at landscape degradation. The class have been working on this theme in the class room and wanted to look at it as a collective in the field.

The seven students and two teachers spent a morning on OMP visiting stock yards, looking at cattle (the calves were a real hit with the kids!), pasture monitoring sites and the erosion areas.

Discussions centred at not only looking after the landscape for various aspects of pastoralism but also for wildlife and plants that play a role in the ecosystem. Varied questions were raised by the students and they were encouraged to photograph or film various parts of the tour.

We wish the students well in their studies and hope their trip around OMP was a rewarding one.
This article highlights a process that was used to purchase bulls aimed to improve meat quality of the OMP herd and to maximise returns from investment. The three steps involved in this process were:
1. Develop a short-list of potential bulls from available data (such as EBVs)
2. Visual inspection for structural soundness and temperament, and

So why invest in bulls in relation to business profitability? There are many factors that drive business profitability. Genetics play a role through influencing the fertility of the herd, sale weights and carcase characteristics, among other things. As bulls have more progeny than cows they have more of an influence on genetics of a herd, with 87.5% of the genetic composition of calf crop determined by the sires used over the last three generations, so thoughtful investment in bulls is critical.

Step 1: Homework and the making of a short-list

The first stage of homework involves working out your breeding objectives - what is most important to your bottom line? Is it the number of calves on the ground; the number of kilograms sold or is it meat quality traits such as marbling or eye muscle area? Consider how important each of these are, and then be careful to place the appropriate amount of emphasis on these when selecting bulls.

In our case, we considered fertility to rank the highest (gave it a weighting of 60%) followed by sale weight (30%) and then meat quality (10%). While meat quality is of lesser importance to profitability, it is the trait which requires the most improvement in the OMP herd. If we select for meat quality over fertility we will end up with a less profitable herd. Once you have ordered these in importance, you need to work out what measurable traits can be used to select bulls on these. For example, if weaning rate is the most important, what traits will you select on to ensure the sires you buy will increase weaning rate in your herd? Next is to discover what bulls are on the market and what performance data is available. It does take time to hone out a solid process to select breeding bulls, and this process undoubtedly varies from station to station and from one herd to another.

Estimated Breeding Values (EBVs)
An important tool available in bull selection is Estimated Breeding Values (EBVs), which are estimates of an animal’s genetic merit for a range of traits. EBVs provide information that can be used to generate a targeted short-list of bulls. They provide an objective method of comparing the potential worth of bulls to your
business. The more important a trait is to your profitability, the more important it is to select bulls that are top performers for the associated EBVs. It is very difficult to find bulls that tick all the boxes for many different traits, thus compromises are sometimes required. However, remember that genetic improvement is important no matter how well your herd is performing, as selecting a poorer bull will send your herd backwards.

What are the objectives?

FERTILITY
Many believe that fertility (i.e., the number of calves produced) is the most important genetic trait to their bottom line. If this is the case then fertility traits are the most important to select on. The Scrotal Size EBV and Days to Calving EBV are both important fertility EBVs. If improving calving rates in your herd is your first priority, these EBVs need to be your first consideration. Other data which can be important is the calving history of the dam of the bull - did she miss any calves? While weaning rate in the OMP herd is above average for the region, as this is our most important driver of profitability we will continue to select bulls that are top performers in the Scrotal Size EBV and Days to Calving EBV.

GROWTH
Sale weight is also an important consideration. On OMP, steers have been turned off at approximately two and a half years of age, at an average of 600kg over the past four years (data from our Quality Graze project). At this time, we are content to continue breeding adapted, medium maturity-type cattle with a focus of moderate muscling. Selecting bulls with average growth (600D and Mature Cow Weight) EBVs will be important to ensure that growth in the OMP herd remains moderate. In fact, the Quality Graze project reveals that on OMP environmental factors are having a greater influence on growth, rather than genetics: we begin with a 200kg weaner, and it consistently gains .5kg on average, every day. Selecting for growth too much can result in large framed, late maturing cattle which often have lower fertility.

MEAT QUALITY
The third trait being considered is meat quality and this has been a concern in the OMP herd. In particular we need to target marbling and eye muscle area (EMA). Carcase traits are generally independent of fertility, except the case of rib fat, where there is a positive effect on young female reproductive performance (Beef CRC 2012).

In general, it is possible to select bulls that have both fertility and carcase quality attributes.

Eye Muscle Area
An important meat quality trait is Eye Muscle Area (EMA) and there is an EMA EBV. The abattoir feedback from the past three years of data shows the EMA of OMP steers to only average 70.1 cm², indicating improvements in EMA size will add value. Feedback from the Alice Springs Show Carcase Competitions reveal an average EMA of 66 cm² (ranging from 43–90 cm²), while the average of the top four in 2015 was 86 cm², demonstrating a relationship between EMA and total MSA Index score. To improve EMA in the OMP herd, bulls with EMA EBVs above the breed average will be selected.

Intra-muscular fat or Marbling
Steers turned off OMP over the past three years averaged a MSA Marbling Index score of 285. Increasing marbling to ensure the majority of the steers are greater than 300 will
improve the MSA grading benefits (see Figure 1 below). In order to improve this in the OMP herd, bulls with IMF EBV that is greater than the breed average will be selected.

**Step 2: Visual Inspection**

The second stage of selection was general physical inspections (head, eyes, frame, etc.) plus assessment of structural soundness and temperament. This also contributed to the final check a breeding soundness examination (BBSE). Assessing temperament is extremely important as bulls with bad temperament can be dangerous and temperament is heritable.

At this time it was important to take note of the health certificate, vaccinations and treatments required to purchase the bull.

**Step 3: BBSE Testing**

The final stage is assessing the reproductive soundness of the bull. The Bull Breeding Soundness Evaluation (BBSE) is the most comprehensive and the best predictor of calf getting ability in a bull, and should be carried out by an accredited veterinarian, it includes:

- Scrotal circumference (cm) and palpation
- Physical examination for faults in the head, legs, joints, feet sheath, and penis
- Semen analysis for motility and morphology (or structure of the individual sperm cells)

### Figure 1 — Bull EBV and data
The disease occurs when the chemicals produced by the breakdown of fat (ketones) accumulate in the brain and become toxic. Animals become lethargic, depressed, go down and may have a high respiratory rate. Death follows from the combined effects of the toxins and dehydration from the inability to reach water. Many find the diagnosis difficult to accept because the cows that are affected are usually in good condition and may even be fat.

The cause of this condition can usually be traced back to the time the animal became pregnant. At that time there was probably a reasonable amount of available feed and she was able to eat enough to provide for her own maintenance and growth requirements plus give the calf in her uterus a good start. As time went on and the available feed started to decline because rain hadn’t materialised, the calf started to demand more from the mother than she could physically eat.

Without an adequate intake of glucose, for example, when the available feed is of poor nutritional quality, the body will start to mobilise fat reserves to provide an alternative source of energy. If the mobilised fat starts to accumulate in the liver faster than the liver can break it down, then liver function is affected and the shortage of glucose is made even worse.

Ketosis, also known as acetonemia, pregnancy toxaemia, slow fever or fatty liver syndrome may be more common on pastoral properties than we realise. Ketosis has usually been regarded as a disease of high producing dairy cows but we are starting to see signs that it maybe just as common among beef cows in late pregnancy in this region.

The result is that the fat will continue to build up even though the animal can appear to be in good condition. The liver becomes pale and enlarged and tears easily at post mortem. The ketones build up and death eventually follows. Phosphorous deficiency may also contribute to the prevalence of ketosis.

Losses from ketosis are not as obvious as an outbreak of plant poisoning or botulism, where it is not unusual for a group of animals to be affected at the same time. As it is rare for a pastoral property to request a post mortem on an individual animal, the full extent of the losses to ketosis may be underestimated. Post mortems carried out on properties recently have confirmed that the cause of death was due to ketosis and this provides a good indication that the nutrition in the remaining pasture is no longer sufficient to meet the requirements of an animal in late pregnancy even though the animals had a full gut and appeared to be in good condition.

Preventing losses means ensuring that cattle in late pregnancy have access to adequate feed of suitable nutritional quality and this could mean providing supplementary feed during dry times to avoid losses or planning ahead to ensure that cattle in late pregnancy can be moved onto country which still has good quality feed.

The Results
Many studs were considered, but based on our selection criteria and EBVs available, the search narrowed to bulls from two stud properties. All had some recorded EBVs and together with breed society records and on-property performance data, provided enough information to assess and short-list bulls.

Fertility aspects were assessed with data from breeding soundness examinations. Critical aspects of examinations included scrotal circumference measurement, semen morphology, and sheath assessment. Using all the available information, the bulls were purchased within the budget we had available.

Where to from here?
In addition to the annual breeding soundness examination for all OMP herd bulls, these bulls will be monitored during the routine muster data collections for the Quality Graze Project. Calves from these bulls will also be recorded in order to demonstrate various outcomes for: steer carcase quality and value based on: MSA grading and abattoir payments; heifer reproduction performance; and OMP herd genetic potential based on averages of herd EBVs for carcase quality.

Trisha Cowley is a Pastoral Production Research Officer in Katherine, 8973 9770
Chris Materne is a Pastoral Production Officer in Alice Springs, 1851 8135.
Our thanks to Jocelyn Coventry, Tim Schatz, and Pieter Conradie, for providing information and technical advice.
Live Cattle Exports via Darwin Port – NOVEMBER 2015

Please note: figures are for cattle exported through the Port of Darwin only; some NT cattle are exported through interstate ports.

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<td>TOTAL</td>
<td>359,616</td>
<td>493,958</td>
</tr>
</tbody>
</table>

NOVEMBER at a glance:
- 32,012 cattle through the Darwin Port during November; 12,903 less than last month and 21,405 less than at the same time last year.
- 19,847 NT cattle through the Darwin Port during November; 13,839 less than last month and 21,703 less than at the same time last year.

![Live cattle exports thru Port of Darwin 2014 - 2015](chart.png)

**OTHER LIVESTOCK EXPORTS VIA DARWIN PORT**
Includes NT and interstate stock.

<table>
<thead>
<tr>
<th>Destination</th>
<th>Buffalo YTD November</th>
<th>Goat November</th>
<th>Camel YTD November</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brunei</td>
<td>625</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Indonesia</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Philippines</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Sabah</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Sarawak</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Malaysia</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Vietnam</td>
<td>4,468</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Egypt</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Thailand</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>TOTAL</td>
<td>5,093</td>
<td>1,000</td>
<td>0</td>
</tr>
</tbody>
</table>

**NT CATTLE MOVED INTERSTATE**

<table>
<thead>
<tr>
<th>Destination</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSW</td>
<td>2,550</td>
</tr>
<tr>
<td>QLD</td>
<td>4,274</td>
</tr>
<tr>
<td>SA</td>
<td>1,726</td>
</tr>
<tr>
<td>VIC</td>
<td>1,577</td>
</tr>
<tr>
<td>WA</td>
<td>303</td>
</tr>
<tr>
<td>TOTAL</td>
<td>10,430</td>
</tr>
</tbody>
</table>

**NATIONAL CATTLE PRICES**

**CURRENCY EXCHANGE RATES**
[www.oanda.com/currency/converter](http://www.oanda.com/currency/converter)

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