Editorial – Issue 38

Hello and welcome to the 38th issue of Top Paddock. The build-up is well and truly with us and we have already seen some good storms in the Top End, hopefully indicating a good wet season to come!

We have some interesting articles in this edition, which include: David Ffoulkes talking about Ramadan and some issues that may affect the timing of beef cattle turnoff for the live export trade, there is a summary of a heifer forum held in Darwin and hosted by MLA, Vicki Simlesa discussing some quarantine issues for Top End bee producers, while Robert McFarlane has written a tongue-in-cheek report on a story which appeared in the NT News.

In this issue:

Northern Australia Land & Water Taskforce Presentation

Meat and Livestock Australia Darwin Heifer Forum

Earlier Demand for Feeder Cattle Likely in Future

There will be a chemical user’s accreditation course (SmartTrain) conducted at Douglas Daly Research Farm on October 30 & 31. For more information please contact the editor/s.

I have included below some links to very interesting documents and news items:

The latest on the equine influenza


DPIFM WaterSmart site


Pigeon Hole field day booklet

http://www.nt.gov.au/dpifm/Primary_Industry/index.cfm

Cheers and happy reading from the editorial team:

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Northern Australia Land & Water Taskforce Presentation

This is a copy of the presentation made to the Northern Taskforce by Malcolm Bishop, in his role as President of the Northern Territory Agricultural Association (NTAgA). The taskforce is chaired by Senator Bill Heffernan.

Presentation To The Northern Australia Land & Water Taskforce-Darwin 23/07/07

Thank you Mr Chairman for providing this opportunity for the Northern Territory Agricultural Association to address the Northern Australia Land and Water Taskforce, on the vital issue of the potential for further land and water development. It is vital Mr Chairman, not only for the people and the economies of Northern Australia, but also for the wider Australian community, whose taxes supplement those of us who reside in the north.

The Northern Territory environment is largely intact and not blemished by excessive development. The Territory's sensitive land and maritime ecology is in a relatively healthy state, and continues to flourish in a pristine environment. The Territory has a diverse range of relatively undisturbed ecosystems – tropical savannas, woodlands, shrub lands, grasslands and ground and surface water systems that have a complex environmental, social and cultural history.

The Northern Territory covers as area of 1,346,200 square kilometers and supports a population of approximately 200,000, with the majority living in the major towns of Darwin, Alice Springs and Katherine. With only 6.73 people per square kilometer, one quarter of the Territory’s population is indigenous. Territory indigenous people are significant landholders, currently having stewardship responsibilities for 44% of the Northern Territory landmass.

Less than 1 per cent of the Territory has been cleared, and most agricultural pursuits are non-intrusive. Ample water is available in the Territory’s tropics. About 65% of Australia’s run-off is in the three drainage divisions located in the tropical north. On average, 22% of all tropical waters are shed to the ocean.

The Territory’s irrigation industry is at an adolescent stage and also in a privileged position. Unlike in other States, is has no need to renovate and reform, but rather it has a significant opportunity to develop and manage its ground and surface water in a responsible way.

Irrigation sites are sporadically and opportunistically located across the Territory, and are largely confined to a small area when considering the Territory’s geographical size. Centre pivots and drip irrigation systems, extracting ground and surface water, are the main application systems in the agricultural and horticultural sectors.

The Northern Territory agricultural and horticultural industries possess strong prospects for economic growth, mostly driven by national and international market demand and opportunities. Major projects that include hay exports, bio fuel production, biotechnology crops, and expanded horticulture crop production will add millions of dollars to the Territory’s economy. In turn, these crops will be reliant on water to irrigate during the ‘dry’ season.

Given the above scenarios, the irrigation industry can be pro-active and responsive to the lessons learnt from its southern counterparts, and adapt appropriate water systems and management strategies to ensure that water is available, not only for continued economic development, but also for environmental and cultural requirements.

Against this background of an abundance of suitable land and ample water, Mr Chairman, the Northern Territory Government, in November 2003, imposed a moratorium on land clearing and subdivision approvals in the Douglas Daly Region. This despite the fact that there are less than 100 farmers involved in agriculture in all of the Northern Territory.

About two hours' drive south-west of Darwin, this area covers about 100,000 hectares, and currently supports about 20 farms involved with export cattle, cavalcade hay, sorghum, soybean, corn, maize, a turf farm and melons. The moratorium was to remain in place until this year, 2007, but there has been no announcement it is likely to be lifted any time soon.

Initially, the Northern Territory Government established a Community Reference Group to advise it on a land use framework. This Group was subsequently abandoned, and in 2006, was replaced by the Douglas Daly Management Advisory Committee.

At its first meeting in July 2006, this Committee identified the moratorium on land clearing and subdivisions, and the defacto moratorium on water extraction, as priority areas for
consideration. A year on, and we await some indication from Government on the progress to date of this Advisory Committee.

We are hopeful Mr. Chairman that the moratorium will be lifted on at least some land in the Douglas Daly area soon, as there is a real supply problem on land available for agriculture.

We believe that good progress has been made in moving toward the National Water Initiative Framework. However, indications are that the Northern Territory may decide to deviate from the notion of perpetual licenses and remain with 10 year low security licenses.

As you would appreciate Mr. Chairman, this is a very serious matter from an irrigator perspective. It will discourage long term investment in sustainable irrigation industries and the uptake of efficient irrigation technologies and practices. And worse, it will encourage short term opportunists into the industry. Again, we await the outcome with some trepidation.

The issue concerning the moratorium against sub-divisions is just as serious Mr. Chairman. Critical mass cannot be achieved without available land. The shortage of land has caused a major distortion in land prices as industries scramble to achieve critical mass. This naturally results in a seriously low return on capital, which discourages further investment in agriculture. It is a destructive process due to Government policy, and needs to be immediately changed if the industry is to survive.

The Northern Territory Department of Primary Industry, Fisheries and Mines has recently submitted a proposal for funding of $20 million from the National Water Commission’s Water Smart program, to explore and demonstrate the viability of irrigation systems in Northern Australia.

This major project has the unconditional support of the Northern Territory Agricultural Association and hopefully, Mr. Chairman, will gain the support of Land Councils in the Northern Territory. A large proportion of suitable land for irrigated agriculture development is within the control of Land Councils.

There are ample opportunities for Aboriginal people to participate in joint ventures for agricultural development. However, a major disincentive for both parties has been the red tape and inefficiencies in dealing through Land Councils. Also, we have been told that up to half of all earnings by a community have been lost, as they are presently channeled through Land Councils.

The Primary Industry project will explore the short, medium and long term ecological, social and economic costs and benefits of alternative approaches to irrigation in Northern Australia, using an Environmentally Sustainable Development framework. It should prove to be an important addition to the research to be undertaken by the Northern Australia Land and Water Futures Assessment team.

It is anticipated, Mr. Chairman, that this project, if approved, will allay widespread concerns in some quarters that expansion of irrigation in Northern Australia may result in degradation of ecosystems. The project will address irrigation sustainability in a holistic manner, monitoring and evaluating economic, environmental and social parameters. Our Association commends this project to the Taskforce.

If Northern Australia is to make its proper contribution to agricultural development, there will be a need for substantial investment in infrastructure in rural areas Mr Chairman. The Northern Territory Government recently announced a plan to spend $814 million for power and water infrastructure over the next five years. Regrettably, not one dollar was earmarked for power or water projects in the rural area.

In our electronic age Mr. Chairman, we often speak as though the tyranny of distance has been solved. The reality however is that it is just as far to southern and overseas markets as it has always been, and the cost of freight in a small market is often prohibitive. Freight subsidies are one way to stimulate the investment needed for specific industries to spend on the infrastructure required to facilitate the development of a viable agricultural sector.

Another significant threat to the development of rural industries and rural economies is the proposed implementation of Local Government reforms. We believe this requires the incorporation of 92 per cent of the Northern Territory, with no real extra funding to facilitate this major process. Consequently, substantial rates and taxes will need to be imposed to fund infrastructure and fancy Council Chambers. This will act as a further disincentive to invest in agriculture.

We are told Mr. Chairman that this reform is being pushed hard by the Federal Government to help address some of the issues concerned with Aboriginal communities. If this is the case,
adequate funds need to be provided to build infrastructure and a network of rural towns throughout the sparsely populated Northern Territory.

In Darwin, the CSIRO has excellent research facilities that were until recently, used in part to undertake crop research. It is strongly urged Mr. Chairman that this fine institution be again funded for crop research, as it can play a pivotal role in identifying those crops that might be grown in Northern Australia on an ecologically sustainable basis.

To conclude, Mr. Chairman, the Northern Territory Agricultural Association is highly supportive of the work of your Taskforce. We are confident that your Committee will find that there is enormous potential in Northern Australia to further develop land and water resources in an ecologically, culturally and economically sustainable manner.

The research to be undertaken by the Northern Australia Land and Water Futures Assessment team and the National Water Commission’s Water Smart funded project, to be undertaken by the Department of Primary Industry, Fisheries and Mines, will be invaluable in providing the science and on-ground experience to underpin this development.

Thank you again for the opportunity to put our views to the Taskforce.

Meat and Livestock Australia
Darwin Heifer Forum

On Tuesday 21st August, Meat and Livestock Australia (MLA) hosted a research forum in Darwin on the northern beef program’s heifer projects. The forum was part of the mid project review and key presenters included Dr Geoff Fordyce and Dr Dick Holroyd (QDPI), Tim Schatz (DPIFM) and Michael Jefferies (AgWA). The review session was chaired by Professor Keith Entwistle (independent assessor).

The main message to come out of the forum is that many producers do not have a good picture on actual re-conception rates in their first calf heifers. In the 2004 NT Pastoral Industry Survey the average estimated re-conception rates for lactating first calf heifers from the 179 NT managers interviewed 63 per cent. However performance recording on many NT commercial properties has shown that the real figures are actually much lower than this (and are often less than 10 per cent).

The project leader of the NT heifer project, Tim Schatz, is collecting detailed information on heifer performance from ten NT properties in the Katherine, VRD, Barkly and Alice Springs regions. This work is finding that re-conception rates in lactating first calf heifers are much lower than expected, and also that calf loss is much higher (it is not uncommon for up to 30 per cent of PTIC heifers not to rear a calf to weaning).

Another component of the project is to look at cost effective strategies to increase heifer conception and re-conception rates. The key to good heifer fertility is to manage young heifers so that they reach maiden target joining weights (eg. 280 kg) and so get in calf early in the season and then to maintain the condition of heifers prior to calving and through the period when they are lactating. Methods of achieving this include the use of conservative stocking rates, supplementary feeding with either high protein pellets, copra meal or good quality pasture.

This project is due for completion at the end of 2009. Further updates on the projects will be distributed via field days and progress reports. A more detailed article will be included in the next edition of Top paddock.

Earlier Demand for Feeder Cattle Likely in Future

By David Ffoulkes, DPIFM

Since 1999, an average of 211,500 head of NT cattle has been exported annually to South East Asia. Live exports seem to peak between May and July in the calendar year when the bulk of export feeders are ready for shipment (see graph below). Up to now this has been a convenient seasonal pattern of turnoff for SE Asian importers, however this could change over the next five years.

The demand for beef in South East Asia is steadily increasing although annual consumption per capita is still relatively low, for example, 2.45 kg (Indonesia) vs 37 kg (Australia) because of its higher price compared with other meat sources. However beef is in great demand for special occasions, especially at the Islamic festival of Idul-Fitri which celebrates the end of the fasting period of Ramadan. Then about two months later, another important Islamic event called Idul-Adha (festival of sacrifice) occurs, when goats and young cattle are slaughtered and the meat shared amongst the poor. Chinese New Year is also a
busy time for the food industry, however red meat is not usually consumed in large amounts.

With a total Muslim population of 235 million in South East Asia, 195 million of which are in Indonesia, the amount of meat consumed at Islamic festivals is enormous. In Indonesia alone it’s estimated that around 22,000 Mt of beef or about 150,000 head of cattle are likely to be consumed at Idul Fitri, representing about 8.5% of the total cattle slaughtered annually. The Indonesian feedlot industry is at capacity for 90-120 days in the lead up to the post-Ramadan holiday to fatten imported feeders in time for the food festival. Preparations for this can be seen in a peak of live exports 3-4 months prior to Idul Fitri (see graph below).

Unlike Christmas and New Year holidays, the Muslim calendar of Islamic festivals is based on dates in a lunar year of about 354 days. Because the lunar year is about 11 days shorter than our calendar year of 365 days, the Islamic festivals fall on progressively earlier dates in our calendar. Thus in 2000, Idul-Fitri was on 27 December and in 2005, it was on 31 October. By 2010, the festival will be held in late August. This could have consequences for the NT pastoral industry in its ability to supply large numbers of suitable feeders for the Indonesian feedlot industry around April and May or 3-4 months prior to the festival.

The graph below shows average monthly live cattle exports to Indonesia over a 9 year period based on a calendar year (pink line: 12=December) and on months prior to Idul-Fitri (blue line: 12= month of Idul Fitri). In 2010, Idul-Fitri will take place in month 8 (on graph) and demand for feeders (blue curve) will peak in month 4, before the seasonal pattern of turnoff in the calendar year.

Conversations with Livestock Relocation Technicians

When a young bloke first introduced himself as a “livestock relocation technician” I must admit I had no idea what he was talking about! He was a truck driver, carting cattle and sheep in south west Queensland and took a lot of pride in his job. To be honest, until I got involved in developing a course for drivers in the northern beef cattle industry, I had very little appreciation of the skills required in the job.

Katherine DPIFM is currently in the process of developing a course funded by Meat Livestock Australia (MLA) aimed to maintain and where necessary, improve the quality of animal care during transport. The course will cover animal welfare, animal behaviour and handling, and best practice guidelines for transporting cattle. The course also provides an opportunity to demonstrate the pastoral industry’s commitment to animal welfare. The course addresses training and professionalism at all stages of beef production from the paddock through to the end product on the plate. In today’s climate of animal rights movements, and with difficulty in recruiting or retaining experienced staff, this type of vocational training is extremely relevant.

Back to conversations with livestock relocation technicians.

We have been interviewing drivers, owner-operators and operations managers from across the NT and northern Queensland in order to document best practice in cattle transport for the course. I have helped load a few trucks in my earlier cow chasing days, but I have never been on the road with a load, so I had no real understanding of the realities of carting cattle. I have a new found respect for drivers. Gone is the old image of the Jackie Howe teamed with pluggers, ruggers, and a belly. That young bloke had it pretty right when he said livestock relocation technician – it is a professional job, and you have to be pretty skilled to be able to do it well. It’s a tough job with long hours and often receives little appreciation, despite the fact that the quality of transport has a big impact on the quality and saleable quantity of the end product.

The response that I received from transport operators has been really positive, with all individuals very keen to help us develop the course. There was one theme that did crop up a few times, and that was of pre-transport
management. Some felt that it was unfair that all animal welfare issues related to transport were lumped onto the driver. Once again I was totally unaware of how much of an impact treatment prior to transport had on how well the cattle subsequently travelled. Drivers know exactly what impact it has, as they are there every step of the journey to see it. So if anyone knows what the best strategies are for pre-transport management, it will be the truckies.

Based on the interviews, I have put together a few tips for producers that will help your cattle to travel better reducing the amount of shrinkage, bruising and mortality – basically putting more dollars in your hip pocket. I will gradually cover these over the next few issues.

My first tip is about consideration. Put yourself in a truck driver's shoes for a moment and look at it from their perspective.

Experienced drivers have trucked hundreds of thousands of cattle over time, so their advice on pre-transport management and loading density is pretty valuable.

During the peak season they might have just come straight from one job to the next, so will have been going hard. If they then have to wait while cattle are yarded or drafted, that effectively cuts into their valuable time and further deprives them of precious sleep. Remember they still have to get your cattle to the final destination. Fatigue is a real issue in their job, and the impacts of it can be fatal – for them and for your cattle.

It's important to realise that drivers only have a certain number of driving hours before they have to rest, so sitting around waiting to load is unproductive. It may make the trip for your cattle longer if the driver has to pull over for a sleep.

A truck with a full load averages a speed of around 70km/hour. This means that a loaded truck can't complete a trip in the time that you could in a car. If the driver travels at a higher speed then it's extremely likely cattle will be thrown about and injured and they are at a greater risk of rolling the trailer. Faster is not better in terms of shrinkage, bruising and safety.

If a driver gets hurt helping down in the back yards (which is not their job anyway), then there is no-one to drive the truck and he is without an income for the time he can't drive because he won't be covered by workers compensation.

And the age old saying of a 'little bit of hospitality goes a long way' should not be forgotten. You might wonder what all this has to do with your hip pocket but to quote John Lapworth from QLD DPI&F; if you 'look after your driver, he will look after your cattle and you'. Makes sense doesn't it.

For more information on the course or if you would be interested in commenting on its development please call Trisha Cowley on 8973 9770

**NT Brands Register - Update your Contact details**

Document last updated: 01/08/2007

**Have you changed your Postal Address?**

If you are not sure complete the following just to be safe – see below.

**Are your brand details accurate in the NT Brands Directory?**

If not please complete Attachment A and send or fax to Registrar of Brands – see below.

**Please note:**

If the property listed in the NT Brands Directory, is no longer the property you are using your brand on, then you MUST complete a Change of Run form.

If the names of the Registered Owner/s of the Brand/s have changed, then you MUST complete an Application for Transfer of Brand.

Please remember to discuss all issues / changes with your Regional Stock Inspector first.

All relevant information and forms are located on our Website: [www.nt.gov.au/dpifm/nlis](http://www.nt.gov.au/dpifm/nlis)

**Brands**

To ensure your contact details and postal details are correct at all times, please complete the following and return to:

Registrar of Brands

LISA / Brands, DPIFM

GPO Box 3000, DARWIN NT 0801

Or

Fax to: LISA - 08 8999 2146

See form at [Attachment A](#)
Changed entry conditions for bees into the NT

The bee keeping industry in the Territory along with the rest of Australia has had to face major changes in the keeping of bees and honey production. The Territory has a small but fruitful bee keeping industry with commercial honey production and pollination of crops.

In the past, Australia has encountered a number of pests and diseases that threaten the very livelihood of bee keeping. Examples include: Small Hive Beetle which was detected in Australia a few years ago; the Varroa mite, which has impacted the New Zealand honey industry (minor incursions have been controlled in Australia); American Foul Brood (AFB) and European Foul Brood (EFB), which is common in the bee industry of the eastern states of Australia. Colony Collapse Disorder preys on the USA bee industry and is a potential threat to the Australian industry. Cane toads are also impacting the Australian industry in areas where they have become established.

The Northern Territory is free from pests and diseases that are present in southern regions. The NT has no small hive beetle, no foulbrood and has only just encountered cane toads.

Horticultural demand for pollination services by bees has also increased over the last few years. The demand for pollination services is currently being met by arrangements between growers and bee keepers. The Territory has a high risk of pest and disease entry unless entry conditions for bees, bee products and equipment is restricted.

Concerns have been expressed over the maintenance of the disease and pest freedom status of the NT, while also meeting the demand for pollination services. In response bee keepers, local growers and government staff have collaborated to produce and release a survey to gauge the pollination requirements of the NT horticultural industry. The survey results have assisted in developing an outcome that was acceptable to all interested parties.

It was agreed that the most appropriate solution was to change the conditions of entry for bees, bee products and equipment. The entry of bees is restricted to package bees from WA, as the state is free from small hive beetle. Bees entering the NT from WA must also be accompanied with a health certificate and have negative testing of honey for AFB and EFB. Hand picked queens and escorts are allowed to enter from other states providing they have an approved health certificate. Honey is free to enter, however all used equipment and bee products like pollen must be irradiated.

Please find below an information sheet outlining the survey results and the conditions of entry as gazetted in the 8th of August 2007 NT Government gazette.

If you have any questions or enquiries please fell free to contact the Technical officer for Bees and Crocodiles - Vicki Simlesa on 08 89992036 or 0401 115853.

Information Sheet IS49

Which pasture crop provides results?

By Peter Shotton Pastoral Production Research Officer, DPIFM

Objective:

A 12 month research project was undertaken to determine the consumption of leucaena and other pasture legumes by Brahman cattle grazing mixed pastures at Douglas Daly Research Farm (DDRF) in 2005-06.

Background:

Pasture grazing trials at DDRF were first established in the 1970s with the objective of assessing the productivity of different pasture species and mixtures under continuous grazing. Results of the trials showed the predominantly grass stands of Sabi, Buffel, Jarra, Strickland, Pangola, Kazungula and Higane and the legume stands of Wynn and Oolloo have given varying results of cattle live weight gains over the years (within the 100-250kg/hd/yr range) with the grasses Kazungula and Higane eventually dying out within a 5 year period.

The introduction of a companion legume such as Leucaena, Maldonado, Blue Pea, Wynn, Oolloo and Verano, has been used and in most cases the grass/legume pasture mix has produced higher live weight gains when compared to the grass-only pastures.

Legumes have a higher nitrogen (crude protein) percentage than grasses and while they provide a higher protein feed for cattle, they can also provide extra nitrogen to the grass.
Although the pasture composition and yield of grass, legume and other plant species are estimated, the actual consumption of the grass and non-grass species by the cattle cannot be measured.

By collecting dung samples and having them analysed through Near Infrared Reflectance Spectroscopy (NIRS) technology, we are able to determine the percentages of grass and legumes (non-grass) of the diet as well as the dietary crude protein, faecal nitrogen, dietary digestibility, legume % and the % of ash. Live weight gain can also be predicted based on the NIRS analysis, pasture and management information, location and rainfall.

**Method:**

Eight of the pasture species evaluation trial paddocks were selected to assess the consumption of grass and legume over a 12 month period. These paddocks were selected for the varying quantity of grass and legume species present.

The trial paddocks were 4 hectares each and were stocked with 5 weaner steers which are replaced every 12 months in June. Cattle were supplemented with Uramol®, lickblocks during the dry season and with Phosrite®, blocks in the wet season. Intake was recorded monthly with an average intake range of 47 to 146 g/head/day (average 90) with Uramol®, and 36 to 122 g/head/day (average 80) with Phosrite®.

Cattle were weighed, assessed for condition and P8 (rump) fat depth monthly to assess their production progress. Dung samples were also collected monthly taking samples from each animal at weighing. Samples from each group were combined, mixed, sub-sampled then dried in a dehydrator at 60°C.

After drying, the samples were analysed by Davies Laboratory, CSIRO, Townsville for predicted dietary crude protein %, faecal N %, digestibility %, non-grass %, ash % and the predicted live weight gain in kg/day.

A total of 130 dung samples were analysed with most samples collected from steers in paddocks 39 (Buffel grass and leucaena @12 m spacings), 45 (Pangola and leucaena @ 12 m spacings), 48 (Sabi grass, Wynn and leucaena @ 10 m spacings), 534 (Buffel grass and leucaena @ 8 m spacings), 535 (Buffel grass and Oolloo), 533 (Buffel grass and Wynn), 42 (Jarra grass and Wynn) and 51 (Strickland grass and Wynn). Pasture leaf samples were also collected three times throughout the year to assist with NIRS calibrations.

Table 1. NIRS yearly averages and cattle live weight gain – Attachment B

In all treatments assessed, the consumption of legume as measured from the dung samples was the highest during the last 2 months of the trial (May and June 2006) and at this stage the pastures were starting to dry off (keep in mind the long duration and high rainfall of the 2005/06 wet season). Cattle at this stage are at their heaviest, requiring a higher quality and quantity of pasture to increase live weight gain.

As expected, the dietary crude protein, faecal nitrogen and digestibility all dramatically improved at the start of the wet season then declined in May and June 2006. The highest yearly live weight gains were produced from the 4 grass / leucaena paddocks and paddock 535 (Buffel - Oolloo mix). Although the consumption of Chamaecrista spp varied between paddocks
533, 51 and 42, yearly live weight gains were very similar.

The majority of animal weight gain was achieved during the wet season. Table 2 shows the live weight gains in the last 5 months of the dry season, in the 5 months of the wet and the first months of the 2006 dry season.

Table 2 – Live Weight Gains – Attachment C

Floodplain Pasture Establishment

The value of floodplain improved pastures in coastal regions of the Top End is well known. Cattle and buffalo performance on floodplains in the Dry season is the key to the profitability of the coastal properties in the NT. There are two basic categories of floodplain – black cracking clays, nearer the coast and grey clays (Solodics) or bull-dust plains further inland.

The black cracking clays support a range of productive species both native and improved but the depth of flooding and carrying capacity of the different types vary considerably.

Generally the solodics require improved pasture species and fertiliser to be planted before they are useful. They often contain only kerosene grass, which is unpalatable to stock.

Some native species provide useful grazing for stock eg, Rice grass Leersia hexandra, Paspalum spp., Eriochloa spp., Hymenachne acutigluma, Pseudoraphis spinescens, (Spiny mud grass) and some Echinochloa spp.

The most widely used improved species are Hymenachne acutigluma (native Hymenachne) and Brachiaria mutica (Para grass) and Echinochloa polystachya. (Amity Aleman grass)

Para grass has become naturalised over the last 100 years in the Top End over large areas. Improvements in spread and vigour have occurred since the removal of the feral buffalo herds, with Hymenachne appearing in areas not previously seen prior to 1985.

Site Preferences

Hymenachne favours the more deeply inundated floodplain or on the fringes of the paperbark and floodplain where there is significant seepage from upland country. Generally these areas are the last areas on the floodplain to dry out (if at all) towards the end of the “Dry”. Hymenachne can be sown using runners and seed. Seed needs to be harvested from a boat during the wet season when flooded.

Para grass is more suited to the shallower flooded areas up to 600 mm in depth. It can be spread by both runners or seed, and will tolerate sustained flooding up to 1 metre provided the plants are not grazed short at first flooding.

Amity appears to have a wider tolerance to flooding when compared to Para grass. It appears to be more tolerant to much deeper flooding whilst on the on the other hand also establishes better on the drier, non flooded (waterlogged only) areas. It can only be planted vegetatively as no viable seed is produced. It is very palatable to stock, but still recovers well after grazing.

Establishment From Seed On Floodplains

In the Top End, establishment from seed is always a risky procedure depending on weather (rainfall) during and following planting, particularly on the northern black cracking clays.

As black soils get very hot and crusty if dry weather follows planting, seed survival can be low and seedling death is common.

Planting of seeds should be restricted to weather that promises frequent rain but not inundation of the area. This can be somewhat difficult to predict in advance. Also weather affects the trafficability of the black cracking clays, so the best times to plant are often not the best conditions to be driving on it.

Ploughing

The right conditions to plough are often difficult to capture when doing big areas. A light discing is all that is required eg, disc harrows, in order to get a weed kill on the surface. It is often difficult to plough without first heavily grazing to remove the bulk of the vegetative material. This would be preferential to burning off to achieve trash removal. It is preferable to incorporate as much vegetative material when ploughing to improve soil structure, water holding capacity and to mulch the surface. Increased organic matter is likely to improve seedling establishment. Dry ploughing is almost impossible on the black clays.

Most of the previously mentioned grasses prefer to have a bare weed-free area surrounding the established plant to give the best possible spread. This allows runners to move in all directions unhindered, and it allows direct ground contact for roots being produced at runner nodes.

It must be remembered that once ploughed, the black cracking clays are difficult to work on after
rain and if frequent rain occurs, then there is the possibility of not being able to get back on the ploughed ground at all, as clay builds up continually on tyres or tracks. Generally tractors will be more useful if they have dual rear tyres for flotation and are not waterfilled. Wider front tyres will also aid flotation. Wheel cages and half tracks are also other options for improving traction without bogging. Track type vehicles usually handle wet ground conditions best. Water on the surface can help with trafficability compared with wet black soil (less sticky to tyres). If clay builds up on tyres, the machine will eventually stall as the clay hits the mudguards.

Seed can be just dropped onto the surface, and some form of covering with a dragged log or pipe, peg toothed harrows, rubber tyred roller, or spiral roller will improve establishment and seedling survival. The ideal weather conditions after sowing for best establishment are cool cloudy weather with frequent light rain. (This is a common commodity in the Top End during monsoonal periods however, most monsoon periods are too late for seed planting as the soils are already too wet for trafficability). The first monsoon burst is often the best chance.

If the soil is bare anyway eg, deeper flooded drainage lines, then seed of Hymenachne can be simply dropped direct on the surface, just before rain. This method has been used successfully on Beatrice Hill Farm for Hymenachne establishment.

**Herbicide Treatment**

An alternative method is to use a herbicide spray such as glyphosate or grammoxone/reglone (Sprayseed®) to kill off the vegetation without the need for ploughing in conjunction with minimum tillage planting or surface sowing.

This method has been used successfully with Glenn or Lee Joint vetch and Kazungula setaria.

The dead vegetation provides a good mulch for the soil surface and providing the seeds can get in contact with damp soil or organic matter, they are more likely to survive dry spells than those planted in ploughed ground.

Other seeded pasture species which establish on the less flooded black cracking clays are the legumes, Bundey centro, Cavalcade centro, Milgara Blue pea and grasses are Kazungula setaria, Purple Pigeon grass and Tully. Phasey bean will also appear often however it’s seed has not been commercially available for some time.

With the exception of Phasey bean, the above varieties do better on the drier areas of floodplains where there is only very shallow flooding for short periods after heavy rain. Pangola grass also does well under these conditions.

Implement which can be used are combines with pasture seed boxes, drum roller seeders or fertiliser broadcasters. There are small spinner broadcasters which can be attached to 4 wheel motorbikes for small areas. Aerial broadcasting is also an alternative when ground conditions preclude vehicular traffic.

**Vegetative Establishment**

There are many and varied methods for establishing the vegetative types, which include the native hymenachne, Aleman grass, Para grass, Tully and Pangola. Again best establishment occurs if planting is done in cloudy humid conditions, into moist soil, muddy conditions, or with a shallow coverage of water.

**Time of Planting**

Planting of runners can be carried out during most of the wet season except during a flood on both rising (early wet) and receding (late wet) water. If planting on receding water there is not a long interval of growth. No grazing during the following dry is then critical for plant survival.

**Spread and disc-in method**

The runners are spread onto a ploughed surface and disced-in using disc harrows. The offset where adjustable can be reduced to better bury the runners, to put them in contact with damp soil.

The limitation with this method is that it must be done before the plains become too wet, as the clay adheres strongly to discs and tyres when moisture levels get high. The discs eventually clog up completely and won’t plough. Disc scrapers are a necessity. During this period rain and weather conditions may not be the most conducive to good establishment. Good stands however have been produced by this method. Some dead grass (mulch) cover will aid with traction on wet soils.

This method is suitable for para, Tully and Pangola.

**Machine Planting**

(a) All Terrain Vehicles – 4 wheel-drive, motor bikes and Track –type swamp buggies can be used to run over the runners, to bury them partially into the mud. Top End black cracking clays tend to be a bit more trafficable when there
is a sheet of water over the soil surface. When some surface water is present, runner establishment is usually enhanced.

This method is suitable for all the above grasses, with the depth of water determining the most suitable species.

b.) Furrow planting – many machines have been designed with a rack to hold runners, have one or more seated people planting direct behind a single disc or plough tyne, with other single discs or tynes further behind to cover the runners with soil. This method works effectively and is limited only by the traction and power of the towing tractor and planting conditions.

4 wheel drives, dual wheels, wide tracks, half tracks or wheel cages can be used to improve traction. These can be used on unploughed ground but any grass competition surrounding the planted runners will limit spread in the first year. Ploughing or spraying will reduce competition and enhance establishment.

Single disc planters are very efficient machines for runner grasses, and have been designed to suit 4WD, motorbikes or tractors.

**Herbicide vs Ploughing**

Because of the poor trafficability of ploughed ground when wet, there can be advantages in herbicide spraying before planting runners.

Spraying can cover the required area in a much shorter time, which offsets the cost of the herbicide and is less likely to be interrupted by bogging problems.

A method developed at Beatrice Hill Farm has shown that Para grass and Aleman grass runners are resistant to Diuron ® herbicide at rates of up to 10 kg per hectare. Best establishment is between 2 to 4 kg per ha applications of wettable powder. Diuron at these levels inhibits germination of all the annual grasses as well as killing most of the grasses and weeds already established. Some strong perennial grasses may be resistant eg, blady grass. One application of diuron will control seedling growth for the full season. An earlier application of glyphosate can solve that resistant perennial grass problem.

This method allows runners the maximum area for spread in the first season, over bare soil.

When runners are placed on a square grid at 3 to 4 metre intervals, a fully covered sward will be achieved within 1 to 2 seasons. 1 week’s lead time between spraying of Diuron and planting para runners, should be allowed, and the vegetation growth is more easily controlled earlier in the season.

**Low Cost Strategies**

Pasture establishment is always a trade off between the density of planting and the cost and speed of coverage. To establish a pasture quickly, it generally requires heavy seeding rates or close planting of runners.

If there are paddocks which can be allowed a longer establishment time before needed for grazing, there are methods which can be used to reduce the overall labour costs of planting runners. This relies on the plant’s rapid spreading ability when there is no competition in the soil next to an existing plant.

Single runners are capable of growing up to 4-5 metres in one wet season over bare ground. If a single row can be planted in one year and not grazed, then ploughing or spraying next to this row early in the following season will enhance spread during that next year. The distance between the rows in the first year will be determined by the time available before the paddock needs to be grazed. 10 metres could be the minimum distance between rows if the aim is to reduce establishment costs. 50 to 100 metres between rows would be considered for establishment at low cost over a very large area.

The main labour component is in collection and distribution of plant runners, and the fewer required to plant a given area, the lower the final per hectare cost. As a comparison the amount of runners required to cover 1 hectare at 2 metre spacings is 20 times that required to plant at 20 metre row spacings with 4 metres between each runner. Reducing the amount of planting time per established hectare is likely to gain good acceptance from station staff as cutting, transporting and dropping runners can become tedious very quickly. On the other hand however, every spare hour can be gainfully employed in the wet season just by collecting a bag full of runners and planting them in a new area.

These methods of expanding out from strips each season do not preclude grazing once the initial strips are well established. Some nitrogen fertiliser in the first season will encourage plants and runners to thicken up and grow more vigorously.

**Fertiliser**

Early trial work on Para grass gave indications that there is no measured response to applied phosphorus on the black cracking
Establishment is usually satisfactory without fertilisers being applied however the application of a high nitrogen NPK mixture or urea may boost performance and dry matter accumulation significantly, particularly in the first season. There also may be a response to an application of zinc (zinc deficiencies were found in rice crops). However this has not been tested on Para or any of the other common floodplain grasses, as productivity does not appear to be limiting. (On the solodic soils, fertiliser will be necessary as P is low).

Ponding

Ponding is a technique whereby contour banks are constructed with the aim of trapping run-off or incident rain behind the bank to a depth of 300-1000 mm. The extra depth of water and the longer period of time water is available, due to ponding, enhances green pasture availability for stock over the dry.

NB. Ponding banks should be designed so that fish migration is not impeded. Spillways can be designed to allow fish to enter and leave during the wet season. Shallower banks are likely to be less disruptive to natural ecosystems. Natural coastal and tidal saltwater or brackish swamps should not be disturbed as these provide nursery areas for small fish at critical times of the year.

Ponding can benefit some of the species listed above eg, Para, Aleman and the Hymenachne. It’s effect is to reduce the loss of water through run-off and thereby extend the period that the grass remains green, (months extra), or transform areas not previously suitable so that they favour the growth of the above water loving species eg, the drier plains of the Adelaide River system. Planning is required to suit the species preferred. Eg, Para will not tolerate as deep a flooding as the Hymenachne. Aleman will tolerate a wider range of flooding than Para. If using Para seed, some areas will benefit if the banks are put in post planting, to allow seedlings to gain sufficient height before inundation and to make seed bed preparation less prone to weather flooding problems.

Pests and Diseases

Magpie geese can be a nuisance after planting by eating and pulling out freshly established runners, particularly if planting occurs before flooding.

The floodplain rat (Rattus colletti) has been known to extensively graze the green shoots and crowns of para grass in the dry season and in poor wet seasons. Good establishment relies on strong first season growth.

Some leaf spots (Tar Spot) caused by Phyllochora sp. are regularly seen on native hymenachne but production does not appear to be affected.

BARRY LEMCKE
Livestock Management Officer
DPIFM Darwin

Remote Management Field Day
19 to 20 October 2007

Tilmouth Well and Napperby Station

The Desert Knowledge CRC's 21st Century Pastoralism: Utilising Technology project aims to develop and test remote monitoring and management technology for the desert cattle industry.

One kind of remote management technology is telemetry-monitoring and controlling remote equipment with wireless signals. Our project is testing commercially-available telemetry systems on outback cattle properties for two years to assess their reliability and cost-effectiveness. The main financial benefit from telemetry is a reduction in the number of times bores and other remote equipment must be visited. This leads to big savings in time and money.

The project is also developing new technologies for remote cattle management, and to increase the capabilities of existing telemetry systems. We have been field-testing a cattle Walk-over-Weighing system at Napperby for six months and have just installed an automatic, remote cattle drafting system. We are also installing a wireless video monitoring system. These technologies will enable the pastoral manager to accurately record daily animal weight changes, draft selected animals and observe their condition and behaviour without leaving the homestead.

Tilmouth Well is an award-winning roadhouse just a couple of kilometres from Napperby Station's technology trials.
The Field Day

Attractions include:

- A large and comprehensive telemetry network
- A beef cattle Walk-over-Weighing field test
- A new remote, automatic cattle drafter
- A live, wireless video monitoring display
- A range of interesting presentations
- Industry and product exhibitions
- Social and networking opportunities

Presentations have not been finalised but should include:

- Experiences with telemetry in desert cattle production Paul Jonas
- Precision stock management Tony Thompson
- Observant telemetry Matthew Pryor
- Remote management on Napperby station Roy Chisholm
- Wireless video monitoring Mehran Abolhasan
- 21st Century Pastoralism Mark Ashley
- Calculating carrying capacity Alison Kain
- Automatic weighing and drafting Adrian James & Tim Driver
- The Watersmart pastoral production project Colleen James
- Economics of telemetry (Economist presenter TBA)

Dates and Times:
Starting 9:00am Friday 19 October for morning tea
Social program begins 6:00pm Friday 19 October
Field day ends on the morning of Saturday 20 October

Tilmouth Well Roadhouse. On the Tanami road 190km northwest of Alice Springs. Travel north from Alice on the Stuart highway then turn left onto the Tanami road. Continue straight to Tilmouth Well Roadhouse. All sealed except for last 6km, but the Tanami road is mostly single lane.

If flying in to Alice you may have to rent a vehicle. Contact Adrian for car-pooling. Some car hire companies can supply swags with vehicles but numbers are limited so book in advance.

Thrifty 08 8952 9999
Budget 08 8952 8899
Avis 08 8953 5533
Hertz 1300 132 105
Alice Camp’N’Drive 08 8952 0099

On Friday 19 free morning tea, lunch and dinner is provided. For those staying overnight, a breakfast will be available early on Saturday morning.

Some beverages will be provided, others will need to be purchased from the roadhouse shop and/or bar.

To ensure adequate catering, please RSVP by Friday 5 October.

The camping area has plenty of space for swags as well as good showers and toilets. The roadhouse has a swimming pool.

A few air-conditioned cabins are available for booking through Adrian but are in great demand.

If you are flying in you may need to hire a swag. These are available from Central Rentals (ph 08 8952 8077) in Alice Springs but please book well in advance.

There is no fee for camping during the field day.

Country & Western singer Harmony James will perform during the evening.

Lock Up Your Moggies

While the Australian horse industry was in the grips of an Equine Influenza outbreak, the meat industry in the Northern Territory was having kittens over a recent article that appeared in a Northern Territory newspaper.

Alice Spring’s children’s author, Kaye Kessing entered her sautéed cat recipe as a part of the Wild Foods Recipe Challenge which was a part of the Alice Desert Festival.
The news item was catapulted to page 3 of the NT News. Emails were sent to Rod Gobbey (Executive Director Primary Industries) requesting an explanation as to why permission had been granted by DPIFM to allow for the human consumption of cat flesh. Rod did not pussyfoot around and quickly gave assurance that DPIFM had not authorized the use of cat flesh for human consumption.

Xavier Schobben, director of environmental health, said although it wasn’t illegal to cook your own feral cats, it was against the law to sell them for human consumption. Even when thoroughly cooked, cat meat could still contain dangerous toxins and advised against the whole idea.

A catcall went out locally and internationally as the article drew adverse comments from cat lovers and criticism from as far as Phoenix, Arizona, where it was raining cats and dogs with comments over the feral cat concoction on an internet TV and radio station.

The news item had a cat-astrophic effect within the meat industry and conjured up a whole new meaning to the term Multi Species Abattoir.

Robert James McFarlane
Senior Meat Industries Officer
DPIFM

Random Science Trivia

The following items of interest were found in “Random Science Trivia” by Workman Publishing.

The first gambling machine to catch on was a vending machine for chewing gum introduced by the Mills Novelty Company in 1910. It dispensed three flavours of gum – cherry, orange and plum – depending on which fruits appeared on three randomly spinning wheels. If three bars reading “1910 Fruit Gum” appeared in a row, the machine gave extra gum; if a lemon appeared, it gave no gum at all (which is why “lemon” came to mean something unsatisfactory or defective). You can’t get gum to mean something unsatisfactory anymore – the 1910 Fruit Gum machines were so popular that the company converted them to cash payouts.

If you could tap the energy released by an average sized hurricane, it would be enough to satisfy all US energy needs for six months.

In any given year, about 26,000 meteorites land on the earth’s surface, the vast majority dropping into the oceans. Only seven people in recorded history have been hit by one.

When glass breaks, the cracks travel faster than 3,000 mph.

Sound travels through steel 15 times faster than it travels through air.
Attachment A
NT Brands Register - Update your Contact details
Registered Owner/s of Brand (as stated on Three-letter Brand Certificate) to complete please:

Three-letter Brand: _______________________ Earmark: ________________________________

Distinctive (symbol) Brand/s: _____________________________________________________________

Brand Registered for Use on (Run/Property where brand used):

___________________________________________________________________________________
___________________________________________________________________________________
___________________________________________________________________________________

Registered Owner/s of Brand (Individuals): _______________________________________________

OR Registered Owner/s of Brand (Company / Business Name): _________________________________

___________________________________________________________________________________

ACN or ABN: _________________________________________________________________________

Director/s __________________________________________________________________________

Registered Owner of Brand - Current Postal
Address: ____________________________________________________________________________

___________________________________________________________________________________

State: __________________________________ Post Code ___________________________________

Telephone: _____________________________ Fax: ________________________________________

Mobile:_________________________________ E-mail: ______________________________________

Comments: __________________________________________________________________________

___________________________________________________________________________________
___________________________________________________________________________________
___________________________________________________________________________________

___________________________________________________________________________________

Darwin Region
Ian Doddrell, RSI
Ph: 08 8999 2030
Fax: 08 8999 2146

Katherine Region
Greg Scott, RSI
Ph: 08 8973 9765
Fax: 08 8973 9759

Tennant Creek Region
Ted Martin, RSI
Ph: 08 8962 4490
Fax: 08 8962 4480

Alice Springs Region
Greg Crawford, RAHO
Ph: 08 8951 8125
Fax: 08 8951 8112
## Table 1. NIRS yearly averages and cattle live weight gain

<table>
<thead>
<tr>
<th>Paddock</th>
<th>Pasture type</th>
<th>CP (%)</th>
<th>Digest %</th>
<th>Grass %</th>
<th>Av. weight gain kg/h/y</th>
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<tr>
<td>39</td>
<td>Buffel &amp; leucaena</td>
<td>11</td>
<td>63</td>
<td>18.0</td>
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<td>42</td>
<td>Jarra &amp; Wynn</td>
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<td>45</td>
<td>Pangola &amp; leucaena</td>
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<td>64</td>
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<td>7.2</td>
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<td>9.0</td>
<td>231.0</td>
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<td>Buffel &amp; Ooloo</td>
<td>12</td>
<td>63</td>
<td>21.0</td>
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Attachment C  
Table 2 – Live Weight Gains

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<th>Paddock No.</th>
<th>Pasture type</th>
<th>July - Nov 05 (Mid-Late Dry) kg</th>
<th>Nov - April 06 (Wet season) kg</th>
<th>April- June 06 (Early dry) kg</th>
<th>Total kg</th>
<th>Total kg</th>
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<td>39</td>
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<td>+43</td>
<td>+234</td>
<td>+292</td>
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<td>+37</td>
<td>+165</td>
<td>+45</td>
<td>+246</td>
<td>+308</td>
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<tr>
<td>48</td>
<td>Sabi/Wynn/Leucaena</td>
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<td>+151</td>
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<td>+229</td>
<td>+286</td>
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<td>Strickland/Wynn</td>
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<td>+144</td>
<td>+44</td>
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</tr>
</tbody>
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Primary Industry Home

Primary Industries

The Primary Industries group delivers strategic services that support profitable and sustainable primary production.

It works in partnership with producers, industry bodies, community groups and related agencies to promote industry growth and ensure access to markets for animals, plants, and animal and plant products.

The main services are:

- inspection, treatment and certification services for animals and animal products;
- inspection, treatment and certification for plant and plant products;
- research and extension programs to help producers sustainably lift crop and stock yields and capacity;
- development of best-practice farming methods and new crop for specific environments;
- Indigenous pastoral and horticultural development;
- biosecurity and laboratory services for plant and animal health; and
- monitoring of, and response to, emergency and endemic animal and plant pests and diseases.
**Notices:**

**Mango Malformation Disease**
Mango Malformation Disease (MMD) is a fungal disease of mangoes caused by several species of Fusarium, some yet to be described. Mango is the only known host of the disease.

**Spiraling Whitefly**
The spiraling whitefly is native of the Caribbean Region and Central America where it is not regarded as a pest because it is kept under control by a number of native predatory insects and tiny parasitic wasps.

**Equine Influenza**
Detailed Horse Movement Requirements for each state.

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**Technical Annual Report 2006-07**
(Free Download 1.97MB PDF)

This Technical Annual Report (TAR) provides a summary of the work conducted during the 2006-07 financial year, together with results where possible, and general recommendations.

**Grazing Strategies for Tomorrow 2007**
(Free Download, 2.6MB PDF)

The latest Pigeon Hole Field Day handbook, with results and management recommendations from the Pigeon Hole Project grazing trial. Contains excellent information for all pastoralists.