northern **muster**

Information for rural business in north Queensland

Producing healthy food and quality fibre for a healthy bottom line

in this edition

editorial

Welcome to the Summer 2003 edition of the Northern Muster. We hope many of you have had a season break or storms by the time this edition is being read. However, we are also mindful that some may not have had the break yet.

In this Issue, we cover on-going drought, woody weed management, drought recovery when it rains, Phosphorous supplementing in the wet season and next years weaners. We are well into the bull-selling season. We have included information on bull genetics.

The content also includes computer topics, climate outlook and animal health.

Please fill out the Feedback sheet and fax or free post back to us.

Valuable information sources:

DPI Website (www.dpi.qld.gov.au)
DPI Call Centre: 13 25 23 (8am to 6pm weekdays)
DPI Drought Hotline: 1800 825 656
Your local extension staff.

We thank all contributors and advertisers for their contribution.

Enjoy the newsletter.

Alan Laing
Editor.

issue 3 **summer 2003**

Queensland Government
Department of Primary Industries

Bull selection – are you making the right decisions?

Research shows that if you do not use sound scientific bull selection information, then for every eight bulls you buy, only one will sire the majority of your calves. Are you buying the bull that will sire your herd or one of the eight that won't?

Correct bull selection is vital as the decisions you make now will affect your herd's ability to meet market specifications for the next 10 years.

Come to a '*Better business, better profits through better bulls*' workshop and find out how to:

- select bulls that are able to sire more calves
- select bulls that have the genetic make-up to meet market requirements
- interpret a veterinary breeding soundness certificate
- interpret genetic and objective information that accompanies sale bulls
- use bull selection to better meet your business objectives
- recognise the factors important to setting breeding objectives.

Contact
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Facsimilie: 07 4783 3193
Email: alan.laing@dpi.qld.gov.au

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Extension Officer
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Vibriosis
"The quiet profit taker"

Vibriosis in cattle

Vibriosis has been called "The quiet profit taker". It is a disease that can significantly reduce herd fertility and reproductive performance without distinctive or obvious signs.

Vibriosis is a venereal disease of cattle caused by a bacterial infection with Campylobacter fetus subspecies venerealis. It is widespread throughout Australian cattle herds and is a major cause of infertility and sporadic abortion. Vibriosis is unlike other more noticeable diseases like botulism where dead animals can be counted and valued. Vibriosis is the quiet profit taker - reducing calvings and increasing the number of unproductive cattle on the property with few, if any, visible signs.

Infection

Vibriosis is spread at joining either from an infected bull to an uninfected cow or vice versa. Infected bulls can be carriers for many years and are therefore the main source of infection in a herd.

Clinical Signs

Low pregnancy rates and therefore low branding rates are usually the initial indication of Vibrio Infection in the herd. Vibrosis most commonly causes an increased number of cattle returning to service. Sporadic abortions in mid to late pregnancy may also be noticed. Infected herds often have conception rates reduced to levels below 50%[1]. Vibrio infection results in reproductive damage and can cause permanent infertility in up to 11% of heifers[2]. Infected bulls show no obvious signs but can act as long term carriers, infecting cows and heifers at service.

The most important cattle in a herd are usually the replacement heifers and the bulls - they are the future of the herd. The cattle most at risk from Vibriosis are the young female cattle. This is because heifers are less likely to have developed an immune response to Vibriosis than older females in the herd. While the reproductive losses are a result of the cow not delivering a calf, it is the bull that spreads the disease from one cow to another and therefore it is critical that all bulls and young female breeding cattle are vaccinated to prevent the losses associated with Vibriosis.

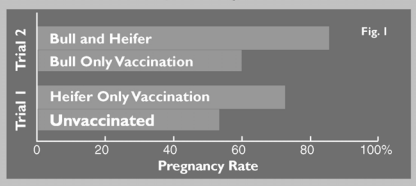
Treatment and prevention

Treatment programs should be discussed with your veterinarian. The program for bulls may include an antibiotic treatment, while the vaccination of all breeding animals; bulls, cows and heifers, with Vibrovax™, will help reduce the incidence of infection and reproductive losses caused by Vibriosis.

Vaccination with Vibrovax™ is the best way to prevent vibriosis in cattle. Unless the entire herd is infected and suffering significant reproductive losses from Vibrio, it is usually unnecessary to vaccinate the older cows after the first year, but heifers and bulls should be vaccinated every year.

A trial conducted in an infected North Queensland beef herd (Fig. 1) showed that vaccination of heifers resulted in a pregnancy rate of 76%, versus 55% in unvaccinated heifers[3].

A further trial comparing the vaccination of bulls only with the vaccination of both bulls and heifers demonstrated a pregnancy rate of 61% and 85% respectively[4].

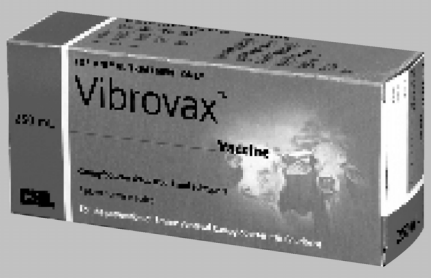


	All vaccinations should occur at least 4 weeks before joining	
	First Year	Annual Booster
Bulls	2 doses (5mL) 4-6 weeks apart	1 dose (5mL) prior to joining
Cows (18+ months)	1 dose (5mL) prior to joining	1 dose (2mL) prior to joining*
Cows (<18 months)	2 doses (5mL) 4-6 weeks apart	1 dose (2mL) prior to joining*

* An alternative to this is a single 5mL dose every two years

Vibrovax™ is a unique vaccine

- A single dose given to cows over 18 months will confer protection against Vibriosis.
- On-going vaccination of female cattle can be annually or every two years.
- Oil based adjuvant helps to provide maximum level of protection.



CSL animal health

References:
1. Hum S, & Worsley A, (1994) *NSW Agriculture - Agfact A2.9.7,* 1st Ed 2. McCool CJ, Townsend MP, Wolfe SG, Simpson MA, Olm TC, Jayawardhana GA, Carney JV, (1988), *Australian Veterinary Journal,* 65: 153 3. Allan PJ, Mutch CB, (1971), *Australian Veterinary Journal,* 47: 184 4. Allan PJ, (1972), *Australian Veterinary Journal,* 48:72

CSL Limited, ABN 99 051 588 348, 45 Poplar Road Parkville, Victoria 3052 Australia. Phone: 61 3 9389 1610
Fax: 61 3 9389 1646 Freecall: 1800 333 011 www.cslanimalhealth.com.au CSB0007/1002/The Hopkins Part.

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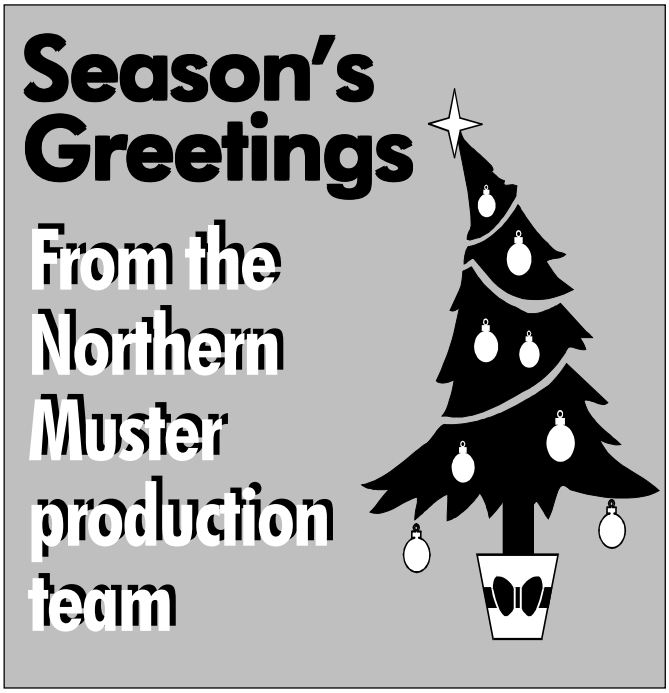
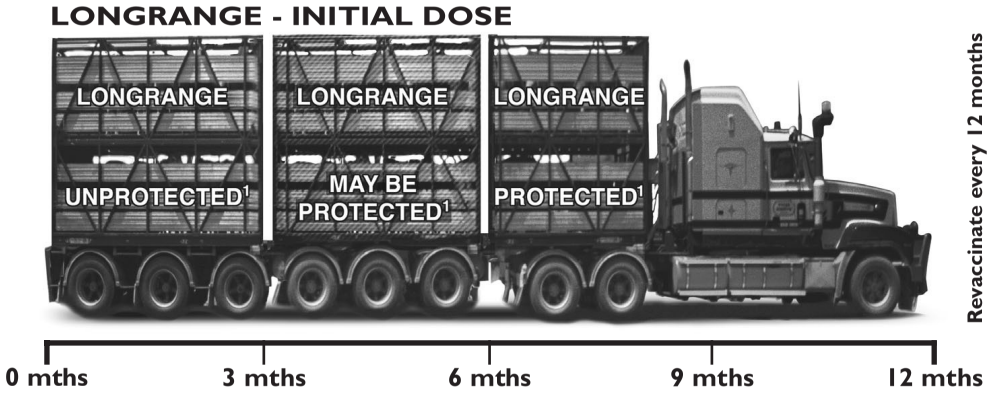
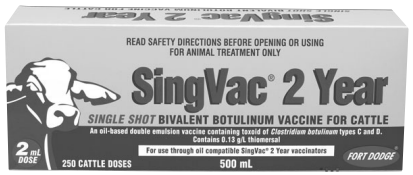


BOTULISM. LONGRANGE™ OR SINGVAC® 2 YEAR. WHICH VACCINE PROTECTS THE LONGEST?[2]





- ✔ 2 YEARS' PROTECTION FROM BOTULISM WITH A SINGLE VACCINATION
- ✔ IMMUNITY DEVELOPS WITHIN 35 DAYS OF VACCINATION
- ✔ PROTECTION AGAINST SUB-LETHAL EFFECTS OF BOTULISM[4]
- ✔ LOW VOLUME 2 mL DOSE

FORT DODGE®

FORT DODGE AUSTRALIA PTY LTD. 1 MAITLAND PLACE, BAULKHAM HILLS, NSW 2153. ABN 64 000 074 902. TELEPHONE: (02) 9899 0444. FACSIMILE: (02) 9899 2151. TOLL FREE: 1800 257 178.

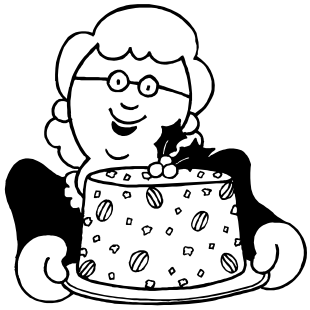
1. A single dose of this vaccine will give protection on average within 3-6 months of initial dose and should confer protection for 12 months. 2. A comparison of the label claims after initial dose. See label for full details. 3. Immunity develops within 35 days of vaccination. 4. Data on file.

'tis the season to be jolly

Champagne Cooler Cocktail
1 Oz. brandy
1 Oz. Triple Sec
Champagne

Method
Pour brandy and Triple Sec into champagne glass half filled with cracked ice. Fill with chilled Champagne. Stir gently.

Rum Balls
Ingredients
8 Vita Brits
½ cup chopped raisins
2 tabs. cocoa
½ cup coconut
extra coconut
1 tin Nestle's milk
3-4 tabs. Rum



Method
Crush Vita Brits, add coconut, chopped raisins, coca and mix well. Pour in condensed milk and mix well. Lastly add the rum, mixing thoroughly. Roll into small balls and roll in coconut. Freeze for at least 24 hours

Christmas Eve
Santa was very cross. It was Christmas Eve and NOTHING was going right. Mrs. Claus had burned all the cookies. The elves were complaining about not getting paid for the overtime they had while making toys. The reindeers had been drinking all afternoon and were dead drunk. To make matters worse, they had taken the sleigh out for a spin earlier in the day and had crashed it into a tree. Santa was furious. "I can't believe it! I've got to deliver millions of presents all over the world in just a few hours; all of my reindeers are drunk; the elves are on strike; and I don't even have a Christmas tree! I sent that stupid little angel out HOURS ago to find a tree; and he isn't even back yet! What am I going to do?"

Just then, the little angel opened the front door and stepped in, from the snowy night, dragging a Christmas tree. He says, "Yo, fat man! Where do you want me to stick the tree this year?"

And, thus, the tradition of an angel a top the Christmas trees came to pass.

Recipe for Friendship
Take a heap of joy, blend well with trust,
Add a measure of dreams to share;
And minds more than willing to understand
And hearts more than ready to care,
Fold in a generous fluff of forgiving nature
Kindly word and thoughtful deed,
Then a pinch of humour and a dash of spice
Whipped in with loving speed.

Drought declared - who does it?

DROUGHTS are caused by a lack of effective rainfall and can be difficult to define. The Queensland Government recognises droughts as prolonged and severe events occurring when extreme lack of rain over the previous 12 months is beyond the ability of producers to manage. These extreme events are defined as occurring when rainfall is within a 1 in 10 to 15 year deficiency.

The Queensland Government through the Department of Primary Industries administers the Drought Relief Assistance Scheme (DRAS).

The overall scheme objective may be defined as 'to maintain as far as possible the sustainable livestock resource of property during drought, and to assist in the return and restoration of that resource when the drought breaks'. Factors including minimising stock distress and maintenance of land resources are also taken into account.

Stock Inspectors administer the DRAS scheme in the field and are the initial contact for primary producers to make application for an Individual Droughted Property (IDP) declaration. Stock Inspectors also administer and co-ordinator Local Drought Committees (LDC).

LDC's were established to assist Stock Inspectors with IDP assessments and make recommendations to the Minister for Primary Industries on shire declarations and revocations. They also mediate and make recommendations relating to the payment of freight subsidies. LDC's are based on Stock Inspectors district or sub-district and are comprised of representatives from the various industry organisations in that district together with relevant DPI industry experts.

As co-ordinator, the Stock Inspector must ensure a good working relationship between members and makes sure that the declaration and revocation processes are conducted in a professional manner. Producer applications mainly include beef cattle and dairy cattle but can include intensive livestock (pigs and poultry) horticultural enterprises and even aquaculture.

The Stock Inspector often becomes the 'first port of call' for primary producers who are affected by drought and are able to provide a wide range of services and information. This can include advice on topics such as animal health and welfare or accessing the latest financial assistance available through the DPI and other Government agencies.

Ted Vinson
Senior Inspector
DPI, Charters Towers
Phone 07 4754 6104

Progress report on the Gulf Fire project

Background

MANY LANDTYPES in the Gulf region have experienced significant increases in woody vegetation in recent decades. This thickening in the cover of trees and shrubs (such as eucalypts, wattles, gutta percha, yellow wood and breadfruit) has reduced pasture production and made cattle management more difficult. It is estimated that at least 60% of the north has thickened to the extent where it has reduced carrying capacity. These changes have probably resulted from a combination of the effects of grazing and changes in fire regimes.

The reduction in effective carrying capacity due to thickening has implications for both property viability and land condition. Attempts to maintain stock numbers with a reduction in carrying capacity risks a decline in land condition and potential land degradation. It has been established that the strategic use of fire has the potential to reduce woody vegetation cover and help restore pasture production.

The Gulf Fire project is being conducted under the umbrella of Tropical Savannas' Management CRC and is a collaborative effort between the DPI, CSIRO, Meat and Livestock Australia, the Northern Gulf Resource Management Group, Rural Fires and landholders.

The project is developing and testing recommendations for the use of fire for the management of woody vegetation in the gulf savannas.

Three regions are involved in the Gulf fire project, Georgetown, Croydon and Normanton. Each region has a core site, where CSIRO staff are taking detailed measurements, and a number of satellite sites that are being less intensively monitored. Hot, late dry season fires are targeting key woody species identified by the steering group. These include breadfruit (*Gardenia vilhelmii*), gutta percha (*Excoecaria parvifolia*), yellow-woods (*Terminalia* spp.), eucalypts and acacias.

Grazing management is an integral component of the project. Light grazing and/or spelling is being used both before the fires to build up fuel loads and after the fires to enhance the recovery of preferred pasture species.

The three core sites involved in the project are Abingdon Downs (Georgetown), Oakland Park (Croydon) and Woodview (Normanton).

Results of trials

The ***Abingdon Downs*** site is a holding paddock adjacent to the homestead. The paddock had been heavily grazed in the past and had thickened with a range of trees and shrubs including breadfruit. Hyptis had also aggressively invaded the paddock and was out-competing the native grasses.

The paddock was spelled for two years and built up a very large fuel load of 4,860 kg/ha. Much of the fuel was hyptis and leaf litter. The site was burnt late on the morning of January 7, 2003.

The resulting hot fire caused few tree deaths but has opened up the paddock. Plant measurements of breadfruit taken prior to the fire showed that 90% of plants were greater than 50cm in height while after the fire the figure was less than 15%. This indicates the loss of the top growth of trees and shrubs but there was subsequent shooting from the base after the fire. While this would typically allow the establishment of pasture grasses, the poor wet season rains experienced at Abingdon have resulted in little pasture growth. This would suggest that burning should be carried out in years with a positive SOI indicating average to above average rainfall.

The Abingdon site is currently being spelled and will require a subsequent fire in the future.

The ***Oakland Park*** site is again in a holding paddock near the homestead. The paddock had been spelled and built up just over 2,000 kg/ha of fuel. Thickening was serious with a number of woody species including tea-tree, breadfruit and wattles. The paddock was burnt in the early afternoon of 29 December 2002. Maximum temperature on the day was 38°C and there were strong winds during the latter part of the fire.

Transect measurements taken after the fire indicated death rates of breadfruit at 3%. But as experienced at Abingdon the percentage of breadfruit trees greater than 50 cm was 98% prior to the fire and 35% after the fire. So again while there were few deaths, the paddock was opened up by the removal of much of the top growth of the woody species.

The decision was made to spell the paddock again after the fire. Unlike Abingdon there was a pasture response although growth was patchy with dry matter yields ranging from 600-1200 kg/ha.

The site was burnt for a second time on 29 October 2003 during a week of extreme temperatures. The fire was lit at 9.30 am with back burning on the down wind side. Temperature was 34C rising through to 39C by midday. Conditions were initially humid with a light breeze.

The fire was disappointing with only small areas burning successfully. The wind remained very light throughout the morning and the humidity also appeared to play a role in reducing the effectiveness of the fire. The owner tried lighting more areas later in the afternoon but again the result was patchy.

The failure of the burn despite the extreme temperatures was attributed to a low fuel load, discontinuous fuel and light winds.

The third core site is on ***Woodview*** near the turn-off to Normanton on the Gulf development road. The site is on clay plains invaded by Gutta-percha, virtually all of which was greater than 50 cm high prior to burning. The area had been lightly grazed the previous year and had a fuel load of just over 1000 kg /ha.

The site was burnt in the mid afternoon of December 9, 2002. While it was 36°C on the day of the fire the owners regretted that they were not in a position to take

advantage of extremely hot weather a few days earlier that would have resulted in a much hotter fire. Heavy rains fell the day after the fire.

Despite both the fuel load and the fire being less than optimal the fire top-killed one third of the gutta-percha. This result was encouraging but again a follow-up fire will be needed. As with the other sites a key component of the fire strategy is grazing management that encourages pasture growth of preferred species and allows fuel build up.

Satellite sites

A number of satellite sites have been identified where a range of fire treatments will be evaluated but not measured as intensively as the core sites.

At ***Foresthome*** the site was previously burnt two years ago with a very hot fire that had seriously impacted on the breadfruit and yellow-wood thickening. There appeared to have been some initial death of both species from the fire, but most plants were re-shooting.

The paddock had been lightly grazed during the previous 12 months. Fuel load was variable ranging from 600-1600 kg/ha. The paddock was burnt at 1.30 pm on 29 October 2003 with a steady breeze and a temperature of 40°C. The fire was very successful engulfing the whole paddock, even the ends with low fuel loads. Monitoring will be carried out to determine if the second fire has killed the thickening breadfruit and yellow-wood species.

At ***Blanncourt*** the site was relatively open with some thickening of Cooktown ironwood, yellow-wood and breadfruit. The fuel load was light and discontinuous throughout the paddock ranging from 500-700kg/ha. Much of the fuel was leaf litter. The site was burnt at 11.30 am on 30 October 2003 and despite temperatures of 40°C the burn was poor. The disappointing fire was attributed to the light winds and inadequate fuel loads.

Prestwood was burnt the same afternoon as Blanncourt. The site was moderately thickened with breadfruit, yellow-wood and some wattles. Despite the site being spelled for 12 months fuel loads were still sub-optimal due to the dry seasonal conditions. The result of the fire was the same as at Blanncourt with some small areas of thicker vegetation burnt well but most areas failing to carry an effective fire. Again the lack of wind, low fuel loads and discontinuous fuel were the limiting factors.

Satellite fire sites have been identified at ***Huonfels*** and ***Delta Downs***. Both will be spelled for a burn prior to the 2004/2005 wet season.

Future plans for the fire project

The project team is looking to establish several more satellite sites and would like to hear from any graziers wanting to be involved. While the current drought conditions limited opportunities for burning prior to the upcoming wet season, it is hoped that with a good wet season we will have further opportunities the following year.

Trevor Blacklock at Littleton Station has recently observed both breadfruit and quinine killed by fire. He attributes the success to burning while the breadfruit was at the budding stage prior to leaf emergence. He said that the stems had appeared to almost explode at ground level due to the high moisture content in the stems. The project team intends to follow up on this interesting observation in the near future.

Agency staff involved in the project are Tony Grice, Lindsay Whiteman and Mike Nicholas from CSIRO and Jim Kernot and Bernie English from DPI. Contact numbers are CSIRO 4753 8500 and DPI 4048 4600.

Jim Kernot
DPI, Mareeba
Phone 07 4048 4600

Drought recovery planning using Breedcow and Dynama software

ONCE WE GET BACK to a decent season, alternatives for drought recovery and herd rebuilding will be back on the agenda. Issues will include whether to buy back breeders or to breed up, whether to give the country a spell or stock up quickly, and whether or how to get back into the generally more profitable older male turnoff.

For those who work with numbers, the DPI Breedcow and Dynama software can help the recovery planning process. Breedcow and Dynama is actually nine pieces of software (it used to be just the two) which are used to take a systematic look at the future profitability and cash flow of the business for a range of possible plans.

Breedcow and Dynama software, and the "Better Decisions in the Business of Beef" training workshop, approach business analysis on four fronts:

1. Where are we now and where are we going? - Ten year projection of herd structure, cash flow, net income, net worth and return on capital are calculated by the Dynama program, starting from a given herd and financial position. Support progams are TaxInc (converts the Dynama herd plan into livestock trading accounts, and estimates taxable income) and MonthCFl (sets up the first year of Dynama to calculate monthly cash flows). Dynama is the central planning tool to which we return after each excursion into finding a better way, or resolving a crisis.
2. Is there a better way? - Breedcow program (and similar Bcowplus) focuses down to the herd using stable state modelling to calculate herd structure and gross margins for whatever turnoff or husbandry options are to be considered. Once identified, the "better way" is remodelled in Dynama - or at least becomes the target towards which the 10 year plan is working.
3. Change as an investment - InvestAn program compares Dynama scenarios ("do nothing" and "change"), determines year by year cash flow differences for 10 years, and difference in asset value at the end of 10 years. From

these, InvestAn calculates the overall profitability of the change and the rate of return on the outlay required to make the change.

4. When the wheels fall off - Destock program focuses right down on to individual animals or groups of animals and calculates GM per AE and per $ of livestock capital. Intended purpose was to assist destocking decisions in the face of drought (sell those groups with smallest projected GM/AE) or financial crisis (sell those with smallest projected GM per $ livestock capital), but can equally be used to assess out-of-plan purchase decisions.

Breedcow and Dynama software is available for $429 (incl GST); Better Decisions workshops can be organized anywhere there are enough takers (cost $550 less FarmBis support); and the ***Destock*** component of Breedcow and Dynama is currently available ***free of charge*** as a DPI drought assistance measure. To purchase Breedcow and Dynama software, organize a workshop, request a free copy of the Destock program or for further information contact:

Bill Holmes
DPI, Townsville,
Phone 07 4722 2663.

Internet **Bits & Bobs**

Managing fire

IT'S DRY AND HOT, sometimes too hot. Fire is very much a part of our seasonal landscape and an important consideration for land managers. If you would like to identify fire locations, monitor fires and manage for fire, these sites will give you the tools

Fire scars

Track current fire "hot spots" and identify "fire scars" for Northern Australia. Maps are plotted using information collected from satellites and are updated frequently during the day.
http://firenorth.org.au

Zoom in on a fire

The Qld Satellite Fire Monitor is an online fire mapping service for eastern Australia. Go online and zoom in on local fires, detected using NOAA satellite imagery and updated several times a day.
www.longpaddock.qld.gov.au/SatelliteFireMonitor/

View today's hotspots

The Qld Rural Fire Service operates the Rural Fire Brigade, a voluntary organisation established to provide assistance to the local community in rural fire management. Visit their site and view the current Fire "HotSpot" map.
www.ruralfire.qld.gov.au/news/news.htm

Animated fire

The Tropical Savannas CRC sells a CD–ROM on fire management, featuring animations, videos and links to websites. It answers FAQ about fire management, a section on how to use information from satellites, descriptions of fuel load and the effect of different fire patterns on native plant and native animal communities. You can purchase this CD and view other fire information on this JCU website.
http://savanna.ntu.edu.au/research/projects/firsav.html

Kid's fire safety

Visit the kid's pages on the Queensland Fire and Rescue Service website for some fun activities that can help you talk with your children about fire danger.
www.fire.qld.gov.au

Drought management software

Scientists from DPI, often in joint ventures with colleagues from other agencies, have produced a range of software packages to help primary producers develop their own profitable and sustainable enterprise management strategies.

DroughtPlan

www.dpi.qld.gov.au/climate/12801.html
DroughtPlan helps producers develop profitable and sustainable grazing strategies to manage for rainfall variability. DroughtPlan comprises a number of products including BB-Safe, Graze On, Pasture Supply and Demand Evaluator, and the Assessing Your Livestock Management Option.

Australian Rainman 3

www.dpi.qld.gov.au/rainman/
Rainman is a CD-based software package of rainfall information designed to assist in the management of rainfall variability. It contains historical long-term daily and monthly rainfall data for 3700 rainfall locations around Australia. It allows users to calculate chances of monthly and seasonal rain, display historical data as tables or graphs, and use the SOI to forecast seasonal rain, dry periods and effective rain at your location.

Whopper Cropper

www.apsru.gov.au/apsru/Products/Whopper/
Whopper Cropper brings together seasonal outlook information and crop simulation modelling to an understanding of the impact of different crop management practices. The software contains reference to 7 crops over 16 regions stretching from northern NSW to central Queensland. This new version allows users to nominate their own costs and returns to determine gross margins associated with different scenarios.

Breedcow and Dynama

www.dpi.qld.gov.au/breedcowdynama/
The Breedcow and Dynama herd budgeting software package is designed for managers of extensive beef production systems. The package includes a manual, which sets out budgeting techniques.

Aussie GRASS

www.longpaddock.qld.gov.au/AboutUs/ResearchProjects/AussieGRASS/
Building on 50 years of agronomic research, the Aussie GRASS project uses advanced computer simulation techniques and a Cray supercomputer to enable the condition of Queensland's grasslands to be assessed and monitored.

Joann Resing
Rural Information Specialist DPI, Townville
Phone 07 4722 2662

Further reading

Books

Artificial breeding of cattle (1995). D. Boothby and G. Fahey. AGMedia Melbourne. ISBN 0-7306-6427-9. Available from DPI Bookshop, 127 pages, illustrated – $30.95. Describes the reproductive systems of cows and bulls and the mechanics of artificial insemination. Covers all aspects of a successful breeding program, including bull selection, oestrus detection and synchronisation, record keeping, reproductive disorders, avoiding problems and economic factors.

Beef cattle recording and selection (2000). Queensland Beef Industry Institute, Department of Primary Industries, Queensland. ISBN 0-7345-0071-8. Available from DPI Bookshop, 51 page softcover – $17.55. Provides an overview of basic beef cattle genetics and the basic principles of planned breeding and selection in practice. Includes producers' experiences using BREEDPLAN EBVs.

Breeding for profit (1993). J. Bertram, M. Carrick, R. Holroyd, M. Lake, W. Lehman, K. Taylor, R. Thompson, M. Tierney, R. Tyler, M. Sullivan and R. Whittle. Department of Primary Industries, Queensland. ISBN 0-7242-5400-5. Available from DPI Bookshop, 44 page softcover – $17.55. Written for tropical beef producers, this book assists with defining target markets, determining breeding goals to serve those markets and planning breeding programs to meet the breeding goals. Covers achievable gains, performance analysis, breeding methods, and crossbred herd management.

Bull selection (1995). J. Bertram, K. Entwistle, G. Fordyce, R. Holroyd, M. Lake, M. McGowan, J. Shorter, K. Taylor, M. Tierney and R. Whittle. Department of Primary Industries, Queensland. ISBN 0-7242-5435-8. Available from DPI Bookshop, 44 pages softcover – $17.55. Covers a what a bull is worth; basis of genetic selection and herd genetic improvement; selecting for fertility, structural soundness, growth, carcase attributes and temperament; and bull management.

Female selection in beef cattle (2000). G. Fahey, D. Boothby, G. Fordyce and M. Sullivan. Department of Primary Industries, Queensland. ISBN 0-7345-0094-7. Available from DPI Bookshop, 46 pages softcover – $17.55. Practical overview of the principles of female cattle selection and management practices.

Evaluating and reporting bull fertility (2003). K. Entwistle and G. Fordyce. Australian Association of Cattle Veterinarians. ISBN 0-9585654-4-9. Available from AACV (phone Anne Cover on 07 3378 7944) – $55 plus $7 p&h.

Beef cattle performance in northern Australia (2001). Compiled by P. Hasker. QX01002. Available from DPI Bookshop, 377 pages softcover – $95. A summary of recent research in northern Australia.

Bull selection and use in northern Australia (Final Report, Bull Power). Holroyd et al. Available from DPI Rockhampton (phone Dr Dick Holroyd on 07 4936 0334) – $8.50. Results of a major project conducted on three research stations and eight cooperator properties. Over 1000 bulls were subjected to physical and reproductive examinations prior to mating.

Producing and processing quality beef from Australian cattle herds P. Dundon et al. Available from the Beef CRC – $30. Documents industry outcomes from the Beef CRC.

DPI notes

Beef, breeding and genetics: Refer to Department of Primary Industries website – www.dpi.qld.gov.au/beef – or contact your local DPI office.

Web addresses

<http://www.dpi.qld.gov.au>
www.beef.crc.org.au <http://www.beef.crc.org.au>
www.mla.com.au <http://www.mla.com.au>
www.cattlecouncil.com.au <http://www.cattlecouncil.com.au>
www.infarmation.com.au/alfa <http://www.infarmation.com.au/alfa>
www.geneticsolutions.com.au <http://www.geneticsolutions.com.au>
<http://agbu.une.edu.au>
<http://abri.une.edu.au>
www.une.edu.au <http://www.une.edu.au>
http://www.csiro.au
http://www.agric.nsw.gov.au

Weaner feeding

AN IMPORTANT dry season management strategy under drought conditions is to wean calves down to 60-100kg, (on the second round). This can have multiple benefits to your herd.

- Reduce death rates in cow calf units.
- Reduce need for expensive supplements to keep the cow alive.
- Improve chances of the cow going back into calf when it rains and to then calve at the right time of the following year.

Weaning calves under 100kg needs to be done properly or high death rates and or stunted poor performing animals will be the result. Research has shown that the younger the animals are that have a severe nutritional check in their life, the greater will be the impact on their performance later in life (heifers – low fertility and poor growth rates; steers low growth rates).

Ideal growth rates for these young weaners are 0.25 – 0.4 kg a day.

Producers need to plan ahead to wean these young cattle and do a good job, the main issues being.

- Draft weaners into different weight groups so that they can be fed and managed separately
    - o 60 – 100kg
    - o 100 – 120kg
    - o 120 - 150kg

  calves may have to be drafted several times during the weaning process so that the heavier ones are put up into the next weight group.
- Trough space is a critical issue if large numbers are being weaned and fed at the one time.
- Clean water available in easily accessible troughs.
- Poor hygiene and over crowding in yards will result in scours and possible deaths.
- Must feed a balanced ration with adequate energy and protein content.

Recommended rations for weaners are:

60 – 100 kg Feed pellets or meal with at least 18% crude protein and 12 MJ ME/kg (Megajoules of metabolisable energy). These special young calf feeds have rumensin in them which helps prevent scours developing (coccidiosis). Usually at this time of the year paddock feed is low and of poor quality. These young cattle need good quality roughage to aid rumen development which means reasonable quality hay must be fed as well

100 – 120 kg Pellets or ration fed needs to be at least 16% crude protein and 12 MJ ME/kg and a reasonable quality hay or roughage.

120 – 150 kg Feed copra meal or a molasses ration containing

- 3% Urea
- 10% Protein meal
- 1% Salt
- 1% DCP
- Rumensin at recommended rates

The molasses – urea brew must be mixed mechanically. Reasonable roughage or hay must be available.

When the rain starts monitor weaners for possible parasite infestation.

To gain a broader knowledge of weaner nutrition and general herd nutrition consider attending a Northern Nutrition Edge Workshop. At present beef producers will receive a 75% subsidy on the cost of this workshop.

Bernie English, Beef Extension Officer
DPI, Mareeba
Ph: 07 4048 4600

Think about next years weaners now

IN PREPARATION for the new weaners, you need to have a good fresh paddock which means spelling these areas over the wet season. If weaners need to be segregated on weight, several paddocks will be needed.

Correct stocking rate will ensure each weaner can select a reasonable diet which will minimize supplement costs and reduce the need to buy in hay. Weaner stocking rates on native pasture vary from a 150kg weaner per 2-3ha on our basalt-frontage country to a weaner to 10ha in the sandy forest soils.

Regular wet season spelling of weaner paddocks lends itself to planting improved pasture grasses and legumes like Seca, Verano, Urochloa and Indian Couch. These legumes will increase the availability of feed per hectare allowing increased stocking rates as well as improved individual animal performance.

Bernie English, Beef Extension Officer
DPI Mareeba
Ph: 07 4048 4600

Criteria change for Mad Cow tests

QUEENSLAND will update its surveillance program for transmissible spongiform encephalopathies (TSEs) to bring the program into line with new guidelines established by the OIE, the World Organisation for Animal Health.

Department of Primary Industries senior veterinary officer at Biloela Dr Lee Taylor said testing for TSEs included bovine spongiform encephalopathy (BSE) commonly referred to as Mad Cow Disease and a related sheep disease, scrapie.

Dr Taylor said the international code for surveillance for BSE and scrapie had now changed the eligible age for testing cattle for TSE from 24 months to 30 months and older. The age for sheep to be eligible had remained at 18 months or older.

Dr Taylor said that animals eligible for testing included those with obvious nervous signs that were refractory to treatment including "staggers" and stock that fell down leading to an inability to rise ("downers"). Eligibility extended to behavioural changes that included changes in temperament, unusual response to noise and excessive baulking. Sheep showing severe persistent itchiness were also eligible. Animals that simply showed chronic wasting without nervous signs were no longer eligible.

"The targeted annual surveillance numbers have also changed. These are based on State cattle and sheep populations. Queensland's annual cattle sampling target has been lifted from 156 to 171 head but the sheep target has been cut from 40 to 35 head in line with changes in relative cattle and sheep numbers.

"On June 30 this year, Queensland was half way to achieving its annual target but there is no room for complacency if our industries are to meet these quotas," Dr Taylor said.

Dr Taylor stressed that because Australia was free of BSE and scrapie and testing specifically targeted animals with nervous signs, only a relatively small number of animals needed to be sampled to demonstrate the nation's ongoing freedom from these TSEs. This was in line with OIE guidelines, which were based on sound science.

Producers who informed a private or DPI veterinarian or stock inspector of livestock showing the prescribed abnormal signs were eligible to claim compensation of $150 for cattle and $25 for sheep provided that appropriate samples could be collected for testing. Stockowners should contact the DPI Call Centre on 13 25 23 or the nearest private vet.

Lee Taylor
Senior Veterinary Officer, DPI, Biloela
Phone: 07 4992 9182 Mobile: 0419 760 068

Providing for the welfare of extensive livestock in dry periods

AUSTRALIA has variable and prolonged dry periods, or droughts, that are an expected part of our seasonal cycle. These dry periods, or droughts, can be a difficult and often tragic event and both people and animals can suffer immeasurably. However proper planning and management that incorporate acceptable animal welfare standards along with pasture management, animal nutrition and supplementation, climate forecasting, and drought management can lessen the effects of these periods and maintain the long-term viability of the business.

Detailed below are some of the animal welfare standards that should be considered in any property management plan and outlines the roles and responsibilities the DPI has under animal welfare legislation.

The DPI now has the responsibility for administrating the Animal Care and Protection Act 2001 and stock inspectors play an active role in ensuring animal welfare standards are maintained.

Some important principles that producers need to consider to assist dry-season management include:

Duty of care – owners/managers or anyone in charge of animals have legal obligations to make apprpriate decisions that include consideration of any animal welfare impacts. Options in dry periods include selling, agist, feed, slaughter or humanely destroying animals. Animals need to be provided with adequate suitable feed and water, be treated for disease or injury and be appropriately handled.

Allowances for what might be appropriate include the species, the environment and the situation the animal is in, and the steps that a reasonable person would be expected to take at the time.

Model Codes of Practice – A key to good farm management and sustainability is to make these decisions well before the animals start to suffer. Acceptable standards in relation to dry season/drought management for livestock species are outlined in nationally recognised codes of practice. A basic principle of the Act and the Codes is that it is simply no longer acceptable to allow an animal to die due to lack of suitable feed and/or water. The key industry bodies endorse this principle.

Guidelines on acceptable animal welfare – It is important that the DPI provide guidelines for the animal industries on what is acceptable and what is not acceptable animal welfare, especially in areas where animal welfare risks may be high.

These guidelines may change over time in light of changes in our understanding of animals, due to changing industry practices and community expectations.

Guidelines for best management

Queensland's rainfall is both seasonal and variable. Pasture quantity and quality changes accordingly and, as a result, so does the condition of grazing animals. It is normal for grazing animals to gain weight during summer and autumn and maintain or lose weight during winter and spring. The effect of these seasonal conditions on pasture quantity and quality is usually evident well ahead of any impacts on the animals.

There are tools available to producers to help them assess the likelihood of dry periods or drought and to provide guidance on appropriate risk management strategies. Market information and climate forecasting tools are becoming more sophisticated and available to assist producers in any decision-making.

Decisions to make

- as seasonal conditions deteriorate, producers should decide to reduce stock numbers and/or supplement stock as part of normal dry season management.
- early decision making increases management options
- producers should ensure that they maintain livestock in at least strong store condition -minimum body condition score 2 (see footnote). When you believe there is a reasonable risk that these minimal requirements will not be met, risk management plans should be put in place.

What should plans indicate?

- what decisions will be made and under what conditions,
- when and how animals will be supplemented, hand fed, agisted, sold or humanely destroyed.

Survival feeding

From time to time there are periods of prolonged and generalised drought when available management options are not sufficient to maintain core stock in strong store condition. This may occur, for example, when it is not possible to purchase supplementary feed or the cost of such feed is prohibitive. In these cases "survival feeding" may be used as a last resort to maintain stock.

Survival feeding is providing less than the normal amount of food but sufficient food to maintain body processes (ie the animal continues to be able to eat, drink, stand, walk, and maintain body temperature and sensibility). The amount of food required to do this depends on various factors including sex, breed, age, environment, and activity level.

Where stock are fed a survival ration and are in a weakened condition, it is essential to monitor them closely. Animals that become recumbent or are not adapting to the feeding program should be humanely destroyed. Once feed becomes available stock should be fed and maintained in at least strong store condition (body score 2).

Remember: survival feeding is acceptable only in periods of genuine and prolonged drought and when other management options have been exhausted. These guidelines do not make it legitimate to overstock or mis-manage properties during normal seasonal variations.

Sustainable stocking rates

Sustainable stocking rates and acceptable animal welfare standards are closely related. Producers should maintain sustainable stocking rates and develop property plans that incorporate effective drought management strategies.

Transport of drought affected animals

The transport of drought-affected stock is an area of specific animal welfare concern. Owners have a responsibility to select only stock that are fit for travel taking into consideration the nature and duration of the proposed journey when determining the degree of fitness required. The DPI is currently drafting guidelines to assist stockowners; transporters and drivers to better prepare and assess the suitability of stock for transport.

Further information

Please contact your local DPI office or the DPI Drought Hotline on 1800 025 656. Alternatively telephone the DPI Call Centre on 13 25 23, 8 am to 6 pm – Monday to Friday, email callweb@dpi.qld.gov.au. You can also access the DPI's Animal Welfare web site: www.dpi.qld.gov.au/animalwelfare for further information on animal welfare matters.

The Department of Primary Industries recommends that you use the body condition rating system defined in *Animal Health and Disease Investigation for Stock Inspectors and Animal Managers,* pages 177-179, published by DPI.

Ian Rodger
Regional Program Leader
Animal Welfare, Cairns,
Phone 07 4044 1600

Climate outlook

THE SOUTHERN Oscillation Index, our indicator of the state of the El Nino / Southern Oscillation remains in a neutral phase at the end of October with the SOI value at the end of September minus 1.6 and at the end of October minus 2.8. A neutral phase of the SOI in the past has led to a 50-60% chance of getting above the long-term median November to January rainfall across eastern Queensland. Rainfall probabilities are slightly higher (60-70%) for parts of the north and central coast. For the rest of Queensland though, the chance of getting above median rainfall is lower at 40-50%.

Our next best opportunity for some 'climate induced' rainfall should be when the Madden–Julian Oscillation (40 day wave) is due to influence our weather. The last passage of the MJO influenced our weather in the first week of October producing some very patchy but useful rainfall totals especially across the south east quarter of Queensland. If it's timing remains current it would next be expected in the third week of November (see inset).

To be aware of are indicators in the Pacific such as near-surface level wind anomalies and sub-surface sea temperatures which are now showing the potential for an emergence of 'near El Niño' conditions over the next 3 to 8 months. US ocean/atmosphere models also suggest continued warming towards 'El Niño-like' conditions for 2004/2005. This development will be watched closely over the coming months.

The Madden-Julian Oscillation (MJO)

The 40-50 day wave or MJO is considered to be responsible for most intraseasonal (within season) variability in the tropical atmosphere after the El Niño Southern Oscillation. It is described as an easterly propagating wave of low air pressure that starts in the western Indian Ocean and moves eastwards to the Pacific. The equatorial part of the MJO (10°N to 10°S) varies in frequency (30–53 days) and strength from one season to the next due to changes in ocean temperature in the Pacific region. Faster frequencies are associated with warmer sea surface temperatures (SSTs) and slower frequencies with cooler SSTs.

The MJO is associated with a drop in atmospheric pressure, increased convection and strengthening of the monsoonal westerlies, often resulting in increased rainfall and 'active bursts' in the monsoon (rainfall periods of about ten days) leading a wind change of similar maximum intensity over the Indonesian–New Guinea region in our summer (DJF) and weakens by the International Date Line. It is understood that the MJO influences the timing, but not the intensity, of the monsoon active periods.

Three month forecasts

(Total November-January rainfall for a neutral SOI phase at the end of October)

Rainfall period: Nov to Jan	SOI neutral	All years
TOWNSVILLE		
% yrs with at least 1105 mm	0	5
600 mm	22	21
500 mm	37	35
400 mm	67	52
300 mm	78	61
200 mm	89	79
117 mm	100	95
Highest recorded (mm)	1072	1378
Lowest recorded (mm)	156	44
Median rainfall (mm)	447	405
BOWEN AIRPORT		
% yrs with at least 985 mm	4	5
550 mm	11	19
450 mm	37	28
350 mm	67	43
250 mm	74	62
150 mm	93	86
85 mm	100	95
Highest recorded (mm)	1016	1752
Lowest recorded (mm)	107	46
Median rainfall (mm)	382	300
MAREEBA		
% yrs with at least 706 mm	8	5
500 mm	19	20
450 mm	35	33
400 mm	42	40
300 mm	62	63
200 mm	88	83
125 mm	96	95
Highest recorded (mm)	774	1027
Lowest recorded (mm)	85	56
Median rainfall (mm)	325	341
CHARTERS TOWERS		
% yrs with at least 557 mm	7	5
450 mm	7	13
350 mm	15	23
250 mm	52	50
200 mm	67	58
150 mm	85	78
92 mm	100	96
Highest recorded (mm)	577	1239
Lowest recorded (mm)	117	47
Median rainfall (mm)	252	250

Rainfall period: Nov to Jan	SOI neutral	All years
MOUNT GARNET		
% yrs with at least 669 mm	9	5
500 mm	17	14
450 mm	26	21
400 mm	39	31
300 mm	78	63
200 mm	96	83
135 mm	100	96
Highest recorded (mm)	770	906
Lowest recorded (mm)	195	117
Median rainfall (mm)	343	338
HUGHENDEN POST OFFICE		
% yrs with at least 565 mm	0	4
300 mm	11	19
250 mm	26	33
200 mm	37	44
150 mm	74	68
100 mm	93	86
60 mm	96	97
Highest recorded (mm)	564	768
Lowest recorded (mm)	42	31
Median rainfall (mm)	190	192
GEORGETOWN POST OFFICE		
% yrs with at least 740 mm	0	5
550 mm	19	15
450 mm	44	31
350 mm	63	54
300 mm	74	68
250 mm	81	79
173 mm	96	95
Highest recorded (mm)	692	1400
Lowest recorded (mm)	164	90
Median rainfall (mm)	403	367
CLONCURRY		
% yrs with at least 536 mm	0	5
360 mm	8	16
260 mm	16	27
180 mm	36	46
140 mm	56	63
100 mm	88	83
70 mm	100	96
Highest recorded (mm)	529	1011
Lowest recorded (mm)	84	49
Median rainfall (mm)	146	168

Rainfall period: Nov to Jan	SOI neutral	All years
NORMANTON POST OFFICE		
% yrs with at least 834 mm	4	5
650 mm	11	14
550 mm	26	27
450 mm	37	40
350 mm	63	64
250 mm	89	85
161 mm	93	95
Highest recorded (mm)	840	1428
Lowest recorded (mm)	83	83
Median rainfall (mm)	404	396
MOUNT ISA		
% yrs with at least 503 mm	7	5
340 mm	7	13
240 mm	11	22
160 mm	41	49
120 mm	74	74
180 mm	89	88
854 mm	100	96
Highest recorded (mm)	549	629
Lowest recorded (mm)	64	34
Median rainfall (mm)	139	159
LAURA		
% yrs with at least 822 mm	4	5
700 mm	8	10
600 mm	12	14
500 mm	28	28
400 mm	64	57
300 mm	80	73
150 mm	100	95
Highest recorded (mm)	839	1112
Lowest recorded (mm)	159	91
Median rainfall (mm)	419	419
COEN POST OFFICE		
% yrs with at least 964 mm	0	4
700 mm	7	12
600 mm	11	23
500 mm	33	44
400 mm	70	66
300 mm	859	85
183 mm	100	96
Highest recorded (mm)	881	1509
Lowest recorded (mm)	191	59
Median rainfall (mm)	479	479

For the latest on the seasonal climate update visit http://www.longpaddock.qld.gov.au or for more on the drought see http://www.dpi.qld.gov.au/drought/ or call the DPI Call Centre on 13 25 23. Daily updates of the SOI are available on 07 46881439.

Stock handling at saleyards – Who's looking at your animals?

SALEYARDS are areas of high industry exposure as they are open to the public and people often wander freely during sales. This makes saleyards a highly visible area when it comes to animal welfare issues and the saleyard management are often left fielding complaints and may be subject to investigations for animal welfare breaches when the saleyards themselves are not the cause of the problem.

To address these issues there are certain legal responsibilities now assigned to individuals under the *Animal Care and Protection Act 2001 (*the *ACPA).* There are also other responsibility guidelines that are detailed in the *Australian Model Code of Practice for the Welfare of Animals, Animals at Saleyards,* an industry code of practice adopted by the legislation. These need to be understood to minimise the potential for animal welfare incidents and ensure that any animals passing through saleyards are treated with care and best practice standards are maintained.

Duty of care

The *ACPA* states that a person in charge of an animal owes a duty of care to that animal. This duty of care includes providing appropriate food and water and living conditions, treating disease and injury and handling animals in an appropriate way. Depending on where in the supply chain the animal is will determine who has the duty of care responsibility.

Superintendent or saleyard supervisor

The manager, superintendent or saleyard supervisor has overall responsibility for the welfare, care and handling of animals while the stock are held at the saleyard complex. He is in charge of the day-to-day activities at the saleyard, either directly through the supervision of actions of saleyard staff or indirectly through the livestock agents and contract stock handlers. He should ensure that suitable standards are maintained.

Stock handlers at saleyards

Stock handlers must be competent in the handling of all classes of stock. They should have the ability to recognise the early signs of distress and injury to animals as well as exhibit patience, commonsense and responsibility in dealing with animals.

Inexperienced persons should receive adequate instructions/training on handling stock by competent and skilled staff and under no circumstances should cruelty or ill treatment of animals be tolerated.

Each species of animal needs to be handled differently and in the *Australian Model Codes of Practice for the Welfare of Animals* some methods of handling to minimise stress are described.

Animals should be held in saleyards for as short a period as possible.

Owners

Owners are responsible for sending only stock that are fit for sale and suitable to travel to their proposed destination. The nature and duration of any proposed journey should be considered when determining the degree of fitness required.

Owners should also provide contact names and phone numbers for the owner, agent or person responsible at the destination to ensure arriving stock will be properly cared for.

Diseased, injured or weak stock should not be consigned to or processed through a saleyard.

Stock buyers

When buying stock, the type of stock, condition of stock, the nature and duration of the proposed journey should be considered when assessing suitability of stock to travel to their proposed destination.

Agents

Agents who are acting on behalf of owners have a legal duty of care under the *ACPA* as the person in charge for those animals. Agents should work closely with the saleyard supervisor to resolve any animal welfare issues that arise prior to and during the sale.

Feed and water access at saleyards

Animals travelling long distances should be given sufficient time after arrival at the saleyard to feed, water and rest. The time stock can be kept off feed without detriment to their welfare is generally greater than the time spent off water. For example under normal conditions cattle can be kept off water for up to 36 hours. This includes time spent in yards after mustering and travelling time but for other classes of stock such as pregnant or lactating cows this should be correspondingly shorter. The *Australian Model Code of Practice for the Welfare of Animals, Animals at Saleyard* and *Land Transport of Cattle* give guidelines on maximum water deprivation times and feed times.

The owner or agent is responsible for feeding of the livestock. In the absence of the owner and/or agent arrangements for feeding and watering should be made with the person in charge of the saleyard.

Injured animals

An animal is to be considered injured and unable to be transported if it is unable to stand and bear its weight

on all limbs and/or it cannot walk off because of injury or exhaustion.

Severely injured animals must be humanely destroyed without delay.

Destruction should be carried out by, or at the direction of, the person in charge at the time if a veterinarian is unavailable.

It is unacceptable to delay the humane destruction of severely injured animals.

Summary

By undertaking adequate pre-transport preparation of livestock and by having a good understanding of the provisions and responsibilities of individuals, animals passing through saleyards will be assured humane treatment in accordance with the law and the relevant *Australian Model Codes of Practice for the Welfare of Animals*.

Further information

For your free copy of the *Australian Model Codes of Practice for the Welfare of Animals* please contact your local DPI office or telephone the DPI Call Centre on 13 25 23, 8 am to 6 pm – Monday to Friday, email callweb@dpi.qld.gov.au. You can also access the DPI's Animal Welfare web site: www.dpi.qld.gov.au/animalwelfare for further information on animal welfare matters.

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Regional Project Leader (Animal Welfare)
Animal and Plant Health Service, Cairns
Phone 07 4044 1675

Beware - new cattle country

WITH THE HUGH interest from graziers to expand their cattle enterprises, there has been an increase in land prices making previously unthought of options appear possible.

After battling drought, many graziers have sought out 'safe' fattening blocks along the coast. However, with the large expansion in sugar cane growing and horticultural crops over the past decade, this choice fattening country is in short supply. Such demand has had the inevitable effect of pushing up coastal grazing land prices and in combination with years of extremely low sugar industry returns, the buying of cane land for grazing has become a popular option.

The production aspects of tropical pastures, particularly in the wet coast area, has been well demonstrated over the years through DPI research and field experience with annual liveweight gains in excessive of 180 kg and stocking rates of 2.5 to 5 head per ha (1-2/acre) dependent upon soil fertility. With reliable rainfall, the use of fertilizer is a viable proposition resulting in excellent production of beef per hectare year round. There is also the added advantage of being able to hold onto stock when others are forced onto the market due to dry conditions, and then selling at the end of the season when prices generally escalate.

Despite all these advantages, running cattle on old cane paddocks may be a risky undertaking. There is the potential for cattle to accumulate organochlorine (OC) residues in their carcase fat from contaminated soil. OC chemicals such as BHC, Heptachlor, DDT and Dieldrin were commonly used for insect control in farming areas in the past. Although their use has been banned for quite a while now, the nature of this type of chemical allows them to persist in the environment for many years. Many have a half-life in soil of 5-12 years ie the time taken for the concentration of the chemical to reduce by half.

Generally, there is little translocation of OC residues from contaminated soil to the plant. Most of the residues in cattle are acquired directly from the consumption of contaminated soil. This contamination can occur from cattle grooming themselves and from consuming pasture covered with soil from dust, flooding or pugging. The OC chemicals accumulate readily in the fat of animals.

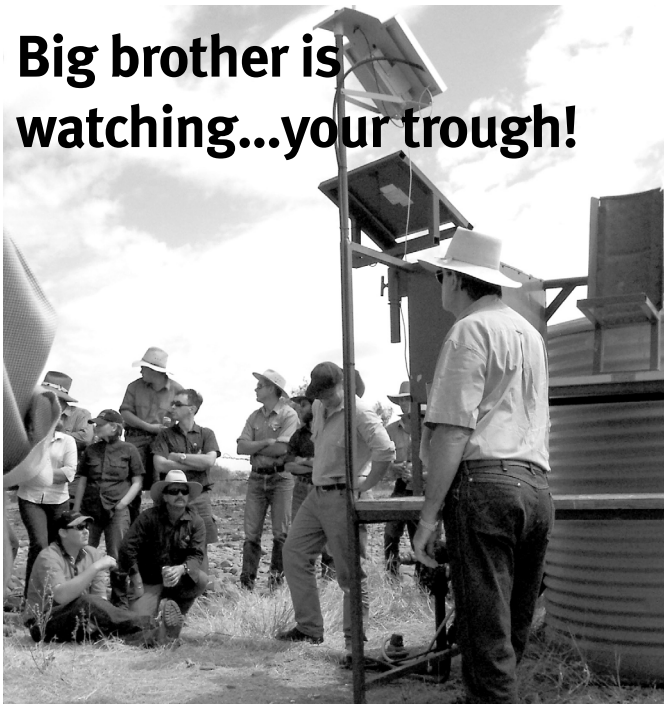
Random and targeted testing of slaughter cattle for chemical residues is commonplace. Violative levels of OC in cattle can lead to properties being quarantined and carcases condemned.

All new cattle properties are required to be registered with the DPI. Part of this registration process involves the local Stock Inspector undertaking a risk assessment on OC to determine the potential for violative residue levels.

Old cane and horticulture paddocks are being used successfully for cattle fattening without any residue problems. Even if the soil is contaminated, most potential residue problems can be avoided through careful pasture management and good animal husbandry practices. However, the attraction of green grass can have hidden dangers.

Glen J Sibson
Acting Regional Inspector
CWTA, South Johnstone
Phone 07 4064 1153

Big brother is watching...your trough!



PRECISION agriculture has long been a familiar term in cropping circles, however, it is also a concept that is steadily, but surely edging its way into extensive grazing systems. A key observation you will make while visiting Victoria River Downs is the recent infrastructure development and odd pieces of gadgetry and electronic devices around the place. All of this is not only designed to improve herd management, but to also address increasing labour issues that intensified herd management can attract. Some of the technology being trialed on VRD includes:

Telemetry

Telemetry is a form of remote monitoring of infrastructure, in this example watering points. The telemetry system being trialed on VRD involves a series of sensors which read back to the house or vehicles via UHF radio. Sensors are hooked up to measure:

- Tank level
- Flow rate of water from bores or tanks to troughs
- Dispensing of supplements, such as urea, from water medicators
- Rainfall in rain gauges

Additional items connected to the telemetry system include electronic switches to start and stop bores and all-weather cameras at troughs to monitor water quality and to as a back-up to ensure the water sensors are working. All can be linked to and operated from your office computer.

Water medicators

Supplementing cattle by adding soluble minerals and nutrients to controlled waters. The NT agriculture department has been trialing different medicator mixes to match seasonal conditions. Heytesbury sees the main benefits of water mediation as: every animal gets it (15 – 20% of animals don't eat blocks) and cost (about half the price of dry supplementation). The downsides are the poisoning risk if urea levels are not accurately regulated and the reaction with some types of water.

GPS receiver collars

Researchers have always had difficulty monitoring animal behaviour and grazing patterns, however, the grazing distribution trial at Pigeon Hole is maximising the use of technology and fitting animals with GPS receiver collars to record cattle activity and location.

Satellite Imagery

The Pigeon Hole site is being used to calibrate MODIS (Moderate Resolution Imaging Spectroradiometer) satellite data on black soil types for fortnightly or monthly monitoring of pastures including: ground cover, pasture biomass and greenness. On large-scale properties, satellite imagery has been tagged as the most consistent and cost effective means of comparing response of vegetation to seasonal and grazing impacts.

Heytesbury has done their figures and believe that this technology will quickly pay for itself in terms of reduced labour costs and greater control over herd husbandry, particularly during the wet season when supplementary feeding and infrastructure monitoring is difficult. All we need now are robots that fix the float on the trough, refill the fuel tanks and pull dead animals out of the turkey's nest!

Jillian Aisthorpe
Grazing Land Management Extension Officer
DPI, Emerald
Phone 07 4983 7421

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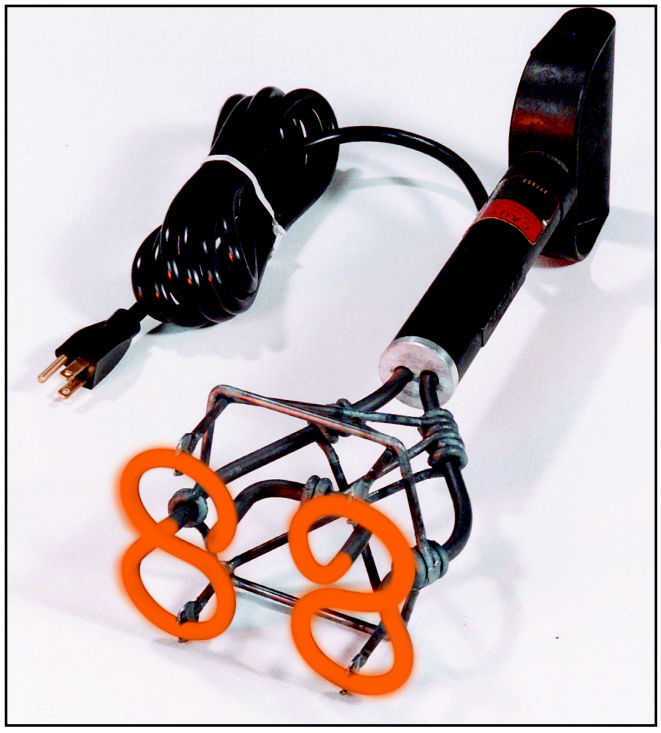

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What is all this "planning" about?

A prerequisite for the flow-on of funding from Natural Heritage Trust 2 and the National Action Plan for Salinity and Water Quality is the development of a Regional Natural Resource Management Plan for the entire Burdekin Catchment. There are currently five sub-regions across the catchment surging ahead through the necessary steps within this comprehensive plan. The whole process is being coordinated through the Burdekin Dry Tropics Board. At a Community Forum in September 2003, the Burdekin Rangelands sub-region went through a process to reaffirm natural resource management issues, identify any new emerging issues since the development of a sub-regional NRM strategy in June 2000 and linked the current issues to our natural resource assets. A reference panel of seventeen key representatives across a range of industries and land users will use a robust process to prioritise the long list of issues.

Then the hard work begins! Achievable, realistic, measurable targets need to be set for the highest priority issues. These targets need to capture trends for conservation, land and water condition across the catchment as well as provide management goals for on-ground activities at property and paddock level. The timeline to develop the Draft Regional Plan from the input of the five sub-regions is June 2004. Progress of the planning process can be monitored on the Burdekin Dry Tropics web site (www.burdekindrytropics.org.au).

To date, there are only three catchments across Australia that have achieved government accreditation of their Regional Natural Resource Management Plans and have commenced NHT2 project funding. Another stalemate is the signing of the Bilateral Agreement between the Qld State Government and the Commonwealth Government, which is currently held up over vegetation management legislation issues.

Hopefully the next edition of the Northern Muster in 2004 will report considerable progress towards the NRM Plan. If you would like to receive direct information or become more involved with the planning process, please contact the Burdekin Rangelands Implementation Group (ph 4754 6120) or your sub-regional group Landcare Coordinator.

Future funding opportunities

If your producer group wants to solve a production issue by doing your own property trials or education program, consider a PIRD (Producer Initiated Research and Development) grant from Meat Livestock Australia. Up to $10 000 is available for a two-year project. Applications close on 28 February 2004. For more details, visit the MLA website www.mla.com.au or contact Gerald Martin, phone 08 8556 2900.

Bundaberg Rum Bush Fund is offering $1000 to $5000 for community group activities that improve the environmental health of a local waterway. Applications close 10 May 2004. Details and forms are available from www.landcareaustralia.com.au

Conservation Volunteers Australia can provide a team of six Better Earth volunteers for a fee of $2750 per week (incl GST) to assist with projects to preserve, protect and restore our environment and cultural heritage. Conservation Volunteers also provides the team leader, transport vehicle, camping equipment, food for the volunteers, and insurance. For more information, contact Terry Byrne phone 4721 4077. Examples of previous projects in Dalrymple Shire include woody weed control in (a) a basalt wetland and (b) around a mining heritage site at Ravenswood.

The release date of the next round of the Australian Government Envirofund has been delayed, but Envirofund hotline contacts indicate a call for projects commencing in mid December 2003, with applications closing in February 2004. Grants up to $30 000 per group or individual are available for projects involving conservation, waterway health, erosion control, protecting cultural heritage, sustainable farming and forestry, management techniques to increase biodiversity and habitat, and monitoring of resources where there is benefit to conservation or sustainable natural resource management. The 2003 guidelines should not change to any great extent for the next 2003\04 round. Priority will be given to applicants who have not previously received Envirofund funds. Individual applications need to demonstrate high public benefit (eg. activities will improve catchment natural resources). Visit the website www.nht.gov.au for guidelines and application forms or contact your local Landcare Coordinator (Clermont, Barcaldine, Charters Towers, Townsville, Ayr, Upper Herbert) or the Burdekin Dry Tropics Board (ph 4724 3544) for more details.

Dow Agrosciences is running a promotion for farmers and producers from October 2003 to May 2004. Purchase 20 litres or more of Grazon* DS foliar herbicide and receive one litre of Access herbicide free. For a coupon to claim the free Access, phone Wayne Favier, Dow Agrosciences 0409 871 141 or Customer Service (toll free) 1800 700 096.

dalrymple **diary** (cont)

Landcare Achievement Award to Colin Healing

Colin Healing was recognised for his five years of dedication and outstanding achievements for landcare at the Dalrymple Landcare Committee AGM in November. During his chairmanship, Colin was instrumental in the instigation of a number of projects, including the DPI's Burdekin Rangelands Reef Initiative Woody Weed Management Projects in the Cape River Catchment and Burdekin Rangelands.

Composed by:

Marie Vitelli, Landcare Coordinator
Dalrymple Landcare Committee Inc.
Burdekin Rangelands
Implementation Group
PO Box 976, Charters Towers QLD 4820
Phone 07 4754 6120

Backyard blitz – redesigning grazing systems in the NT

THEY SAY that everything is bigger in the Northern Territory (NT), and that is certainly no exception for grazing land research either. In mid-August, I was fortunate enough to visit Victoria River Downs (VRD), 390km south of Katherine, to attend the Mt Sanford field day and look at Australia's newest and largest commercial grazing trial, 'Pigeon Hole'. The five-year, 5.4 million-dollar project, jointly funded by Heytesbury Beef, NT government, MLA, and CSIRO, has been designed to evaluate grazing systems to improve pasture utilisation and herd productivity in the region.

Victoria River Downs is owned by Heytesbury Beef and covers an area of 9399km^2 (939 900ha), a shadow of its former size when it was over 30 000km^2 (3 million ha). The VRD pastoral lease is managed as four individual properties: VRD, Mt Sanford, Moolooloo and Pigeon Hole. The main grazing country consists of basalt-derived cracking clay plains, common grasses include golden beard grass, annual sorghum and mitchell grass and common woody vegetation includes bloodwoods, bauhinia and nutwood.

The opening of the live export market has prompted massive changes in the region. It has highlighted the need for a much greater herd control. At its peak in the early 1900's, herd size on VRD was estimated to be up to 170 000 head of cattle[1]. Thousands of clean skin bulls "of all ages and the most mongrel types imaginable" ran indiscreetly with the breeders. Mortality rates and branding rates were dismal and managers were simply harvesting what they could to try and break even.

Those days are gone and property design and management strategies that optimise pasture utilisation and herd productivity are all the go in the Territory at present. This is the key area of investigation for the Pigeon Hole project.

Improving pasture utilisation

Cattle are not lawnmowers; they don't uniformly graze paddocks. There are only two times that they will. The first is when the paddock is completely uniform in grass composition and access to water and the second is when they are very hungry. Stock have distinctive patterns in the way that they graze. Most will only graze within 3km of waters, and closer during hot conditions. In large paddocks this often means only a small portion of pasture is being utilised due to water limitations. Cattle also tend to preferentially graze particular areas within a paddock based on season, soil type and the stage of grass growth.

Via the Pigeon Hole project, researchers hope to gain a better understanding of these variables and develop grazing and infrastructure guidelines that improve economic performance whilst maintaining range condition and minimising biodiversity effects.

Key areas of investigation are:

1. Optimum levels of pasture utilisation

This aspect of the project is a follow-on from work started in the early 90's at Mt Sanford where the impact of different utilisation levels was monitored. It is estimated that the average pasture utilisation rate (proportion of the year's growth that is eaten by cattle) in the VRD region is currently 12.5%. Results from the Mt Sanford trial suggest that this could be sustainably increased to around 22%. In the trial the researchers will be looking at the practicality, land condition effects and grazing behaviour of animals at different utilisation levels.

[1] Lewis, D. (2002) *Slower than the Eye can See*. Tropical Savannas CRC, Darwin.

2. Paddock design (size and number of watering points) which cost effectively reduces uneven pasture use, provides for sustainable increased pasture use and beef productivity.

In theory, increasing animal distribution and pasture utilisation in large, previously under-utilised paddocks should result in an increased overall carrying capacity and thus greater overall returns for a property. However, the work done at Mt Sanford suggests that there can be negative effects in terms of reduced animal weight gain and condition score due to a reduced ability to select out a higher quality diet. The key comparison will be between large paddocks with diverse landscapes and good water distribution verses small controlled paddocks. This aim is to identify paddock design that has the optimum balance between pasture utilisation and animal performance.

3. Alternative grazing systems that sustainably increase pasture utilisation

This part of the project aims to determine if alternative grazing systems can achieve higher levels of utilisation and stocking rates without detrimental effects to pasture dynamics and animal production. Four grazing strategies are being examined:

- Set stocking (number of animals set equivalent to long-term 20% pasture utilisation)
- Set utilisation (set pasture utilisation of 20%)
- Wet season spelling (average of 35% utilisation)
- Cell grazing (estimated 35-50% pasture utilisation, 25 paddocks in 3300ha area)

4. Conservation and biodiversity

Designed to answer the questions 'what impact does rate of pasture utilisation have on biodiversity' and what is the impact of different sized 'conservation' areas on biodiversity within a commercially managed property?

Improving herd fertility

In the early 90's the average mortality rates and weaning rates in the Katherine region were 12% and 50% respectively. One of the key limitations to improved productivity was re-conception rates in wet cows due to poor body condition. Work at Mt Sanford has shown that wet cows grazing heavily stocked paddocks have re-conception rates lower than 20%, primarily due to their poor body condition at mating.

To improve these figures, the NT Agriculture department identified and trialed some simple, Best Bet management strategies. A few of these include:

- All stock supplemented year round; urea-based supplements in the dry and phosphorus based supplements in the wet (more strategic use of supplements is being investigated)

- All calves greater than 100kg are weaned and grazed on saved native pasture; breeders in better condition may be able to support calves for a longer period
- Cull cows based on performance (barrenness, temperament and injury)
- Moderate stocking rate according to land type capability and management system
- Heifers are mated at 2 years of age, with a liveweight greater that 280kg and good temperament. Heifers are run separately until they wean their first calf, supplemented as required and vaccinated for Vibirosis.

Implementation of these strategies on Kidman Springs has seen mortality rates reduce to 2% and weaning rates increase to 80%.

The other half of the herd productivity story was bull fertility. The key message for NT graziers was to select bulls from an environment where they are going to be used and preferably with no special feeding, or, to home-breed their own bulls. Heat and transport stress often render many newly purchased, interstate bulls useless for the first few months, and sometimes for good. In large herds, where managers have the ability to select and breed from the best of a wide pool of animals, genetic improvement is quick. The added benefit is that the animals are well adapted to the environment in which their progeny are to perform.

The future

Everything points to an exciting future for the NT beef industry. The most difficult part is getting a piece of the action. With only 219 pastoral leases in the whole of the territory, properties aren't easy to come by. A tip for those who are looking to make their fortune in the territory; experience indicates that a Toyota dealership specialising in white landcruisers, or a tyre franchise in Katherine would be a sound investment!

Jillian Aisthorpe
Grazing Land Management Extension Officer
DPI, Emerald
Phone 07 4983 7421

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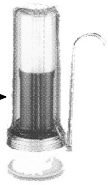

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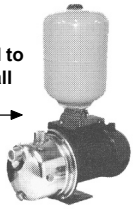

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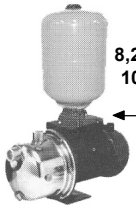

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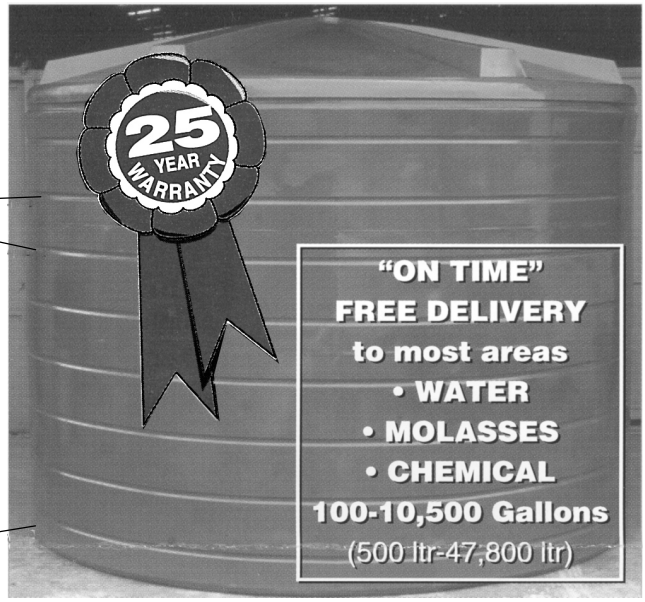
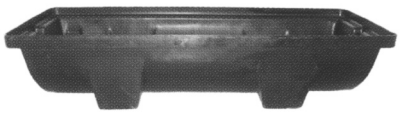
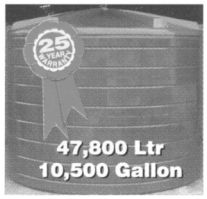




Troughs



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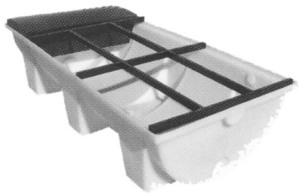
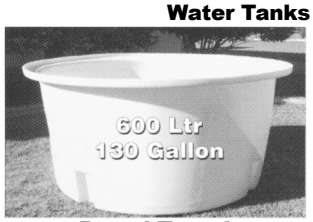
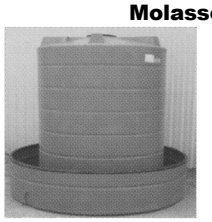


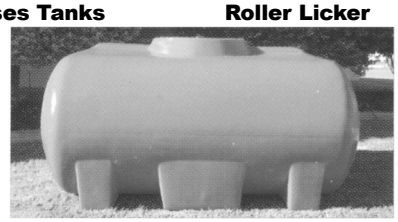
Long Trough



Round Trough



Cups & Saucers



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Sustaining our resources

Community delivering solutions

THE BURDEKIN Dry Tropics Board is a community based organisation established to deliver the National Action Plan for Salinity and Water Quality, Natural Heritage Trust II and other funds.

It services the community of the region through five sub-regional groups:

- Burdekin-Bowen Integrated Floodplain Management Advisory Committee (BBIFMAC)
- Natural Resources and Environment Forum of Townsville Thuringowa (NaREF)
- Burdekin Rangelands Implementation Group (BRIG)
- Belyando-Suttor Implementation Group (BSIG)
- Eastern Desert Uplands Sub-Region (EDU)

To obtain funding for action on issues such as salinity, water quality and distribution, loss of biodiversity, vegetation management and wetland degradation, the Burdekin Dry Tropics Board and the five sub-regional groups are required to develop a Regional Natural Resource Management Plan.

This plan will guide partnerships and future investment in natural resource management and outline priority issues, targets and actions.

Plan development involves extensive community participation and ownership. The Regional Natural Resource Management Plan builds on existing strategies and plans and uses the best available community knowledge and science. This ongoing process is flexible, allowing for recommendations and changes based on new information.

Your feedback and input as land managers and land users is one of the most important aspects of this process. If you feel strongly about a particular issue or merely wish to make a constructive contribution, please feel free to contact us or visit our website www.burdekindrytropics.org.au

For more information on how to be involved, contact the Burdeking Dry Tropis board or your local sub-region.

Arwen Rickert:
Strategic Projects Coordinator
Phone 4724 3544
Fax 4724 3577
Email arwen.rickert@nrm.qld.gov.au

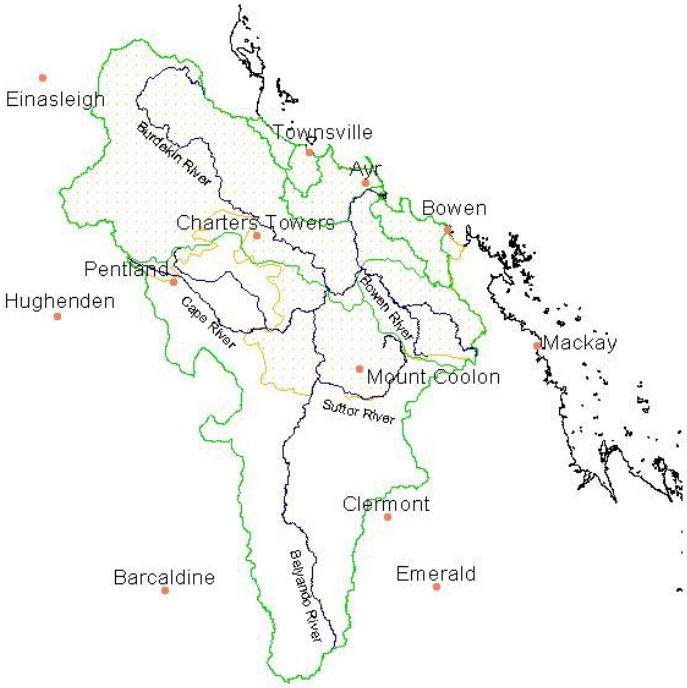

Figure 1. The Burdekin Dry Tropics Region

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National Livestock Identification Scheme (NLIS)

What is NLIS?

National Livestock Identification Scheme (NLIS) is Australia's system for the identification and tracing of livestock. It is a permanent whole-of-life identification system that enables individual animals to be tracked from property of birth to slaughter for food safety, product integrity and market access purposes

NLIS provides the facility for cattle to be electronically identified at the time of transaction, in saleyards or at slaughter. Cattle movements between properties will be progressively logged in a secure central database – the NLIS database. When integrated with post slaughter tracking systems, the NLIS database allows for rapid and accurate tracing of cattle in the event of disease outbreak or residue incident.

All state and territory governments, together with industry, have agreed to aim for the introduction of the NLIS by 1 July 2004.

Why is identification and traceability so important?

A recent Commonwealth government study estimated the overall economic loss as a result of an FMD outbreak to be between $2 billion and $13 billion. Though NLIS will not prevent a disease outbreak, it will be able to reduce the financial and social impact of a disease epidemic due to its accurate identification and rapid traceability capabilities.

Key benefits for the Australian livestock industry

- Reduction of the financial and social impact of a livestock disease epidemic or residue incident due to enhancements in livestock identification and traceability.
- Being prepared for international customers demanding whole-of-life, property-of-origin traceability.
- Maintaining access to restricted markets like the European Union.
- Ensuring domestic and export consumers continue to have confidence in Australian beef and dairy products.
- Upholding Australia's reputation as a quality producer by underpinning the integrity and safety of Australia's beef and dairy products.

Key benefits for producers

The benefits derived from NLIS are dependant on how producers use the technology in their business and can include:

- Improved management and breeding decisions by using individual animal performance data linked to carcase feedback to fine tune compliance with customer specifications.
- Time saved and more accurate individual animal data due to automated electronic recording.
- Reduced stock theft through proof of ownership.

How does NLIS work?

For the last 30 years, Australia has used the tail tag system to identify the last property on which the cattle have been run. The system has worked well but is limited in traceability because the tail tag only indicates the Property Identification Code (PIC) of the property from which the cattle have been dispatched.

NLIS uses machine-readable Radio Frequency Identification (RFID) devices to identify cattle throughout the life of the animal. NLIS identification devices come in the form of an ear tag or rumen bolus/ear tag combination.

Cattle identified with NLIS devices can be electronically read as they move through the livestock chain. At time of reading, each owner's PIC can be recorded and linked to the NLIS device. This transaction information is then stored in the secure central NLIS database.

Once full transaction recording is in place, a life record of an animal's residency, and which other animals it has interacted with, will be established. It is this centrally stored electronic history of an individual animal's residency that will enable rapid and accurate traceability.

What does NLIS cost?

Participants need to identify their cattle with an approved NLIS device, which range from $3.50 to $5.80 per animal. A compatible applicator is also required, ranging between $20 and $150. Prices quoted exclude GST.

Options for NLIS participation

The adoption of NLIS is currently voluntary in states other than Victoria, with several states considering the further implementation of the NLIS. Producers outside of Victoria have several options available to them, in preparation for the introduction of the NLIS.

Need More Information?

MLA in response have produced a number of very informative publications and have set up an information helpdesk 1800 654 743 and web site www.nlis.com.au to assist with enquiries or you can contact your local Stock Inspector.

Ted Vinson
District Inspector of Stock
DPI, Charters Towers
Phone 07 4754 6104

Weed alert

THE ONGOING drought and resulting heavy grazing in North Queensland has significantly reduced the level of land cover in many areas. This means that when the drought finally breaks, and the rain comes, so too will weeds such as Parthenium. The reduced cover also means that any of the less palatable weeds, such as Giant rat's tail grasses, will be grazed less and will probably become very obvious. Now is a good time for property owners to start looking for these weeds and taking note of their locations so that control measures can be implemented when appropriate.

Under continued heavy grazing conditions, Parthenium weed can dominate pastures leading to the exclusion of useful forage plants, and a decrease in pasture productivity. Parthenium is allelopathic, which means it can chemically inhibit pasture growth and the seed germination of other plants.

Giant rat's tail grasses are aggressive grasses of low palatability when mature and generally difficult to control. They can quickly out-compete desirable plants that have been weakened by overgrazing or drought. The rat's tail grasses are robust, tufted, perennial grasses that generally have a rat's tail flower spike that may open out to a pyramid shape when mature. The tussocks are difficult to pull out, and the leaves are tough compared to other grasses. They can also be difficult to distinguish from some of the native *Sporobolus species*.

Under the new Land Protection (Pest and Stock Route Management) Act 2002 there have been some significant changes in respect to rat's tail grasses, or the Weedy Sporobolus grasses as they are sometimes known. There are 5 grasses, listed below, which are now declared Class 2 pests under this new act. Under the old Act only 2 species were listed. The 5 grasses are: -

American rat's tail grass (*Sporobolus jacquemontii*);

Giant Parramatta grass (*Sporobolus fertilis*);

Giant rat's tail grass (*Sporobolus pyramidalis* and *S. natalensis*); and

Parramatta grass (*Sporobolus africanus*)

Landowners are obliged to take reasonable steps to keep their lands free of these Class 2 weeds.

One important tool in achieving this requirement is the use of the Weed Hygiene Declaration. Under the new Act it is illegal to supply any thing, including machinery, grain, fodder, gravel or soil that is contaminated with any reproductive part of the 5 grasses mentioned above without written notification. This is also the case for parthenium and prickly acacia.

To help suppliers, the department of Natural Resources and Mines has developed a Weed Hygiene Declaration form, which can be used to provide the required notification. Landholders are encouraged to use this form when supplying or moving anything that could be carrying reproductive material from these plants. If they are receiving fodder or grain from an area where these plants may be present, then they should ask the vendor to supply a weed hygiene declaration.

You can help prevent weed spread by:

- knowing the weeds in your area;
- asking for a weed Hygiene declaration when buying any product that could be contaminated with weed seed;.
- controlling a weed that contaminates material you procure;
- ensuring you clean your car at the earliest opportunity after taking it off-road or onto a bush track;
- cleaning your equipment, boots, vehicles and machinery before you leave known weed infested areas;
- not moving infested hay, seed, livestock and other things;
- requesting that visitors clean their vehicles, machinery and equipment before entering your property; and by
- controlling weed infestations before they spread and become major problem.

For information about the identification, management and control of declared weeds contact your local Council Pest Management Officer or NR&M Land Protection Officer or visit: http://www.nrm.qld.gov.au/factsheets

Buying bulls using Estimated Breeding Values

HOW DO YOU KNOW if one bull is better than another? This is a dilemma many commercial beef producers face. Bulls are purchased according to many factors including breed, muscling, pedigree, temperament and structural soundness. There are certain traits, however, for which visual assessment is not the best indicator of a bull's potential as a sire. These include fertility, growth and carcase traits. For these traits, Estimated Breeding Values (EBVs) can help! They provide bull buyers with the opportunity to make objective choices about a bull.

EBVs explained

EBVs indicate the genetic potential of an animal for a particular trait and remove the effect of the environment on that animal's performance in the particular trait. BREEDPLAN EBVs indicate the genetic worth of a particular bull compared with his contemporaries within the same herd. GROUP BREEDPLAN EBVs indicate a bull's genetic worth compared across herds with all other recorded bulls in that breed.

BREEDPLAN currently calculates EBVs for six growth traits, five fertility traits and six carcase traits (Table 1).

How to use EBVs

Often, bull buyers will attend a sale with a particular type of bull in mind. They will select those bulls that suit their requirements and then use EBV information to make a final decision.

An alternative approach is for a bull buyer to select a list of bulls from the catalogue based on the EBVs for particular traits. At the sale, the buyer assesses the selected bulls for conformation, structural soundness and temperament before making a final selection.

The two bulls in Table 2 are an example of how a producer might use EBVs in selecting a bull.

Calves get half their genes from the bull (and the other half from the cow), so the expected difference in the average performance of the progeny is half the bull's EBV for that trait. For example, the average performance of calves from Bull A for 600-day growth would be expected to be 24 kg above breed average, and for Bull B, 15 kg. Therefore progeny from Bull A would be 9 kg heavier than the progeny of Bull B at 600 days.

A Jap Ox breeder would select Bull A because its higher EBV for 600-day weight is more suitable for the Jap Ox breeding objective.

However if the breeder's objective is to produce veal, Bull B would be the more suitable selection because it has a higher EBV for 200-day milk and a reasonable EBV for 200-day weight.

Limitations when using EBVs in bull selection

EBVs only provide information about the traits to which they refer. Bull buyers should use EBV information in conjunction with visual assessment for traits such as temperament and structural and reproductive soundness (which are essential factors to consider). If a bull cannot walk around and get cows into calf, he is of no value to your herd, no matter how good his EBV is.

You can't compare apples and oranges – GROUP BREEDPLAN EBVs can only be used to compare bulls within the one breed. Your selection decisions need to be based on which breed or breeds match your breeding objectives best and then selecting animals from within the breed to do the job for you.

The ABRI website (www.abri.une.edu.au) has detailed information on BREEDPLAN and GROUP BREEDPLAN EBVs. The DPI conducts a one-day workshop on BREEDPLAN. Please contact us if you are keen to learn more and we can tailor a workshop to suit your group.

Table 1 BREEDPLAN EBVs

Growth (kg)	Fertility	Carcase
Birth weight	Scrotal size (cm)	Carcase weight (kg)
200-day milk	Days to calving	Eye Muscle Area (EMA)
200-day weight	Gestation length (days)	Rib fat
400-day weight	Calving ease (direct)	Rump fat (P8)
600-day weight	Calving ease (of daughters)	Retail Beef Yield percentage (RBY%)
Mature cow weight		Intramuscular Fat percentage (IMF%)

Table 2 Using EBVs to select a bull

Bull	EBV			
	200-day milk	200-day weight	400-day weight	600-day weight
A	-8	+17	+28	+48
B	+7	+10	+15	+30

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EBVs really work!

Results from a North Queensland Producer Demonstration Site

A DEMONSTRATION on 'Birralee', Collinsville, owned by Gill and Andrew MacNicol, showed the benefits of using EBVs to select bulls in a commercial situation.

Brahman heifers were mated (by AI) to bulls with either high or low EBVs for 600-day growth. The average difference in EBVs between the two groups of bulls was 40 kg, which means the average difference in weight between the two groups of steer progeny at 600 days (approximately 20 months) should have been half this (about 20 kg).

The heifers and their calves were all run in the same paddock until weaning; steer progeny were all run in the same paddock from weaning to turnoff.

Steer liveweight from weaning to 30 months

	High EBV Steers (+27.4 kg)	Low EBV Steers (-12.6 kg)	Weight Advantage (kg)
Weaning weight	186.5	179	+7.5 ns
18 month weight	283	267	+16 *
30 month weight	481	460	+21 *

notes:

The figures in brackets ( ) are the average EBV for that group of bulls.

The asterisks (*) indicate significant results. 'ns' means the weight differences were not statistically significant.

The steer progeny from the bulls with the higher 600-day EBV did indeed have a weight advantage – 16 kg at 18 months and 21 kg at 30 months.

This demonstration only looked at the one trait, growth rate. EBVs are generated for a number of other traits of benefit to the commercial producer that should be considered in relation to breeding objectives and target markets.

DPI acknowledges the excellent support provided by Andrew and Gill MacNicol in hosting this demonstration.

For further information and complete results for this PDS project:

Phone Rod Thompson or Alan Laing, at the DPI Call Centre on13 25 23 between 8am and 6pm weekdays

Do your cattle need phosphorus this wet?

THIS YEAR, during the drought there have been instances of cattle breaking bones from Phosphorus deficiency. The run of poor seasons is likely to be taking a toll on Phosphorus levels in cattle in deficient country.

When the season breaks, and green grass returns, it may be a higher priority than usual on P deficient country to target Phosphorus supplementation.

A study showed that heifers grown from July to April on pastures growing on soils with adequate levels of phosphorus put on 64kg more than heifers on grossly phosphorus deficient soils. Heifers alternated between the two treatments at intervals of two months only averaged 31kg heavier than those on the low phosphorus soil.

In phosphorus deficient country the wet season is the time to be feeding phosphorus supplements for best results. These supplements should commence with the first storms and continue while dry cattle are gaining weight. The recommendations include feeding urea and a sulphur source in the correct proportions with the phosphorus. These are required regardless of whether the supplement is a loose mix or a block.

Phosphorus deficiency stunts growth and depresses reproduction in growing heifers and first calf cows. Milk yields and consequent calf growth are depressed. Older cows are less affected.

In phosphorus deficient country, growing heifers and first calf cows should be particularly targeted for phosphorus management.

Phosphorus is most limiting in the wet season when cattle are gaining weight. Research has shown that intermittent feeding over the wet season is not nearly as effective as feeding for the whole of the wet season.

The recommended proportions are:-

- Breeders and other adults
  - 10 g urea for each 7 g of Phosphorus
- Growing stock
  - 5 g urea for each 7 g of Phosphorus

If producers prefer to feed one supplement only, the breeder levels are then recommended for growing stock.

The recommended level of supplements for lactating breeders in P deficient country are 7 g P (35 g Kynofos 21) plus 10 g urea plus 2 g Sulphate of Ammonia or 0.5 g Sulphur per breeder per day plus whatever is needed in your particular P deficient country to achieve those intakes.

Fertility levels in females can be improved over the wet season by combining weaning and supplementation.

Feeding wet season phosphorus

Feed either blocks or loose lick under a shed.

Regardless of whether feeding loose licks or blocks check the analysis for phosphorus and urea content. Calculate the required intake of supplement to get the correct amounts of ingredients.

Calculating P requirements:

100 breeders x 7 g P x 7 days = 4.9 kg P per week.

Calculating product requirements:

Need 4.9kg P

- feeding 8% P block or lick
  need 4.9 x 100 divided by 8 = 61 kg of 8% P product per week for 100 breeders.
- feeding 5% P block or lick
  need 4.9 x 100 divided by 5 = 98 kg of 5% P product per week for 100 breeders.

Some P supplements contain low or nil levels of protein or urea. These are not suitable as wet season P supplements for cattle.

Listed below are 2 simple mixes.

Very palatable mix	kg	%
Kynofos 18 or DCP	25	68
Molasses	6	16
Urea	6	16

(Mix the DCP and molasses first, before adding other ingredients. The molasses supplies enough Sulphur.)

Aim: 60g per head per day or
42 kg per 100 head per week

Not so palatable	kg	%
Kynofos 21	25	75
Urea	7	21
Sulphate of Ammonia	1.3	4

Aim: 45g per head per day or
31.5 kg per 100 head per week

Alan Laing
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Sponsorship of registration for land managers to the Australian Rangeland Society Conference, Alice Springs, July 2004

Half price registration is available to land managers meeting guideline requirements who attend the conference.

For more information about the conference, plus guidelines and application forms for sponsorship of registration, visit the website http://www.austrangesoc.com.au/conferences.asp or contact Robyn Cowley on (08) 89739750.

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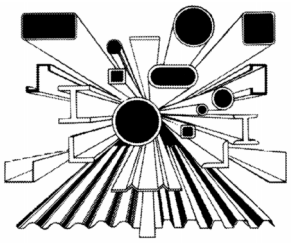

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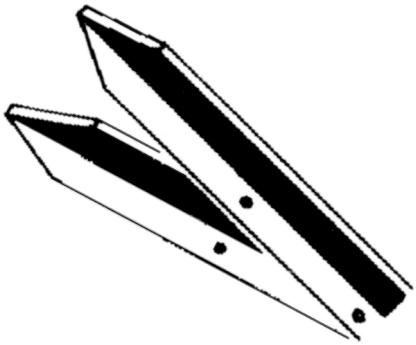

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