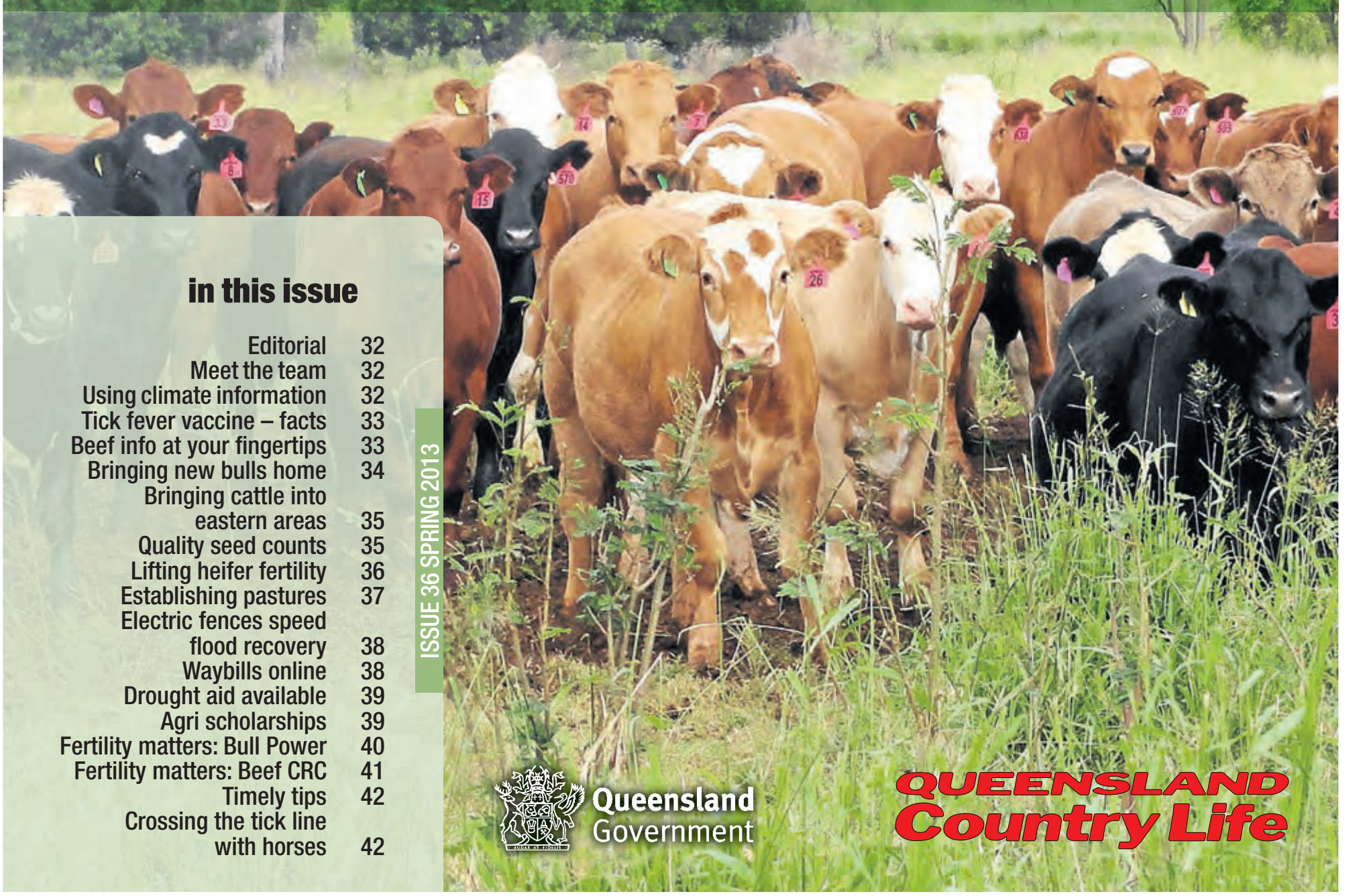
FutureBeef

Beeftalk

Taking stock of your future



in this issue

ISSUE 36 SPRING 2013

Queensland Government

QUEENSLAND Country Life

EDITORIAL:

Up to date info on tap for our beef industry

Drought aid, pastures, on-farm management issues in focus

Make suggestions with online survey

WELCOME to the first Beeftalk – a *Queensland Country Life* feature that aims to keep all sectors of the beef industry up to date on issues and practices – and ensure Australia stays at the cutting edge!

Unfortunately, dry conditions prevail and just over 50 percent of Queensland has been declared drought stricken.

Producers wanting to apply for the Drought Relief Assistance Scheme (DRAS) including the emergency water infrastructure rebate and land rent rebate should contact the Department of Agriculture, Fisheries and Forestry on 13 25 23.

DRAS claim forms and IDP applications can be accessed at www.daff.qld.gov.au.

This issue looks at tips for bringing new bulls and western-bred cattle home, including the new online waybill system.

Where the season has been kinder it is timely to consider pasture establishment options and using high-quality seed to increase the chances of success.

Check out the five goals for profitable heifers on **page 6**, and the practical electrical fencing example for flood recovery from Mick Seeney on **page 8**.

Dave McRae also explains things to consider when using climate data on **this page**.

We hope you enjoy this new look Beeftalk. Let us know what you think-you can provide suggestions for coming issues by completing the quick survey at www.surveymonkey.com/s/Beeftalk36.

At the same time, you can enter the draw for the Grazon feedback prize, kindly supplied by Nick Koch of Dow AgroSciences Australia Ltd.

The winner of the Beeftalk 35 edition Grazon prize was Eion McAllister from Toogoolawah.

Online versions of Beeftalk are still available for download or email. To receive the online version, please subscribe on the FutureBeef website www.futurebeef.com.au/sign-up

Happy reading!

The Beeftalk team

Climate risk data needs careful use in management

Looking to SOI and seasonal forecasts

WHEN I'm asked about how seasonal forecasts or climate information can be used in management decisions I refer to some key points or rules of thumb developed from producer feedback.

The first is to have a plan. This includes knowing what you want to use seasonal forecasts for, and where you will get information from.

It's also never a great idea to take a quick grab of information or a headline from the media and assume what you heard applies for your location. Accessing local information or at least knowing what the long-term median rainfall for your location is will help you interpret a forecast.

It's stating the obvious, but management decisions shouldn't be based entirely on one factor such as a climate or weather forecast.

Everything that could impact on the outcome of a decision (soil moisture, pasture type/availability, crop and commodity prices, machinery, finance, costs, timing rainfall etc) should be considered. For example, the level of soil moisture at planting is the major factor influencing crop yield or success.

A simple cost benefit analysis when making a major decision may also be useful. For example, what will I gain if I get the desired outcome? What will I lose (sleep, money, family relationships) if I do not get the desired outcome and what other options (risk neutral) are there? A part of this process is to help managers to be careful not to change from normal risk management to high-level risk taking based on one piece of information.

Often a seasonal outlook will only show a 50 percent chance of getting above median rainfall. This isn't fence sitting; rather forecasts do not always give a strong signal as to very wet or dry conditions.

In assessing climate forecasts as a management tool, consider the level of signal (using a tool such as Rainman) for the key decision times for your industry in your location. When using a climate forecast you should remember that the probability or percent chance of something occurring is just that – a probability.

For example, if there is a 70pc chance of recording more than 100 mm there is also a 30pc chance of recording less than 100 mm i.e. 70-30, 30-70. It does not mean that you will get 70pc more than 100 mm or 100 mm plus another 70pc.

For more climate-related information, updates on the SOI, to access the latest seasonal outlook map or rainfall and pasture growth maps go to www.longpaddock.qld.gov.au. I'm also happy to give climate risk presentations at meetings and field days.

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Meet the team

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Beeftalk team members from the Department of Agriculture, Fisheries & Forestry and beef producer member Carli McConnel. From left Felicity McIntosh, Roger Sneath, Damien O'Sullivan, Carli McConnel and Rebecca Farrell.

FutureBeef Beeftalk feedback ... 'we want you to have your say'

Please spend a minute to let us know your thoughts on Beeftalk as a way of keeping you up to date on current issues in the beef industry.

Do you find Beeftalk useful? ❑ Yes ❑ No

Your comments

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We use your feedback ideas and suggestions when planning the articles for Beeftalk. If you have any questions about beef production or pasture management, suggestions for topics you would like covered or novel ideas you'd like to see investigated, please list them below and we will endeavour to cover them in future editions of Beeftalk.

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Please send your replies to:
Beeftalk, DAFF, PO Box 118, Gayndah Qld 4625 or
Fax to 07 4161 1954 or
email your comments to felicity.mcintosh@daff.qld.gov.au

Win 5L Grazon Extra!

QC1635539

To go in the draw send feedback at www.surverymonkey.com/s/Beeftalk36
Winning entry drawn on 1st November.
Grazon Extra kindly donated by Dow Agrosciences.
Grazon Extra is registered for control of a range of environmental and noxious woody and herbaceous weeds as specified on the label.

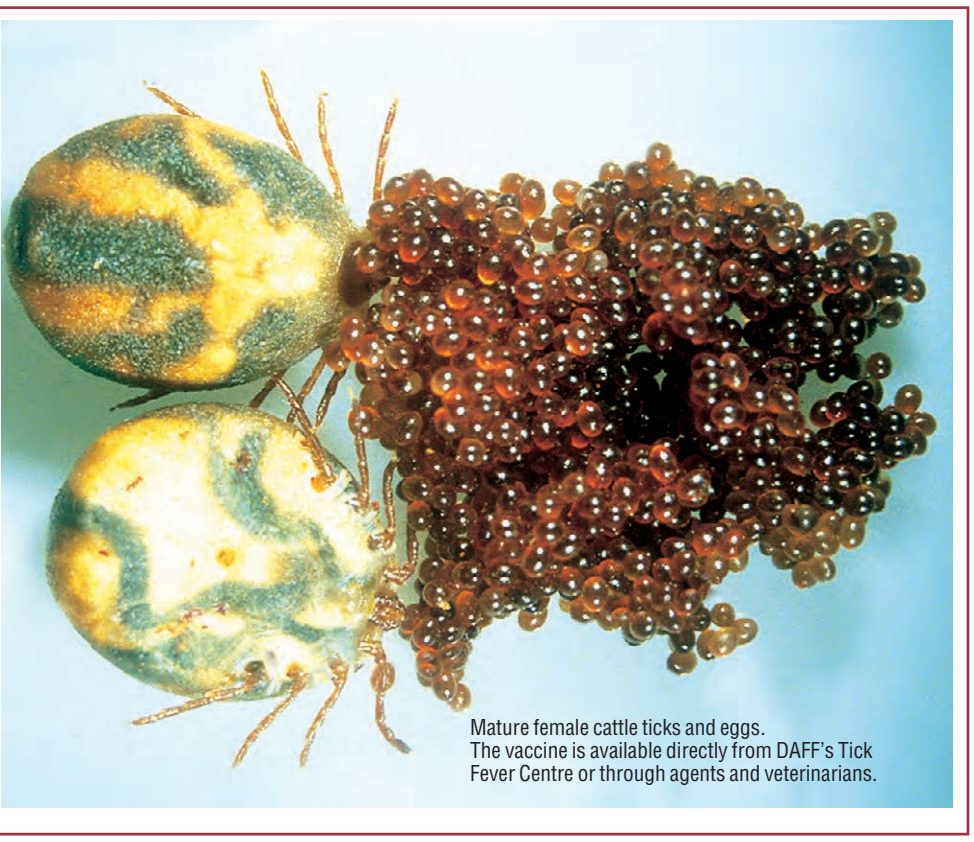
Tick fever vaccine – the facts

THERE has been some misinformation circulating recently about tick fever vaccine.

The facts are:

- Vaccination gives the most reliable and predictable control of tick fever.
- The vaccine is available directly from DAFF's Tick Fever Centre or through agents and veterinarians.
- The vaccine price was increased on July 1, 2013, to $4.27 per dose. In addition, there is a freight charge and a processing fee for orders fewer than 100 doses. It is important to consider that, unlike most other vaccines, the tick fever vaccine generally only needs to be given once (i.e. there is no need for an initial booster four weeks after the first dose or annual booster, so the cost is spread over the life of the animal).
- The vaccine is available all year round. It is produced every Tuesday and Thursday. On a few occasions, due to increased demand this winter (mainly due to drought movements), we have reached the maximum amount that we can physically produce per day (19,000 doses), and some orders had to be delayed until the next production day. This should be less of an issue now as we move away from the traditional busy season. There is no backlog or nine-week waiting period.
- Bear in mind, immunity to the vaccine is not instantaneous. Immunity to Babesia is present after one month, and to Anaplasma after two months, although the protective effect strengthens over the next few months. This means there will be a period where animals are not protected following vaccination. This does not matter if vaccinating weaners, but it is important for introduced older stock. Ideally, vaccination should take place at least two months prior to introduction to minimise risk. However, as this is often not possible, careful monitoring of introduced stock for the first couple of months should be carried out for early detection of illness and prompt treatment.
- The Tick Fever Centre, as part of Biosecurity Queensland's veterinary laboratory, offers a free tick fever diagnostic service. Please sample any suspect animals and submit to the Biosecurity Sciences Laboratory at Coopers Plains for confirmation of a tick fever diagnosis. Remember, it may not be tick fever, so a veterinary examination with a full range of samples will help achieve the correct diagnosis.

More information at www.daff.qld.gov.au – search for 'tick fever', or you can call the Tick Fever Centre on (07) 3898 9655 if you have any further questions or concerns.



Mature female cattle ticks and eggs.
The vaccine is available directly from DAFF's Tick Fever Centre or through agents and veterinarians.

FutureBeef harnesses latest technology

A world of information at your fingertips

DID you know you can sit in the comfort of your home or office and summon a world of beef information delivered electronically to your computer, iPad or smart phone? This is just one way the FutureBeef Program brings the latest research-based information to beef producers.

FutureBeef regularly runs webinars, distributes eBulletins and publishes material at www.futurebeef.com.au, and through social media channels, as well as working directly with producers at training workshops, information days, demonstration sites and field days.

Webinars are a great way to hear the latest information from anywhere in the world, plus they allow you to engage with the speakers through online polls and by submitting questions that can be answered by the presenters.

You can participate in a webinar using a computer (Mac or PC), iPad, tablet or smart phone.

To do so, you just need to register by going to the event's web page and entering your contact details.

A personalised email will then be sent to you by a clever system, though sometimes this will be put in your junk folder, so watch out for that.

> FutureBeef regularly runs webinars, distributes eBulletins and publishes material at www.futurebeef.com.au, and through social media channels.

The message includes the link you will need to click on to join the webinar at the specified time. It is often best to join 10 minutes early in case you need to download some extra files on your device. When the webinar starts, watch the presentation on the screen and listen either through your device's speakers or on the telephone. Webinars are usually free, with the only real cost being any data usage (usually fairly minimal) and if you need to call a long-distance number (though toll-free numbers are often provided).

A recent BeefConnect webinar about the Pasturefed Cattle Assurance System, brought to you by the QDAFF FutureBeef team and Beef Central, had more than 600 people across Australia register, and not one person needed to travel to participate.

While not everyone is able to access the live event, sessions are recorded and placed on the FutureBeef website, together with the presentation slides for anyone to view. To see all our webinar recordings and other multimedia presentations, go to www.futurebeef.com.au/resources/multimedia.

Maybe you're interested in receiving one of our free eBulletins? These email messages allow you to keep up to date with the latest information, news and events.

Just click the 'sign up' link on any page on www.futurebeef.com.au, enter your contact details and select which eBulletins you would like to receive.

You will then receive emails that include headlines and brief summaries of the stories.

Often you will be able to click on a link to read further information related to the story.

The www.futurebeef.com.au website is also your one-stop shop for beef information across northern Australia. It contains more than 300 pages of information, including videos and webinar recordings.

Check out the upcoming events, information on producer demonstration sites and contact details for all the FutureBeef staff. Use the search box to find information quickly and easily.

Social media is another great way to hear the latest news and views of interest to the northern Australia beef industry. Join the hundreds of people who have already engaged with us through Facebook and Twitter – just search for FutureBeef and you will find us.

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Ensure success with appropriate bull care

Look after new bulls right from start

Bringing your new bull home

WHEN purchasing a bull, care and handling after the sale can be as important as the purchase itself. Looking after your bull properly during the initial stages of its working life may ensure longevity and success within your breeding herd.

PURCHASE

Temperament is an important characteristic when selecting a bull. A flighty or aggressive bull will make handling difficult.

Note which bulls continually push to the centre of a mob, run around, or are unreasonably nervous, aggressive or excited.

At the sale, note any changes of temperament by individual bulls. Some bulls that are quiet in the yard or paddock may not like the pressure and noise of the auction and become excited.

Others that were excited beforehand get much worse in the sale ring and can really perform. Using the yard or paddock behaviour as a guide, rather than the temperament shown in the ring, may be your best guide.

Ask if the bull has been fertility tested. The Bull Breeding Soundness Evaluation (BBSE) is a nationally accredited test available from vets.

DELIVERY

When transporting your new bull, insurance against loss in transit, accidental loss of use or infertility is sometimes provided by vendors. Where it is not, it is worth considering.

AFTER-PURCHASE TIPS

- When purchasing, ask which health treatments he has received.
- Treat and handle him quietly at all times – no dogs, no buzzers. Talk to him and give him time and room to make up his mind.
- With more than one bull from different origins, you must be able to separate them on the truck.
- Make sure that the truck floor is covered to prevent bulls from slipping. Sand, sawdust or a floor grid will prevent bulls from being damaged by going down in transit.
- If you can arrange it, put a few quiet cows or steers on the truck with the bull. Let them down into a yard with the bulls for a while before loading and after unloading.
- Unload and reload during the trip as little as possible. If necessary, rest with water and feed.

Treat bulls kindly – your impatience or nervousness is easily transmitted to an animal unfamiliar to you and unsure of his environment.

> When the bull or bulls arrive home ... Never jump them from the back of a truck directly into a paddock – it may be the last time you see them.

If you use a professional carrier:

Make sure the carrier knows which bulls can be mixed together. Discuss with the carrier resting procedures for long trips, expected delivery time, truck condition and quiet handling. Give ear tag and brand numbers to the carrier and make sure you have the carrier's phone number.

If buying bulls from interstate, organise any necessary health tests before leaving and work out if any other requirements must be met before cattle can enter the state (dipping for ticks, for example).

When buying bulls from far away, you may often have to fit in with other delivery arrangements to reduce cost. You should make it clear how you want your bulls handled.

ARRIVAL

When the bull or bulls arrive home, unload them at the yards into a group of house cows, steers or herd cows.

Never jump them from the back of a truck directly into a paddock – it may be the last time you see them.

Bulls from different origins should be put into separate yards with other cattle for company.

Provide hay and water, then leave them alone until the next morning.

The next day, bulls should receive routine health treatments.

If they have not been treated before, all bulls should be vaccinated with:

- 5-in-1 vaccine.
- Vibriosis vaccine.
- Leptospirosis vaccine (in areas where leptospirosis exists).
- Three-day sickness vaccine (if in areas where three-day sickness is a problem).

Pay particular attention to preventing new bulls bringing vibriosis into a herd. Vibriosis, a sexually transmitted disease, causes infertility and abortions, and is most commonly introduced to a clean herd by an infected bull. These bulls show no signs of the illness. Vaccinated bulls are free from vibriosis, so vaccinating bulls against the disease should be a routine practice.

Vaccination involves two injections, four to six weeks apart, at the time of introduction, and then a booster shot every year. Complete the vaccinations four weeks before joining.

Consult with your veterinarian and draw up a policy for treating bulls on arrival and then annually. Bulls should be drenched to prevent introducing worms and, if necessary, should be treated for lice.

Horned bulls should be well tipped to allow easier working through yards and races. Plan to give follow-up vaccinations four to six weeks later.

Leave the bulls in the yards for the next day or two on feed and water to allow them to settle down with other stock for company.

A bull's behaviour will decide how quickly he can be moved out to paddocks.

MATING NEW YOUNG BULLS

Newly purchased young bulls should not be placed with older herd bulls for multiple-sire joining.

The older, dominant bull will not allow the young bulls to work much, and will knock them around while keeping them away from the cows.

Use new bulls in either single-sire groups or with young bulls their own age. If a number of young bulls are to be used together, run them together for a few weeks before joining starts.

They sort out their pecking order quickly and have few problems later. When the young bulls are working, inspect them regularly and closely.

MANAGING OLDER HERD BULLS

Older working bulls also need special care and attention before mating starts. They should be checked every year for physical soundness, testicle tone, semen quality and serving capacity or ability.

All bulls to be used must be free-moving, active and in good store condition.

Working bulls may need supplementary feeding before the joining season to bring up condition.

All bulls should be drenched, treated for lice, and vaccinated with 5-in-1 and for vibriosis annually.

They may need vaccinating against leptospirosis and three-day sickness in some areas.

DURING MATING

Check bulls at least twice each week for the first two months. Get up close and watch each bull walk; check for swellings around the sheath and for lame ness.

Have a spare bull or bulls available to replace any that break down. Replace any suspect bull imme diately. Rotate bulls in single-sire groups to make sure that any bull infertility is covered. Single-sire joining works well but it has risks.

The bulls must be checked regularly and carefully, or the bulls should be rotated every one or two cycles.

Bulls are a large investment for breeding herds and they have a major effect on herd fertility. A little time and attention to make sure they are fit, free from disease and actively working is wise.

TAKING SOUTHERN BULLS NORTH

Ensure bulls are in good condition and allow them time to adapt to their new environment before commencing their working life.

If possible, a break of three months is advisable before you set your bull to work.

The cooler months are an ideal time to purchase and introduce bulls, allowing them plenty of time to acclimatise.

CHANGE OF FEED SOURCE

When inducting new bulls into your herd, consider their feed source.

Have you taken an animal which has been supplemented on grain straight to a dry pasture?

Animals should be gradually changed over to their new feed to ensure they do not lose condition.

This may involve using supplements, which could include dry lick/urea blocks.

MANAGING CATTLE TICKS

For ticky areas, bulls should be vaccinated prior to transport and given another booster afterwards. Remember males are more susceptible to ticks than females.

Sources: www.dpi.nsw.gov.au and www.angusaustralia.com.au

NABRC Medal Winners committed to northern Australian beef industry

NABRC Medal Winners display depth of commitment to northern Australian beef industry

THREE beef industry contributors were presented with NABRC medals recently at the Northern Beef Research Update Conference held in Cairns.

The medals acknowledge the achievements of people in North Australia who excel in three fi elds:

- communication/extension - John Bertram
- research and development - Dr Stu McLennan
- production (producer medal) - Paul Smith

John Bertram has devoted the past thirty nine years to the northern beef industry in the fi eld of practical genetic improvement and bull selection.

John joins past extension medal winners Bernie English (QDAFF Mareeba) and Bob Shepherd (QDAFF Charters Towers) in honour for their contributions to the beef industry.

Dr Stu McLennan has dedicated his career to beef nutrition research for northern Australia. Research highlights include being part of the team that developed M8U and supplementing regimes for urea which now underpins the northern beef industry.

LEFT: Chairwoman of the central Queensland regional beef research committee Libby Homer with John Bertram.

RIGHT: Chairwoman of the central Queensland regional beef research committee Libby Homer with Stu McLennan and NBRUC Chairman Ralph Shannon.

The recipient of the Producer medal, Paul Smith of "Tieyon Station", Alice Springs, also acknowledges the extension efforts of John Bertram who worked with his father during the late '80s on station AI programs as a catalyst for his being involved in research, development and extension activities.

Amongst many achievements Paul is highly commended for his role in the ground breaking heifer research that was carried out at Tieyon Station from 2005 through to 2012.

- Source: NABRC

Bringing cattle into eastern areas

Discussing potential pitfalls

SO many people are heading out to the western sales to bring home a bargain, or the western breeders are trucking cattle into local sales.

Unfortunately, sometimes they are sold as local cattle just because they have been in the area for a couple of weeks, which leads to a diffi cult time for buyers and the cattle.

Some of the young cattle are weaned onto the trucks and when you get them home they may have been off their mothers and had little or no feed for some days.

This can lead to many problems as they adjust to your feed.

The main thing is to have the hay racks full of good quality grassy hay and the water troughs full of clean water.

Unload them and once they are settled down, leave them alone for a few hours to make sure they have a feed and a drink.

After that you should be able to see that they are fuller and hopefully camped in the yards chewing their cuds.

If you have a few not eating, it is generally advisable to isolate them and maybe give them different hay to try and get them feeding, or even let them out into a secure paddock with a few of your own quiet cattle if you have a well-grassed one handy.

However, remember they may not have had much handling.

The vendor should be able to tell you what vaccinations they have had, but as a general rule it is safer to presume they have had none and start to treat them as soon as possible.

I would suggest, as a minimum, drench and 5-in-1. Remember this needs a booster shot before full immunity is achieved.

If you are in a ticky area, vaccinate for tick fever using 3-germ blood. Then you must watch them to check for reactions to the blood.

The insert in the package will give you the details of when those reactions may occur.

While you are working them in the race and head bail, it is important to cross-brand them with your brand, and also ear tag them with tags that either show your property name, or your name and phone number, so if they get out they can be identified.

If the cattle were bought from the saleyards, the NLIS tag numbers will be updated on the national database for you – otherwise you will also need to transfer the numbers on the NLIS database for traceability.

If you have bought pregnant cows, speak to your vet or stock inspector about the advisability of giving them blood while they are in calf.

Be very aware of pestivirus, as either they may be naïve (not exposed to it) and you have carriers of it on your property, or they could have a carrier in that mob and your females may be naïve. Either way, you could have trouble with abortions, so speak to your vet, stock inspector or DAFF to fi nd solutions.

Brought in females also need vaccinating with 7-in-1 as the diseases covered by this thrive in our wetter areas.

Another killer of brought in cattle is lantana, so be aware that cattle that have never seen it do seem to think it is edible.

If they eat lantana, cattle become sick, with the skin breaking out around their noses and mouth, and a reaction to sunlight.

Your vet can help with treatment, but even with the best of care, fatalities will occur.

Make sure any lantana in the paddocks where you will be running new cattle has been sprayed and is dead before they are allowed in.

Your own home-bred cattle seem to cope with lantana better than any brought in cattle.

The cattle may be cheaper, but there are plenty of costs in preparing them for life in the eastern areas, so work out a budget.

Locally bred cattle that you have bought before may be a better option.

Carli McConnel, Mt Brisbane, Esk,
Phone: (07) 5426 0169,
or email carlimcconnel@westnet.com.au

Quality and purity counts

Purchase only high-quality seed

Why pure live seed (PLS) analysis is vital

A DENSE pasture sward cannot be established if a high proportion of the seed sown will not germinate.

It is essential that producers know the germination rate and purity of the seed purchased.

All commercial seed should have an independent laboratory analysis of percentage germinable seed, percentage hard or dormant seed (seed that is viable but will not germinate immediately) and percentage purity (impurities are weed seeds and other vegetable matter that may be present).

You can test seed yourself, especially if it is your own stored seed or if purchased from other farmers.

> In some cases, the cheapest seed to purchase may end up being the most expensive.

Grass seed sample A	*Grass seed sample B*
Costs: $15/kg; Germination: 20%; Purity: 80%	Costs: $18/kg; Germination: 40%; Purity: 90%
PLS% = (20 x 80)/100 = 16% You need 6.25kg to give 1kg PLS (100/16 = 6.25) Real cost = $15 x 6.25kg = $93.75/kg PLS	PLS% = (40 x 90)/100 = 36% You need 2.78kg to give 1kg PLS (100/36 = 2.78) Real cost = $18 x 2.78kg = $50/kg PLS

When purchasing seed from other producers and there is no lab analysis, be aware that germination could be good or bad, and the sample could contain weed seeds that you don't want on your property.

Using the information from the seed analysis, you can determine the 'pure live seed' percentage (PLS%) of the batch of seed you are purchasing.

This will help you choose the best value seed available and work out the required planting rate.

If germination and purity are low, then higher sowing rates are needed and vice versa. Aim to sow about 1kg of PLS/ha. To determine the percentage of pure live seed in the sample, use the formula: PLS% = (%Germination x %Purity)/100.

In some cases, the cheapest seed to purchase may end up being the most expensive.

ABOUT THE TABLE

Germination: To self-test germination, place a minimum of 100 (preferably two or three lots of 100) randomly selected seeds on moist cotton wool or between the layers of moist paper towels, folded hessian bag or equivalent and keep moist.

After fi ve days in warm conditions (longer in cool conditions), count the numbers germinated.

Although there are no minimum standards legislated for pasture seed, grass seed germination should range from 20 to 50pc, and the germination of legume seed should be 30 to 60pc for small seeded legumes and 75 to 90pc for large seeded legumes and medics.

Purity: Seed samples will always contain impurities such as straw, chaff, other seeds and soil.

The purity of the sample is the percentage of the sample that is seed of the chosen species, and is determined by weight after physical separation of seed from other components.

Impurities range from as low as 1pc for some of the legumes to as high as 40pc for some of the grasses.

To determine the real cost of pasture seed, the results of germination and purity tests can indicate the amount of seed required for successful pasture establishment. Without this information, costs can be high and success minimal.

Lift heifer fertility, grow profit

Give your heifers the best start

Setting lifetime goals

GETTING heifers off to a good start has lifetime reproductive benefits. Conversely, a bad start has lifetime consequences.

Selecting the right heifers, growing them well and getting them bred early in their first breeding season improves lifetime calf production and profitability.

General goals for heifers are to:

1. Reach puberty at an appropriate time for your country. That is, by 12-14 months of age for two-year-old calving or 24-26 months for three-year-old calving.
2. Be in good condition and structurally large enough (weight, frame, pelvic area).
3. Have a high conception rate in a short time frame (i.e. 6-12 weeks).
4. Rebreed in a timely manner.
5. Raise a good calf to weaning.

Heifers not meeting appropriate goals should be sold. Culling will improve herd efficiency and genetics; however, the greatest genetic progress for the breeder herd comes with balanced bull selection using Estimated Breeding Values (EBVs) for fertility (e.g. days to calving, birth weight, calving ease, scrotal circumference) and performance. Heifers are generally managed to calve first at either two or three years of age, depending on the growth rate possible with the land type. Calving at two is more profitable if nutrition, genetics and management allow it.

Good management of replacement heifers begins with having mothers in good condition at calving. – Photo courtesy: TIM EMERY, QDAFF.

HITTING THE GOALS: FROM BIRTH TO WEANING

Good management of the replacement heifer begins with having her mother in good condition at calving. This is achieved with appropriate stocking rates, strategic supplementation and weaning management. The cow in good condition provides more colostrum and milk for a healthy growing heifer calf, and she will go back in calf earlier.

WEANING TO BREEDING

Good growth during this period is critical to improve conception rates, to reduce calving difficulties (dystocia) and for long-term reproductive performance. Liveweight at mating has the greatest effect on heifer fertility. Conservative stocking and good pasture in heifer paddocks are the cheapest ways to achieve high growth. Heifers should be segregated from the breeder herd, grazed on the best paddocks and often need supplements over the post-weaning dry season to reach suitable mating weights. Heifers of modern cattle typically reach puberty at an average of 330-350kg, with variation of up to 100kg either side of this.

Therefore, growth has to be managed to achieve an average of near 380kg well before the end of maiden mating to get high pregnancy rates. Heifers selected for earlier age at puberty will typically achieve puberty at lighter weights, thus increasing return from inputs aimed to increase early lifetime growth.

Say heifers average 200kg at six months of age. To gain 130kg in nine months, they need to gain about 500 grams per day.

Good nutrition from weaning to joining is also essential to maximise pelvic growth. If heifers receive a nutritional setback at this stage, they may not recover with respect to pelvic area. For more information on managing dystocia, see Beeftalk 35, pages 22-26, available on the FutureBeef website.

Besides 5-in-1 vaccination, heifers may also need leptospirosis, vibriosis, pestivirus, and in country where licks (e.g. phosphorus) are routinely fed, botulism. Consider parasite control if known to be a problem (e.g. more intensive, high-rainfall areas).

BREEDING TO CALVING

In regions with high annual growth, consider mating more heifers than required 20 to 30 days earlier than the cow herd. 85pc pregnancy rates are achievable in six weeks for heifers in good condition and meeting target mating weights. A tight joining period such as six to 12 weeks will identify those that can conceive early. Pregnancy testing six to 10 weeks after the end of mating identifies empty heifers for selling.

Cull heifers with poor temperament as it is quite heritable, and these animals cause problems (injury risk, handling, repairs) and reduce performance and meat quality. Heifers weighing more than 450kg and in good condition at calving will have higher chances to cycle in time for mating.

HEIFER SELECTION, GENETIC IMPROVEMENT

It is impossible to visually assess fertility in unmated heifers. It is desirable to select heifers from dams that have a history of producing a heavy weaner every 365 days, and especially in their first two breeding seasons.

Select those that conceive early after joining, successfully calve, reconceive in time and raise a weaner. The largest and oldest heifers will usually reach puberty earliest and are from dams that conceived early in the breeding season.

Beware extremes in mature size. Heifers with higher mature size often need to be heavier and older to reach puberty and will have higher maintenance requirements throughout life.

Care is needed with bull selection. An unbalanced focus on high growth rate can increase cow mature size with higher weights to reach puberty. Instead select for high early life growth rate but moderate mature size.

Also balance bull selection by using fertility EBVs, ensuring high sperm motility, high percent normal sperm, above average scrotal circumference for their weight and breed, and selecting bulls from dams with good reproductive records.

For more information: 'Heifer management in northern beef herds', MLA, phone 1800 023 100 or free download from www.mla.com.au; 'Selecting and managing beef heifers', NSW Primefact, www.dpi.nsw.gov.au

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Increase success rate

Successful pasture establishment on farming lands

Treating pasture sowings as a crop improves success rates

Producers' checklist

THE chance of successful pasture establishment is greatly improved by treating sown pastures like a crop. While we have little or no control over variables such as follow-up rain after sowing, observing the following checklist will increase success rates.

- Fallow seedbeds to control weed seed banks and accumulate soil moisture. Aim for at least 30-50cm of wet soil.
- Prepare an appropriate seed bed (don't plant on uncultivated or sealed surfaces).
- Select grasses and legumes that are adapted to your soil type and region.
- Use good quality seed and know the percentage germinable seed.
- Don't skimp on the sowing rate to reduce costs.
- Sow small pasture seeds into the soil but no deeper than 5-10mm.
- Use press wheels to improve soil-seed contact.
- Alternatively, if necessary, drop seed on top of a freshly cultivated rough surface and harrow or roll to cover (make sure the seed is not buried too deep).
- Plant at the correct time – tropicals in mid/late summer, temperates in autumn/early winter.
- Avoid early grazing.

PADDOCK CONDITIONS

Planning should start at least 12-18 months ahead. Which paddocks are to be sown, what is the soil type and fertility, what is the chance of waterlogging or flooding, how bad are the weeds, are there any residual herbicides with a plant-back period? If the soil is hard-setting or it is ex-cultivation, you may need to rip 10-15cm deep on 60-90cm centres to increase water infiltration, and then grow a crop that leaves a good stubble cover.

If annual weeds are a problem, you may need to grow grain or forage crops for two to three years to reduce the weed seed bank. Store water before sowing the pasture. For a good chance of success, accumulate at least 30-50cm depth of moisture (near field capacity) in the top 60cm of soil, with the top of the moisture band being within 5-7cm of the soil surface.

WEEDS

Annual weeds quickly take up moisture, nutrients and smother young pasture seedlings. Weed seed banks in the soil can be reduced by more than 90pc in two to three years with cropping if no new seed is allowed to fall and if the seed remains in the top 2cm of the soil.

Herbicides are therefore better than cultivation. Herbicides also reduce water loss through evaporation, and minimum tillage leaves crop stubble.

Post-emergent herbicides will control some weeds, although options to control broadleaf weeds in legume stands are limited and generally expensive. Consult agronomists.

Grazing can control or reduce more palatable weeds and slashing can be used to limit seed set of weeds that cannot be controlled by other means.

SOWN PASTURES FOR SUSTAINABLE LAND USE

Growers should grow a grass plus a legume or a legume alone (for a short pasture phase) to achieve high animal production or soil fertility restoration and maintenance.

A grass alone will have a positive effect on soil organic matter, but to increase the amount of nitrogen in the soil, a legume alone, or a grass plus a legume, are required. Check soil phosphorus and sulphur levels required for healthy legumes.

SEED SPECIES AND QUALITY

Check which grass and legume species are best adapted to your conditions. Don't select unsuitable species just because it is cheap or the only one currently available.

Buy high-quality seed with a current germination certificate that lists the purity, percent germinable, dormant or hard seed.

SOWING RATE

Pasture grasses are generally sown at 2-5 kg/ha depending on germinability (aim for 1 kg of pure live seed/ha) of bare grass seed (uncoated) and legumes at 1-8 kg/ha.

These low sowing rates are not easily achieved with crop planters, and pastures are often mixed with cracked grain, sawdust or fertiliser to reduce the flow. Grass and legume seed should not be left in contact with fertiliser overnight.

If sowing a mixture of grasses, the minimum for any individual species should not be less than 20pc of the seed mix per hectare.

Seed coating reduces the number of seeds per kilogram by at least two-thirds (with a 2:1 coat ratio). Either sow bare seed or increase the seeding rates proportionally.

BEST TIME TO SOW

The old saying is to 'Plant your pastures just before two weeks of gentle rain'. You cannot control this, but always check the long-range local weather forecasts to maximise your chance of success. The 'Australian Rainman' computer program can identify the best times for certain rainfall conditions in your district. Generally the highest probabilities of obtaining effective follow-up rain for pasture establishment is in January and February. The SOI can also indicate years when the probability of obtaining better rainfall is higher.

As pastures are difficult to establish, it is generally preferable to sow them in La Niña years (with higher probability of good rainfall) than in El Niño years (with lower probability). In this region, tropical grasses can be sown during the spring and summer months once there is an adequate profile of moisture, and issues such as weed control have been addressed.

Weeds can be worse in spring plantings and hot, dry spells from October to December often kill young seedlings.

Rainfall is often more reliable in January-February, though don't plant too late to reduce the chances of the young pasture being frosted. Tropical legumes can be sown with the grasses, but winter legumes are sown in late autumn or early winter.

UNDER-SOWING WITH COVER CROPS

Cover crops are beneficial in reducing weeds, though they compete for moisture. They are more likely to be used when sowing temperate rather than tropical species such as medics prior to sowing grass in the following summer, or establishing pure legume swards of lucerne or snail medic.

Sow the cereal at only 15-20kg/ha to reduce competition and allow the legumes to grow and set seed. Sowing medics in autumn after grasses have established in summer is unreliable, as it relies on good autumn and winter rain to be successful, due to the grass extracting soil moisture, which leaves the soil dry before seedlings can germinate.

SEED PLACEMENT

More grass seed is lost by being planted too deep than too shallow. Small pasture seeds must have good soil moisture contact to germinate and grow, which is best achieved with a fine, compact seedbed. Loose, 'fluffy', non-compacted seedbeds usually result in the seed being sown too deep.

Loose seedbeds also dry more quickly and often result in poor establishment. Small pasture seeds are best sown no deeper than 5-10mm. Exceptions include the larger-seeded purple pigeon grass, bambatsi and lucerne, which can be sown about 20-25mm deep.

Placing the seed into the soil can greatly improve establishment, as long as it is not planted too deep.

Shallow planting followed by press wheels, rollers or very light harrowing should give good results, but so will broadcasting seed onto the surface of a freshly cultivated soil, followed by rolling, light harrows or a prickle chain.

Seed should not be broadcast onto an undisturbed soil with a surface crust. If there is a good profile of moisture, the surface can be cultivated and left rough; rain after sowing will wash fine soil particles and the seed into the mini-furrows to provide a good micro-climate for establishment.

MACHINERY

While some pasture planters have been developed, most sowings are still made with crop planters such as combines and air seeders. These are designed for larger crop seeds with less demanding requirements for establishment. Consequently, the opportunity to place pasture seed at a precise depth of 5-10mm in moist soil is not good. In the absence of suitable machinery, seed is often sown 'dry'.

ROLLING

Rolling after sowing will improve seed-soil contact and germination in most circumstances.

While tyre rollers are adequate, the advantage of press wheels is that only the row is rolled and the risk of erosion is reduced. The finer the tilth before sowing, the easier it is to achieve good seed-soil contact.

PELLETING AND OTHER SEED TREATMENTS

Legumes are often pelleted as the seed is small and this helps achieve the correct sowing rates and improves nodulation (if sown soon after the coat is applied).

If suitable rhizobia are not in the soil (because the type of legume has not been grown there before), inoculation of the seed is essential. Seedlings will be more productive when effectively nodulated.

Fluffy seed and coated seed.

Alternative methods of introducing the bacteria are being developed to improve the survival of rhizobia.

Fluffy grass seeds flow through machinery more easily after pelleting. Pelleted seed is supposed to provide more favourable conditions for germination, but growers often balance this against the increased cost of higher sowing rates. Seed can be treated with insecticide to deter seed-harvesting ants.

GRAZING MANAGEMENT

Grazing should be withheld until seedlings have developed a strong crown and secondary roots, and set some seed. When it is time to graze, a quick grazing using a reasonably high stocking rate is preferable to a long grazing with few stock. With a bigger herd the effect of grazing is spread over most of the plants in the pasture, and this will benefit the more palatable plants such as lucerne. Both sown and native pastures can remain productive with good management.

Wet season rest or spell the pasture on a regular basis and do not use more than 30-40pc of the annual pasture growth. Feed budgeting will help reduce overgrazing.

Grasses are most susceptible to overgrazing when they are actively growing in spring or after a drought; allow 10-15cm of new leaf before grazing. The plants are less susceptible when dormant during winter, but overgrazing then reduces ground cover and water infiltration when it does rain.

For more, Google and download: Pastures in farming systems, sustaining profit and the environment (LeyGrain manual,136 pages, 6.4 Mb); Pasture establishment for groundcover and productivity (QMDC, 4 pages, 144 Kb); Integrating pastures into cropping systems (Grain and Graze II, 20 pages, 1.6Mb).

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Innovative fencing for floods

Hot-wire dividers prove handy tool to speed flood recovery

Mary Valley farm shows way

ELECTRIC fences are changing the fencing landscape on our Mary Valley farm, Benrien. Situated 20 kilometres north-west of Gympie at Sexton, the farm consists of 80 hectares (200 acres) of prime river flats and 60ha (150 acres) of undulating country which is invaluable in the floods. The farm has a 3km frontage to the Mary River.

With the help of my wife Donna and my youngest son, Ben, we run Benrien as a small cattle operation, carrying around 100 breeders and 15 replacement heifers. We purchased the property 11 years ago. It was previously run as a dairy farm.

With a background of larger family cattle properties in the North Burnett, my concept of fencing was that of four-barb wires with wooden posts at a spacing of 5 metres. I had great admiration for my father, his brothers and my grandfather who fenced the hard mountainous country using basic tools – crow bar, shovels and axes – to construct miles of fencing.

When we purchased Benrien, the fencing was mainly four-barb, 5-metre spaced, wooden post fencing. Electric fences were used, but mainly for strip grazing associated with the dairy enterprise. Our property has a good set-up for electric fencing because the homestead and dairy complex are centrally located.

Electric fences started to become an important management tool in our early years on the farm when we started having trouble with a neighbour's cattle crossing the river to graze our pastures. The river forms the boundary between the properties. Our early years were dry and it was

Electric fencing may not be pretty, but plays a valuable role – particularly when pastures on a property are recovering after floods.

very difficult to keep the neighbour's cattle out. Fencing along the river was makeshift, usually consisting of two or three-barb wires and old steel posts. Because of the nature of the river, we were hesitant to put the time and expense into new fencing that would likely disappear in the next flood.

The solution was a hot wire – electric fencing consisting of only one wire, and steel posts were easily and quickly constructed along the river and for some parts in the water. This worked a treat. The neighbour's cattle only needed one hit and had respect. We ended up running electric fencing the length of the river, criss-crossing it from one side of the river to the other.

From this beginning we were looking more towards the hot wire to replace existing fences or subdivide larger paddocks for better pasture use.

Electric fences are cheap and so easy to construct. Electric fence on Benrien consists of either one or two wires with 1.7m (5'6") steel posts as supports and wooden strainer posts. Steel posts are spaced a maximum of 15m apart and we are presently experimenting with a larger spacing.

Putting up the electric fence requires little machinery – just hand-held post drivers and the old crow bar and shovel are all we use.

We have found a huge benefit using the electric fencing on the flood plain. Over the past three years we have had more than eight major floods, which means between 120 and 160 acres going under water each time. What a mess this makes of the traditional barbed wire/wooden post fencing. Rubbish, trees, mud and the occasional old fridge find their way into the barb. The posts are lucky to stay upright, often ending up at a 45-degree angle.

We've found having electric fencing speeds up the recovery after a significant flood. In high-flow areas we install only one wire and posts are only driven 150mm into the ground. As soon as we know a flood is possible, it is only a matter of dropping the wire on the ground and walking along and removing the posts. With minimal clean-up and a little sweat, the fence can be standing again in no time after the water recedes.

Cattle learn to respect electric fences very quickly. We do little in terms of specific training to teach cattle about the hot wire – they seem to learn themselves.

Cattle that are born here learn respect for the hot wire as calves and maintain this respect for life.

Brought-in cattle are always inducted into the paddocks where fences are highly charged and with two wires. I find that keeping the electric fence with the correct charge eliminates any problems with cattle walking through. I carry a digital voltmeter with me and check the fences regularly.

Even with all the benefits of electric fencing on our farm, I admit I still prefer the aesthetic appearance of the barb wire traditional fencing. From my early years on those large pastoral properties I learned to picture traditional fences as part of a farm's landscape.

But over the years this picture has slowly been losing its appeal, and when it comes to the crunch electric fencing will win out.

As the old traditional fences here need replacing, electric fences will become our major form of fencing.

Article kindly reproduced from Codline Newsletter.

Online waybills are way faster

Smart form system benefits

LIVESTOCK owners can now take advantage of a new electronic waybill.

It is a legal requirement that a completed waybill or an equivalent document, for example National Vendor Declaration (NVD)/Waybill or PigPass, accompany travelling stock.

A waybill identifies the owner of the stock, describes the stock being moved, and provides details of the movement.

Up until now, livestock owners have manually filled out forms in a printed waybill book purchased from the Department of Agriculture, Fisheries and Forestry (DAFF) or requested single waybills.

Biosecurity Queensland has moved to an online smart form system, which will be a more convenient option for accessing, filing and distributing waybills.

The electronic waybill is part of the Queensland Government's ongoing commitment to reduce red-tape. Benefits include:

- Round-the-clock access for users
- Cost-savings compared to purchasing hard-copy waybill books
- Electronic storage of movement records
- Up-to-date forms in use at all times.

All livestock owners are encouraged to move to the new online process.

It's important to note that producers under the Livestock Production Assurance (LPA) program still require the NVD/Waybill to maintain LPA accreditation.

This is an industry requirement for livestock sales.

The electronic waybill can be found on the Australian Business Licence and Information Service (ABLIS) and is available online at: https://forms.business.gov.au/aba/qldgov3/waybill.

ABLIS is an online service that helps you find the government licences, permits, approvals, registrations, codes of practice, standards and guidelines you need to know about to meet your compliance responsibilities from all levels of government.

ABLIS works in conjunction with the Australian Business Account (ABA).

The ABA is an online service provided by the Federal Government to help businesses set up, expand and manage their business in relation to government licences, permits and registrations.

An account can be created by a current business owner or someone intending to set up a business.

Account holders can take advantage of completing the waybill online, pre-filled with their details. Where all parties have the appropriate technology, for example email, the waybill can be electronically transferred to the necessary parties as opposed to them being provided with a paper copy for record keeping purposes.

Hard copy waybills are still available by calling the customer service centre on 13 25 23 or by visiting your local Biosecurity Queensland office.

For more information on livestock movement requirements and waybills, visit www.biosecurity.qld.gov.au or call 13 25 23.

Follow Biosecurity Queensland on Facebook and Twitter (@BiosecurityQld).

LEFT: Roger Sneath, Kiri Broad and Tim Emery

South-west beef team here to help

DID you know the FutureBeef South-west Beef Team is comprised of Tim Emery (Roma), Kiri Broad (Roma) and Roger Sneath (Toowoomba). The team is currently working on a number projects aimed at increasing the profitability and sustainability of beef businesses.

In the Climate Clever Beef (CCB) project a dozen businesses in the Maranoa-Balonne are trialling the integration of practices to increase soil carbon and reduce greenhouse gas emissions while maintaining productivity, along with collecting invaluable stocking rate information.

The High Output Forage Systems Project project is assessing the relative profitability of oats, forage sorghum, leucaena and buffel grass to finish cattle near Taroom.

Although the Finishing Systems Producer Demonstration Site (PDS) at 'Bannockburn' Bell officially wraps up in October, the numbers have been crunched providing some key findings for producers to consider.

The Testing Management Options (TMO) workshop helps graziers better understand the economics of their current business position and alternative enterprise and management options. The Stocktake workshop supports landholders in grazing land management through monitoring —we're more than happy to give you a rundown of the new StocktakePlus smartphone App.

EDGEnetwork® workshops (Business, Nutrition, Grazing Land Management and Breeding) can be organised locally according to demand.

If you'd like to find out more about these projects and workshops, be kept in the loop about upcoming events, or simply want to chew the fat about anything beef related, please give us a call or email.

You can also find great beef information at www.futurebeef.com.au, or on our Facebook page: South-West Queensland Beef-Team.

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Drought aid available

Services offer business, personal and family help

THE Department of Agriculture Fisheries and Forestry Queensland (DAFF) offers primary producers a range of drought services, including financial assistance, livestock nutrition and animal welfare information and business management strategies. More information is available on 13 25 23, email callweb@daff.qld.gov.au or visit the website at www.daff.qld.gov.au/environment/drought.

FINANCIAL ASSISTANCE

Department of Human Services (formerly Centrelink): drought and farmer assistance hotline 13 23 16. Income support, transitional farm family payment, assistance for isolated children.

Rural Financial Counselling Service: 1800 686 175 for free rural financial counselling.

QRAA: 1800 623 946 for farm finance, concessional loans, productivity loans.

Drought Relief Assistance Scheme (DRAS): 13 25 23 provides freight subsidies on fodder and water transport during drought and transport of animals returning from agistment and animals purchased for restocking after drought. DRAS also gives a rebate on water infrastructure purchased for emergency animal welfare needs.

Department of Agriculture, Fisheries and Forestry (Federal Government): for farm management deposits www.daff.gov.au/agriculture-food/drought.

Department of Natural Resources and Mines: Contact 13 74 68 for hardship with rent.

Department of Transport and Main Roads: Contact 13 74 68 School Transport Assistance Scheme (STAS) for financial assistance transporting children to school. Assistance may be available for the payment of fees and permit requirements, including vehicle inspection fees, drought road train permits, pilot escorts and vehicle height limits when transporting machined baled hay.

Department of Energy and Water Supply: Contact 13 43 87 for electricity rebates or concessions.

Ergon Energy: Contact 13 10 46 for drought relief rebates or concessions.

Legal Aid Queensland: 1300 65 11 88 for rural legal services to Queensland producers with severe debt- problems or in dispute with lenders, or otherwise facing financial hardship with their farming business.

The Telstra bill assistance program: for short-term emergency relief to residential customers if you are unable to pay your Telstra home telephone bill. Administered by national welfare organisations including Anglicare, Salvation Army, St Vincent de Paul and The Smith Family. Contact your nearest branch.

SOCIAL AND COMMUNITY SERVICES

Lifeline: 13 11 14, 24-hour crisis counselling line for individuals and families.

The Bush Connection: Contact (07) 4639 7897 free confidential support and referral. For personal support, identifying options, advocacy, in crisis situations.

Salvation Army: Contact 1300 363 622 for telephone counselling 24 hours a day, 365 days.

Relationships Australia: Contact 1300 364 277 for confidential counselling and family support services.

BeyondBlue: Contact 1300 224 636 for help with personal issues, depression or anxiety.

Kids Helpline: 1800 55 1800 – a national 24-hour phone counselling service for children and young people (ages five to 18).

Women's Infolink: Contact 1800 177 577 – free, confidential information and referral service Queensland-wide to support women.

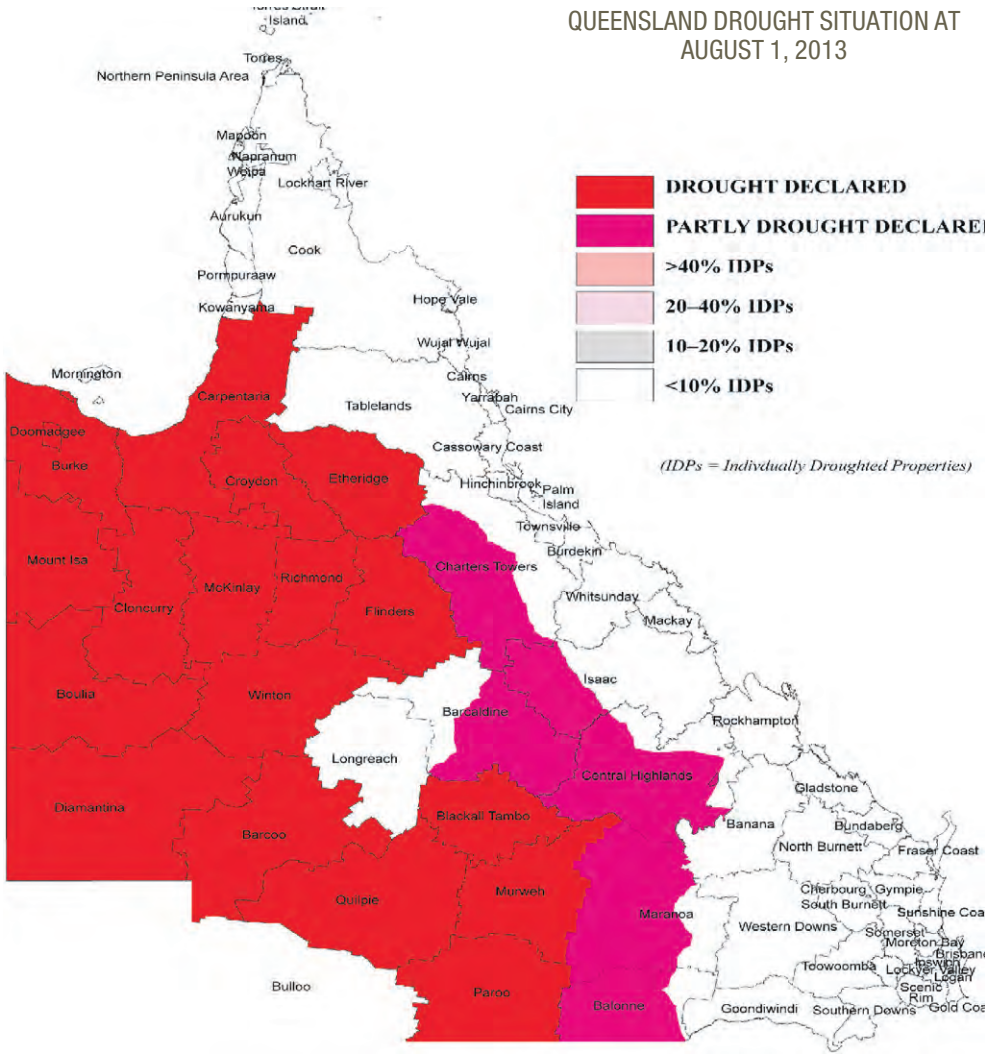
Mensline Australia: Contact 1300 789 978, to help men with relationship issues.

Frontier Services: Contact 1300 787 247 provides health, family, community services and pastoral support in remote Australia. Outback Links places volunteers with rural and remote families for short periods 1300 731 349.

Other assistance: Local doctors, clergy, hospitals or community health centres can also help.

CLIMATE AND MANAGEMENT INFORMATION

- The current Queensland drought situation report, map and seasonal outlooks are at www.longpaddock.qld.gov.au/queenslanddroughtmonitor.
- DAFF 13 25 23 and FutureBeef have resources on feeding and management of livestock during drought, strategies to help cope with stress and software packages to evaluate options and assist in decision making on www.daff.qld.gov.au
- A booklet *Dry season management of a beef business* can be downloaded free from http://futurebeef.com.au/resources/publications/.



Incentives to help young people into agri-industries

Ten $10,000 scholarships on offer

YOUNG people aspiring to a career in agriculture can apply for a $10,000 scholarship to be offered through two of Queensland's agricultural training colleges.

Minister for Agriculture, Fisheries and Forestry, John McVeigh announced 10 scholarships of $10,000 each would be available under the new program starting in 2014.

"Our agricultural industries are crying out for graduates," Mr McVeigh said.

"The sector offers a whole range of career opportunities in cropping, livestock, horticulture, conservation and land management.

"This generous scholarship scheme will particularly help students to secure a place in the residential training program at the Emerald Agriculture College and Longreach Pastoral College.

"This $100,000 funding announcement from the Newman government represents a solid investment in the future of Queensland's agri-industries.

"This is seed money and we will be seeking industry support to continue funding the scholarships in future years."

Executive director Brent Kinnane said applications were now open and would close on Monday 28 October, 2013.

"We want to help those students who are committed to the industry," Mr Kinnane said.

"As part of their application, students will need to provide an explanation of their career plans.

"We're looking for those young people who have the will and the passion to make a real contribution to Queensland agriculture.

"Applications will be assessed by a selection panel made up of the two college directors, an education expert from the college, and an industry representative.

"The panel will make recommendations to the college boards for their approval.

"Successful applicants will be notified by mid-November."

To apply for the scholarship visit www.agriculturalcollege.qld.edu.au, call 1800 888 710 or email enquiries@aacc.edu.

Agriculture, Fisheries and Forestry Minister John McVeigh announced 10 scholarships of $10 000 each would be available under the new program, starting in 2014.

A very expensive gamble – judging a bull by its looks

Fertility matters part 1 – The Bull Power project

Driving herd profitability

EACH time you make a bull selection or purchasing decision, the bull you put in the herd today drives the direction of the herd and the profitability of your beef business well into the future.

Purchasing a bull on looks only is outdated and can be an expensive gamble. Many of these good-looking bulls are outperformed by bulls supported by documented objective measures.

Over the past 15 years, significant gains have been made in measuring the current and future ability of a bull to produce calves and, predicting the value of a bull relative to other bulls in the genetic merit of their progeny, in traits of economic importance.

This is particularly true in matters of fertility which can be expressed as:

- Calf output per 100 breeders per year.
- Calf output per breeder per 365 days of breeding life.
- Calf output per bull mated per year.

Your business is driven by the number of animals it can sell, their weight, and the price as achieved within the same time parameters of interest and tax paid.

Every beef manager needs to focus on the areas that will drive profit. Fertility is a big profit driver, particularly in northern Australia, and improving it will improve financial gains.

MEASURING THE CURRENT AND FUTURE ABILITY OF A BULL TO PRODUCE CALVES

From 1992 to 2003, there was a major bull-fertility research project called the Bull Power project conducted across northern Australia.

About 1000 bulls, mainly two to four-year-old Santa Gertrudis, Brahman, Brahman and Belmont Red bulls, were subjected to physical and reproductive examinations prior to mating. Many of these were followed through multiple-sire joinings and mating outcomes were established.

The Bull Power project was a collaborative effort involving the Queensland Department of Primary Industries, the University of Queensland, James Cook University, the Northern Territory Department of Primary Industry and Fisheries, the Meat Research Corporation, and the Santa Gertrudis Breeders Association (Australia).

KEY FINDINGS FROM THE BULL POWER PROJECT

- Sperm morphology of bulls has been shown to be an important pre-mating predictor of calf output of bulls in multiple-sire situations in Bos indicus and Bos indicus-cross herds in northern Australia.

STUDIES SHOWED THAT IN GENERAL:

- Bulls with <50 percent normal sperm sired few calves, while bulls with high calf outputs had >70pc normal sperm.
- Normal sperm was poorly repeatable in bulls that were still sexually maturing (14 through to 24 months of age). However, the repeatability of normal sperm was high in Brahman and composites once they reached sexual maturity.
- Sheath depth in Brahman bulls was negatively related to calf output – that is, deeper sheathed bulls sired fewer calves.

These results have been repeatedly demonstrated in practice in herds across northern Australia.

Australian Cattle Veterinarians (ACV) developed the Bull Breeding Soundness Evaluation (BBSE) and Veterinary Bull Breeding Soundness Evaluation (VBBSE) from the outcomes of the Bull Power project.

This process can be used to screen bulls prior to sale or before using bulls in the paddock.

The BBSE contains objective information in terms of 'what we see' (phenotype) and what we can see only with a microscope. Morphology in a BBSE is basically the 'structure' of individual sperm cells.

The BBSE is not a genetic evaluation of reproductive traits, but an indication of the animal's present reproductive function.

The BBSE was developed by veterinarians to standardise bull-fertility testing and to provide a consistent descriptor of bull fertility. The evaluation indicates whether a bull has met a set of standards for key fertility components which indicate whether a bull has a high probability of being fertile.

The components are:

- Scrotal circumference (cm) and tone or resilience.
- Physical examination for faults in the head, legs, joints, hooves, sheath and penis.
- Semen analysis for motility.
- Morphology (or structure of the individual sperm cells).
- Mating behaviour/mating ability.

The final evaluation of the semen is the percentage of individual spermatozoa that are structurally normal – the morphology. To record the percent normal sperm, a sample of the semen collection is placed in a small tube with a special diluent and sent off to one of the accredited morphologists.

The morphologist will examine 100 individual spermatozoa and record all the abnormalities present.

The morphologist report will detail the percent normal sperm and the percentages of the various abnormalities. There are internationally accepted maximum percentages of these various abnormalities.

Accredited veterinarians produce a detailed certificate report. It is wise to seek professional interpretation of this report.

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Economic importance; predicting bull values

Fertility matters part 2 – Beef CRC outcomes

Brahman heifers in spotlight

RESEARCH into fertility traits has been carried out by the CRC for Beef Genetic Technologies (Beef CRC) over 12 years up until late 2011. The research involved 1027 Brahman heifers by 54 sires and 1132 tropical composite heifers by 51 sires. The heifers were studied from weaning through to weaning of their sixth calf.

A total of 3648 young bulls of the two tropical genotypes were evaluated for a comprehensive range of production and reproduction traits up to 24 months of age.

Genetic correlations of young bull and heifer puberty traits with measures of early and lifetime female reproductive performance were estimated in the two tropical beef cattle genotypes.

BEEF CRC OUTCOMES

Soon-to-be published results showed the following:

- Scrotal circumference at 12 months was found to be highly heritable in Brahmans and moderately so in Tropical composites.
- Scrotal circumference at 12 months in Brahmans and at six months in Tropical composites were correlated with heifer age at puberty – that is, larger-testicle sires, sire daughters that reach puberty earlier.
- A critical finding was the large influence of sires on heifer age at puberty. Brahman sires differed by up to 5.6 months in the average age at puberty of their daughters.
- Younger age at puberty tended to be genetically associated with increased lifetime reproductive performance.

The Beef CRC found a large genetic variation between sires in the interval between calving and the first oestrus cycle after calving of their daughters. That is, sires have a large effect on the time taken to return to cycling after calving.

In the Beef CRC Brahman sires, this difference was 4.4 months. This can equate to a 40 percent difference in calving rate.

Percent normal sperm is heritable and was genetically correlated with lactational anoestrus and female lifetime reproductive traits in both genotypes. That is, daughters from sires with high percent normal sperm cycle sooner after calving and have higher lifetime calving rates.

Preputial eversion (pink skin showing at the pizzle) and sheath scores were genetically associated with lifetime calving and weaning rates in both genotypes. That is, lifetime calving of daughters of bulls with deep sheaths or pink prepuce showing were lower.

SCROTAL CIRCUMFERENCE

There are new Australian Cattle Veterinarians (ACV) standards for minimum scrotal circumference to pass a Bull Breeding Soundness Evaluation (BBSE) or Veterinary Bull Breeding Soundness Evaluation (VBBSE). Scrotal circumference is mostly influenced by weight and breed.

> Scrotal circumference is mostly influenced by weight and breed.

Normal range for scrotal circumference in 13 common breeds of Australian beef bulls was established using ~260,000 observations of bulls that were mostly within 250-750 kg liveweight and 300 to 750 days of age. The recommended minimum scrotal circumference is the bottom 5pc value, at any weight within breed.

Bull breeders and breed societies may impose higher thresholds where breeding objectives require increasing scrotal circumference. Graphs 1-4 provide by weight, the predicted 5th percentile, average and 95th percentile curves for four of the common breeds.

Use bulls with average or above average scrotal circumference for their weight, to assist earlier age at puberty in females and greater lifetime calf output in progeny. Professional interpretation of scrotal circumference by weight of bull can be sought.

MAKING REAL PROGRESS WITH GENETIC TOOLS

Making real progress is about making long term genetic gains where the progeny of the bulls we use this season, produce more calves per year than previous generations. This applies to bulls and breeders. As part of genetic gain, these progeny also need to meet market objectives.

BREEDPLAN estimated breeding values (EBVs) are the most accurate genetic tool to make long-term gain in growth, fertility and carcase – these being the economic traits of our beef business. The Beef CRC has validated and strengthened BREEDPLAN EBVs.

It is always recommended to use balanced selection across these economically important traits.

Scrotal size EBV is superior to the actual scrotal circumference measure and a valuable tool for identifying bulls that will produce daughters which reach puberty earlier.

Days to calving (DTC) EBVs (available for some breeds) are an indicator and selection tool to address quicker rebreeds after calving. Select bulls with negative DTC figures – the more negative the better.

Use growth EBVs while monitoring mature size and calf size, to improve weight for age, higher mating weights in heifers and improved market placement.

Use carcase EBVs to improve carcase compliance and market achievement. Set minimum standards. Do not forget to find out breed average for each trait.

SUMMARY

- Recent research has shown female reproduction traits in tropical genotypes are heritable and that genetic progress can be made through selection of sires.
- Use a balance of traits in selection (fertility, growth and carcase).
- Selection for these traits will not compromise tropical adaption.
- Female fertility can be improved through genetics from the sires selected.
- Use bulls with above 70pc normal sperm at 24 months for both genetic improvement in the progeny and for bulls that are either to be single-sire mated and or used for semen collection for processing.
- Scrotal size EBVs (larger, more positive) and days to calving EBVs (some breeds) (shorter, more negative) are available for identifying superior genetics for fertility.
- Phenotypically, bulls should have above average scrotal circumference at 12 months and again at pre-mating BBSE for the weight of bull within breed.
- Regardless of whether you have sourced bulls out of the paddock or the sale ring, the need for some objectivity in selection remains the same.
- Remember the bull put in the herd today drives the direction of that herd and your profitability well into the future (potentially 14-16 years).

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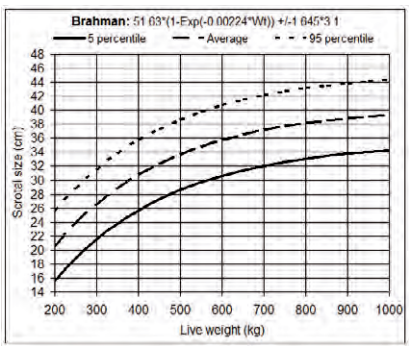
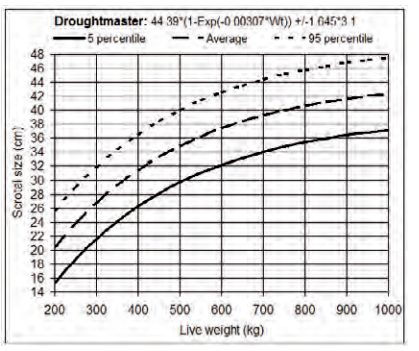
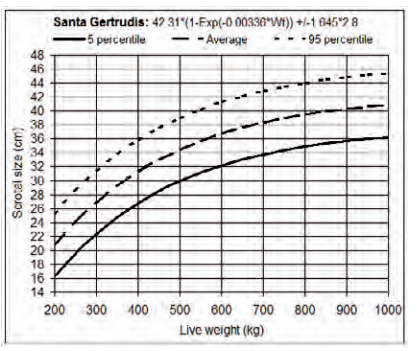


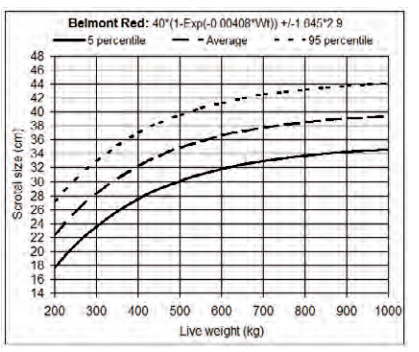
Graph 1. Range of scrotal circumference relative to liveweight in Brahmans



Graph 2. Range of scrotal circumference relative to liveweight in Droughtmasters



Graph 3. Range of scrotal circumference relative to liveweight in Santa Gertrudis



Graph 4. Range of scrotal circumference relative to liveweight in Belmont Reds.

Information in the spotlight:

QUEENSLAND BLUEGRASS

QUEENSLAND bluegrass (Dicanthium sericium) is one of the desirable 3P (palatable, perennial, productive) native grasses to have in our pastures.

This is a widespread plant in eastern Australia and favours heavier black clay soils.

It is commonly grazed out in many pastures due its palatability while green and the fact that the whole plant can easily be up rooted under severe grazing pressure.

It is good quality feed with up to 10 percent crude protein, 0.2pc phosphorus and 62pc digestibility. However like most tropical grasses protein levels drop significantly once the grass has gone to seed.

The grass grows from wetter coastal regions through to drier regions with 500mm annual rainfall.

Queensland bluegrass grows to 80cm tall with a slender stature and leaves being only 2-4mm wide. Most leaves grow from the base and can range from deep green to grey green in colour.

It has a distinct seed head with 4-6 branches, each spikelet is covered in silky hairs.

The other distinguishing feature of the plant is a ring of hairs around the node on the stem.

There are three sub-species and a number of ecotypes all which vary in size and leaf colour. Nodes on the stems of Queensland bluegrass have a ring of light coloured hairs.

Queensland bluegrass (Dicanthium sericium).

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NEW POISONOUS PLANTS BOOK

AUSTRALIA'S Poisonous Plants, Fungi and Cyanobacteria – A guide to species of medical and veterinary importance (2012) by Ross MacKenzie.

Poisonous plants, fungi and cyanobacteria potentially impact on everyone, from the urban gardener, pet owners, mothers with young children exploring the world through taste, through to beef producers.

In this book Ross describes an amazing number of poisonous plants including blue-green algae, grasses, weeds, shrubs and trees from across Australia.

The beautifully clear, informative photos of each species help make plant identification easier.

Ross' introduction to understanding plants and plant poisonings and explanation of different types of poisoning (e.g. oxalate "big head of horses" and nitrate-nitrite poisoning) tells the whole story in a straightforward, easy read.

- Read more about this book at CSIRO Publishing www.publish.csiro.au/pid/6507.htm

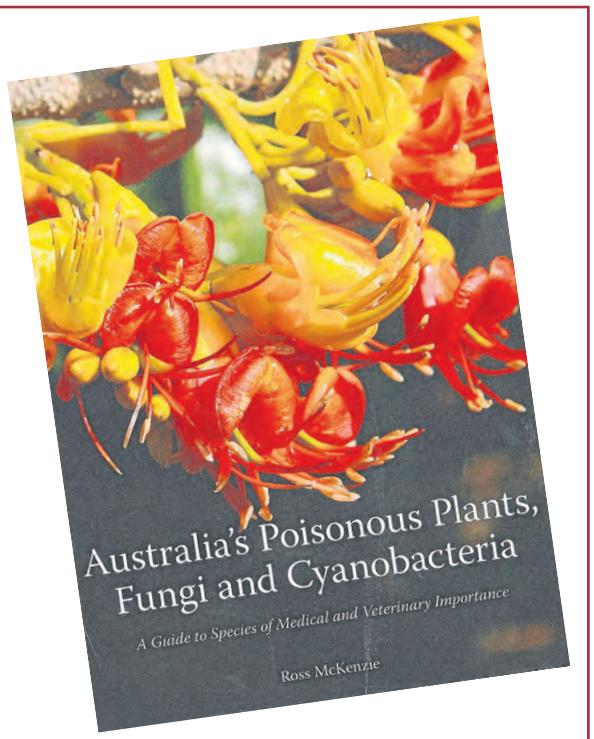
WEED APPS

WEEDS of Southern Queensland 3rd edition app.

Now available from the Google Playstore http://www.wsq.org.au/WSQ%20app.htm

Weeds Ute Guide app by GRDC.

Available on the App Store http://www.grdc.com.au/Resources/Ute-Guides



Timely tips for Spring 2013

'Getting your house in order'

BREEDING

- Assess breeder condition for mating. First-calf cows may need extra care with supplements.
- Vaccinate maiden heifers for leptospirosis if a problem has been diagnosed (two vaccinations four weeks apart).
- Check calving cows, especially heifers, regularly.
- If possible keep calving cows, especially heifers, in paddocks that are readily accessible and fairly close to a set of yards.
- Make up a calving kit (calf pulling gear, chains, buckets, clean water, antiseptic, gloves, boots and overalls). Have all calving gear clean and ready to go.
- If you have to assist a cow giving birth, make sure you wear appropriate safety gear (long gloves etc). Leptospirosis (from infected urine), Q Fever etc, are very serious diseases in humans.
- Know or have on display the telephone number of your local vet. Record all cows and heifers that have calving problems and sell them and their calves as soon as practical. Order NLIS ear tags or rumen boluses for calves branded this year.

BULLS

- Evaluate information available on potential bull supplies ideally after semen testing your working bulls so you know beforehand the number you need to purchase. Purchase bulls according to guidelines. Remember, you get paid for number of calves (fertility) and by weight (weight gain).
- Check purchased bulls are in working condition, not fat sale condition.
- Conduct a breeding soundness evaluation test on all bulls checking for both physical and reproductive soundness and semen test all working bulls culling any that are not fertile. Check all bulls for:
- Injuries, stiffness of gait, cuts or swelling, foot problems, over grown toes, swelling between the toes
- Cull bulls on age. Unless you are very sure they are still fertile and active, the industry recommendation is cull at about seven years of age, but in smaller herds bulls may still work until much older than that.
- Cull any bulls with defects. Vaccinate bulls for three-day sickness and vibriosis (two doses one month apart initially, then annual booster).
- Check mating paddocks are secure.

PUT BULLS OUT WITH BREEDERS:

- Mate heifers one month before the main herd where nutrition is adequate.
- Mate young bulls with young cows. Avoid mixing differently aged bulls if possible to reduce fighting.

WEANERS

- If you have the time, spend it working the weaners and reminding them of the training they got as weaners. Check them for worms and treat if necessary.

Following rain in spring is a good time to consider burning eucalpyt woodlands and grasslands to manage land condition.

GROWING CATTLE (STEERS & CULL HEIFERS)

- Consider vaccination against three-day sickness, particularly forward stock close to turnoff.

NUTRITION

- Review dry season management plan and climate forecasts. Reassess pasture quantity and quality in relation to ground cover and feed values at the end of the dry season.
- Feed energy and protein supplements to breeders that are heavily pregnant or lactating and to weaners to maintain liveweight.
- Evaluate effectiveness and cost-benefit of a winter supplementation program.
- Re-order molasses, grain supplies or supplements for the next dry season. If you are buying in hay for weaning, check prices and buy when hay is plentiful and at the right price. If you make your own hay lock up paddocks when there is sufficient feed for the cattle in other areas and let those paddocks grow until you can make the hay.

PASTURES

Check pastures at the spring break:

- Is there enough ground cover?
- Consider spelling pastures early in the growing season for a positive impact on pasture composition. Prolonged heavy grazing of fresh growth will have a serious detrimental effect on the desirable species of grasses.
- Consider burning native pastures to maintain good pasture condition and control woody weed growth.
- Check and control weeds before they seed.
- Actively patrol known 'hot spots'. Check areas used for supplementary feeding for weeds brought in with hay or grain mixes.
- Watch long-range weather forecasts for suitable time to plant pasture.
- Check firebreaks and fire-fighting equipment.
- If pasture development is a part of your overall plan, sow pastures if seasonal conditions are favourable. If you can't get the pasture in by the beginning of October it is best to wait until the New Year. This reduces the risk of failed establishment due to heatwave and drought conditions or, in a very good year, flood conditions.

PARASITES AND DISEASES

- Vaccinate bulls for vibriosis.
- Vaccinate for three-day sickness.
- Vaccinate all breeding cattle, including bulls, for pestivirus if it's a problem in your area, noting that the initial vaccination can cause a fever, so vaccinate bulls well before needing them.
- Obtain cattle dip analysis and adjust chemical level if necessary.
- Check early calves (late winter) for ticks.
- Start tick control program.
- Check weaners for worms (send faecal sample for testing) one month after season has broken.

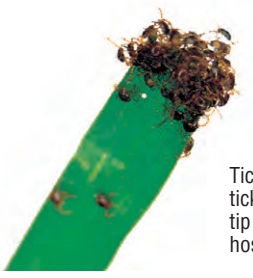
BUSINESS

- Meet with all staff to discuss progress of the business and to plan for the future, including retirement and succession planning.
- Get information on training programs and budget to allow attendance at those applicable to your business.
- Review overall property management and any changes that may be necessary.
- Review breeding program; assess whether it is producing animals suitable for market requirements.

PROPERTY MAINTENANCE

- Check mating paddocks are secure.
- Check river and creek crossings before wet season.
- Before end of dry season look for green patches in paddocks that might indicate water leaking from underground piping.
- Maintain fire fighting equipment, extinguishers etc., and ensure staff are fully trained in their use. Clean around buildings and check gutters are free of leaves.
- Ensure fire breaks are maintained and serviceable, slash around houses, sheds and yards so if a fire does get away it will be easier to control on short grass.
- If you have the time also slash the tracks around the paddocks to make getting around them easier and safer.
- Initially it is often easy to slash along cattle tracks which also makes mustering easier as the cattle will follow the pads so long as they end up where you want them to.

Horse transporters need certificate to enter tick-free zones



Tick larvae (seed ticks) on a grass tip waiting for a host animal.

Waybill required in tick zones

A REMINDER for people transporting horses to the Queensland cattle tick free zone.
Any person moving a horse(s) into the Queensland cattle tick free zone must be in possession of a fully completed waybill and, either an Inspection and Treatment Certificate issued by one of the stock clearance centres or a livestock travel permit issued by a government biosecurity inspector.
You must have these two documents including, but not limited to, travel to a show or race meeting or returning home after a competition in the cattle tick- infected zone. Correct documentation and treatment of animals helps prevent the spread of cattle ticks and save losses from cattle mortality due to tick fever. For further information on your legal requirement to travel horses and other stock movements visit www.daff.qld.gov.au or phone the customer service centre on 13 25 23 or the Queensland Police Stock and Rural Crimes Investigation Squad.