FutureBeef NORTHERN MUSTER Information for rural business in North Queensland Queensland Government

Catching a silent killer

Driving good decision-making through objective data at Mt Spencer Station.

Blood and swab results showed a vibrio infection in a high proportion of the herd on Mt Spencer Station, south-west of Mackay.

IT WASN'T even smoko time, and already the Wrights were worried.

One June morning, the Wrights of Mt Spencer Station, 60 kilometres south-west of Mackay, yarded 570 shiny maiden heifers and remarked what good nick they were in. They were right; their composite heifers averaged around 330 kilograms liveweight and 3-3.5 body condition score (BCS).

However, within the first hour of pregnancy testing, as empty after empty was called, the Wrights and their vet, Brendan Brieffies from Clermont Vet Surgery, were suspicious that something was amiss. The 'empties' yard looked different than normal: where usually there were predominantly grey brahmans there was a cross-section of the herd.

Raeleen Wright consulted her weight records from the previous year's heifer cohort. At the end of testing, only 41 per cent of the maiden heifers were found to be pregnant; a low result compared with the previous year that were over 65pc pregnant.

What would your first thought be? The season? Maybe these heifers are just a bit light? That's what Raeleen thought too, so she checked. These heifers were not significantly lighter than last year's. Maybe a dodgy preg test?

Brendan is accredited through the Australian Cattle Vets, and the Wrights are very confident in his diagnoses.

"We can rely on what he says. The data we collect and calves on the ground always back up the testing," Raeleen said.

What about three-day sickness (bovine ephemeral fever)? It was a big year for it, and they'd seen some of the bulls down. Otherwise, the bulls couldn't take the blame, as they had been through a full bull breeding soundness examination (BBSE) either at point of sale or the previous year, so they knew they were up to the job.

"I can't emphasise enough, we had to stop hypothesising and get some evidence," Raeleen said.

The next week, Brendan returned to Mt Spencer to test the bulls and 15 heifers. No effect of three-day was picked up in the bulls, and bloods and vaginal swabs were collected from the heifers to test for vibrio and pestivirus.

The results came back showing a vibrio infection in a high proportion of the herd. All the bulls on Mt Spencer are vaccinated for vibrio, so it was suggested that the culprit was a staggy steer. Maiden heifers do not go in the same paddock every year at Mt Spencer, and this year's heifers had been in the boundary paddock, sharing a fence with cattle that were new to the area. This is likely how the disease was introduced.

> Vibrio is the same as any disease. If you can catch it early there's a good chance of managing it before it costs you a lot of money. At Mt Spencer we were able to pick it up quickly through the data; having data available is a massive tool.
>
> **Brendan Brieffies, Clermont Vet Surgery**

"For vibrio, like any disease, a biosecurity plan is important. Knowing what's in your herd, what's coming in when you introduce new cattle or people, and having an idea of what's next door is very influential in managing disease," Brendan said.

The heifers were isolated from other cattle, and under recommendations from Brendan and consultant John Bertram, a vaccination program was implemented.

All pregnant heifers were vaccinated with Vibrovax, as were 200 of the empties. Culling all the empties would have been an easier option, and 130 heifers were sold to a feedlot, but after significant investment in genetics in recent years, Mt Spencer opted to retain some.

Any mature pregnant cows were also vaccinated for vibrio, and this year's maiden heifers will be vaccinated with Longrange Botulinum, Pestigard, Vibrovax and 7in1 prior to joining.

The negative pestivirus test confirmed previous tests indicating the herd's naive status. For this reason, maiden heifers will continue to be vaccinated with Pestigard.

The bulls that were running with the heifers at the time of infection were treated with Draxxn antibiotic to ensure no vibrio was retained, and all mature bulls were also treated with Erymycin antibiotic.

This year all bulls on Mt Spencer will be vaccinated for three-day as further insurance.

Raeleen sourced competitive vaccine prices by shopping around with multiple agents. Mt Spencer spent about $20/head to manage the vibrio outbreak. This included nearly $20,000 on vaccines and antibiotics and excluded mustering and handling costs.

A 20pc drop in pregnancy rate of maiden heifers cost the business 110 calves and based on today's prices, in 2021 those weaners would have made nearly $90,000.

Had such a proactive approach not been taken, that 20pc loss could have spread across all 2500 breeders on Mt Spencer.

"You don't just sit on it for a year; you can't assume it was the season. A year later vibrio could be through the whole herd - test and find out," Raeleen said.

More information is available at futurebeef.com.au (search for 'vaccinations').

Peta Stockwell, beef extension officer, DAF Mackay, Peta.Stockwell@daf.qld.gov.au

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Develop a burning strategy

HEALTHY savannah woodlands are a valuable resource for the Northern Dry Tropics and healthy productive native pastures are critical to the profitability of the grazing industry in the region.

Woody vegetation has been thickening across the region over the last 50 years and this has negatively impacted pasture growth and animal productivity, plus increased mustering time and costs.

The most common species associated with thickening across the northern rangeland are lantana, breadfruit, gutta percha, yellow wood, rubber vine, wattles, tea tree, currant bush, Cooktown ironwood and native eucalyptus.

The use of fire is the most affordable option available to producers in our extensive native pasture grazing areas.

To maximise the benefits of using fire, landowners need to take a few important steps.

- Identify the problem woody species and its susceptibility to fire. Problem species under three metres in height will be more susceptible to fire damage.
- Will fire improve the situation and what fire frequency is needed to address the problem? Develop a burning strategy to be applied over several years.
- An effective fuel load for the fire is critical and 1000-1500 kilograms/hectare of grass is the minimum required for a good result. This may require the paddock to be wet season spelled or lightly stocked in the season before the planned fire.
- Plan to burn at the end of the dry season after the first storms (30-50 millimetres is ideal).
- Burning conditions on the day of the fire are vital for a good result, which includes a hot afternoon with some breeze. Proper attention to fire breaks and back burning is essential to ensure the fire doesn't escape.
- Don't introduce cattle back onto the burnt area until the native pastures have regrown and seeded.
- Don't burn after Christmas or in El Nino years where the expectation of good summer rain is lower.

Species susceptibility to fire (highest at the top of the list): rubber vine, gutta percha, breadfruit, lantana, wattles, yellow wood, currant bush, tea tree, Cooktown ironwood and native eucalyptus.

For more information visit futurebeef.com.au and search 'fire'.

Bernie English, senior beef extension officer, DAF Mareeba, 0427 146 063.

Yellow wood (Terminalia platyptera, T. platyphylla) thickening in the Mt Surprise district.

Has your grass turned green?

THE date by which a location has a 70 per cent chance of having received 50 millimetres of rain over a maximum of three consecutive days after September 1 is referred to as the Green Date.

Bureau of Meteorology records over 120 years reveal few locations in central and northern Queensland can reliably expect this before Christmas.

The implication for beef cattle enterprises is that animals are reliant on the manager's ability to budget for sufficient feed to last until after that season break. You may have been fortunate, being a La Nina year, to have had an early break, but banking on early breaks will lead to shortfalls in pasture availability. The result is insufficient residual pasture levels and significant animal weight loss, particularly in lactating cows.

Information and support is available at futurebeef.com.au

Roxanne Morgan, beef extension officer, DAF Mackay, Roxanne.Morgan@daf.qld.gov.au

Location	Chance of receiving 50mm over a maximum of three days	
	By Christmas	By Australia Day
Burketown	44%	84%
Charters Towers	41%	74%
Clermont	50%	74%
Cloncurry	29%	62%
Longreach	28%	53%
Mackay	71%	93%
Richmond	33%	68%
Rockhampton	58%	79%

What are your chances? Table courtesy of Climateapp.net.au.

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Desmanthus on the rise

Progardes Desmanthus spreads its wings as a fodder crop with numerous options including hay, silage, green chop, pellet or chaff feed.

IT COULD be said that the beef industry in Queensland has had an on-again, off-again relationship with Desmanthus.

If you read the Department of Primary Industries (DPI) producer demonstration site reports from 1996, you'll find a recount of Desmanthus being planted on multiple sites across Central Queensland.

Unbeknown to Roxanne Morgan, beef extension officer at Mackay, her father Max McFarlane even planted it on 'Farlane Park' Middlemount, with the help of legendary DPI officer George Lambert.

For one reason or another, Desmanthus endured a period of leguminous purgatory before being reidentified and isolated from abandoned pasture evaluation plots, which had been planted in the 1980s by DPI and CSIRO.

Chris Gardiner from James Cook University (JCU) did much of the work.

"The only surviving legumes of note from these forgotten sites were the Desmanthus varieties. They have tolerated grazing, flood, drought, frosts and insects. They have survived and continued to be persistent and productive," he said.

Chris managed to isolate and propagate five cultivars from those surviving lines, which are now marketed by Agrimix as Progardes.

Progardes has firmly established itself as a viable legume option for alkaline clay soils, and the recent identification of additional higher yielding varieties has increased its versatility. With increasing interest across the north in feedlots, irrigation systems, fodder production and production feeding for weaners and heifers, these new varieties offer the potential for high quantity and quality of fodder.

Paul Murat from Mareeba has been growing Progardes for some time. In August 2020 he grew a crop of irrigated Progardes (cultivated variety (cv) JCU 7) that he baled in October to a yield of 4.5 tonnes per hectare (205 bales at 220 kilograms).

He cut another crop of cv JCU 5 previously for hay, which yielded 10.3t/ha (310 bales averaging 266kg). This same crop was grab sampled and tested for forage quality, with test results showing an impressive crude protein (CP) content of 16.6 per cent, and metabolisable energy (ME) of 11.2 megajoules/kg. Paul was also impressed with the useability of the feed.

"The Progardes hay seems to be very palatable to a range of stock, even younger cattle. The wastage also seems to be very minimal, they clean up the lot," he said.

In 2018, Greg Boto from Four Mile Nebo planted a 20ha paddock of heavy black soils with Callide Rhodes grass and Progardes. The density of Progardes from establishment was excellent (4.7 plants/m2), and in April 2020 successfully made 500t of silage.

"We'd prepared the ground well, but moisture was scarce early due to the late break in 2020. The response after that was so quick it caught me off-guard, I was going to cut it for hay but instead, it went into the bunker as silage," Greg said.

The Rhodes and Progardes mix underwent fermentation in bunks and produced a well ensiled, palatable feed. A grab sample of the silage revealed 13.8pc CP and 7.4 MJ/kg ME.

However, Greg was conscious it needs to be grazed effectively.

"Here in Nebo our frosts take the leaf off everything, so to maximise productivity I utilise my Progardes paddock early in the season," he said.

The impressive diet quality is also attracting attention from industry research for its potential to reduce methane production in ruminants. A combined CRC project that draws funding and research support from Agrimix, MLA, DAF, JCU, CSIRO and a co-operative of five large beef businesses in north western Queensland, is investigating the effect of inclusion of Progardes green chop into the diet on steer productivity and methane production.

The preliminary results of this trial are expected in early 2021. Meanwhile, the cut Progardes regrowth is yielding well at around 3t dry matter/ha, and it is expected production would be high enough to achieve at least three cuts a year.

Progardes Desmanthus is becoming well known as a valuable pasture legume and is also spreading its wings as a potential forage with numerous options including hay, silage, green chop, pellet or chaff feed.

"Progardes Desmanthus is really starting to show its application in a number of environments, primarily as a pasture legume for clay soils. But with the development of these new higher yielding varieties combined with its ability to achieve good yields with multiple cuts, Progardes Desmanthus is a potential option for irrigated systems in multiple parts of Queensland," Chris said.

To compare the Progardes nutritional information in this article to other fodder options, visit futurebeef.com.au and search for 'hay and silage analyses'.

- Chris Gardiner, JCU, christopher.gardiner@jcu.edu.au
- Hector Fleury, Agrimix Pastures, heitor@agrimix.net.au
- Jim Fletcher, beef extension officer, DAF Mackay, Jim.Fletcher@daf.qld.gov.au

Hector Fleury, Agrimix Pastures, with a thriving crop of the JCU cultivated variety 4 of Desmanthus.

> The Progardes hay seems to be very palatable to a range of stock, even younger cattle. The wastage also seems to be very minimal, they clean up the lot.
>
> **Paul Murat**