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Bulls, breeders, births

Moving from a continuous-mated herd to a control-mated herd has its challenges, which the Price family has considered.

ALTHOUGH feeding a phosphorous (P) lick was first on the agenda at Greenlake, the Price family had plans for the breeder herd too.

One month after the first P was fed, the whole property was mustered.

All cows that were dry and empty were sold, along with about half of the bulls which were culled for age.

The remaining bulls were taken out from the cows in preparation for a September joining.

All cows were vaccinated for 7 in 1 and botulism, and treated with Acata for ticks.

Using bulls wisely

Belmont Red bulls were purchased for the 2021 joining season.

"We selected 22 Belmont Red bulls based on estimated breeding values (EBV) data," Owen Price said.

"We were looking for bulls with negative days to calving and positive growth EBVs.

"Our plan is to gradually move towards a control-mated herd.

"So, we put bulls out in September 2021 to February 2022.

"The older bulls went with one mob of cows and the new bulls with another mob.

"Next year we will cull some more of the original cows, as we have replacement heifers coming through and we will tighten the joining a little more -

probably taking the bulls out in late January."

Moving from a continuous-mated herd to a control-mated herd has its challenges, which the Price family has considered.

"We have to manage the size of the breeder herd, weaning dates and the number of replacement females - among other things," Mr Price said.

"Some cows might take a season or two to fall into line, and some won't at all.

"We will select for fertility and growth."

Cows well adapted

Mr Price said the goal was to have a Belmont Red-cross-Indicus female herd that is yearling mated and produces consistent weaners in a three-month joining period that they can background on their properties in the Arcadia Valley.

"We want a line of females that are adapted to this country, with early puberty and higher inherent fertility," he said.

"That is what we will be selecting for."

Calving time is also an important element of the breeding plan.

"The risk of flooding here on our lower country has made us think about how we manage the herd at different times of the year," Mr Price said.

"In the right conditions, we can get a flood at any time of the year.



Greenlake cows and weaners in March 2022, before weaning in May. Picture Rob Price.

"We've been here less than 12 months and we've already had water on the flood plain in November, April and May."

Best practice in most areas of Central Queensland is for joining to be planned so that cows calve about six to eight weeks before the green date.

In this region, the green date is defined as the date when there is a 70 per cent chance of 50 millimetres of rain over three days.

This means cows aren't lactating for too long before there is good probability of having green feed.

Managing flood country

However, flood country can be a challenge, explains Department of Agriculture and Fisheries extension officer Kylie Hopkins.

"As there is green grass most of the year, the timing of the seasonal break is less critical," Ms Hopkins said.

"What is more important is when the country is likely to flood.

"From a welfare perspective, you don't want cows calving in flood season - as both cows and calves can be lost."

As a result, the Price family has planned the 2023 calving for winter to avoid the flood season.

"We are moving towards a September to December joining period," Mr Price said.

"This will produce a June to September calving when there is less chance of flooding.

"We expect that it might take about five years to get there, but that's what we're aiming for."

Tick management

The Prices have also built on the previous owners' tick management program.

They have implemented more paddock rotations with some new fences and have been treating cows with Acata.

Weaners have had injectable Dectoma.

Before the weaners can go to the Arcadia Valley, they have to go through a clearing dip.

"We're pleased to say that on inspection they were very clean - no ticks on the cattle from the paddocks where the paddock rotation has been implemented," Mr Price said.

He said implementing several practices in one year had been no mean feat.

"We are really proud of the weaners that have come off Greenlake in our two rounds

of weaning so far," he said.

"The cattle look good, the cows are making milk and producing good weaners.

"It's been hard work, but we are really proud of what we have achieved in one year."

Advocates

The Price family has a long history of working with DAF and has been great advocates for the department's beef extension service.

They are currently participating in the Grazing Resilience and Sustainable Solutions and Northern Breeding Businesses projects and have been guest speakers and mentors in the Advancing Beef Leaders program.

For more information contact: Kylie Hopkins, beef extension officer, DAF Rockhampton, 0467 726 349.

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How do you measure fertility in beef herds?

WE KNOW breeder performance is a key profit driver in beef businesses.

To improve performance, we must first measure it so we can assess and monitor it on an ongoing basis.

Fertility calculations are complicated by the 12 to 18-month period from joining to branding and weaning.

It is the 2022 joining that produces the calves you brand in 2023.

With the branding months approaching, what should we be recording?

Pregnancy rate

The first fertility assessment to undertake is the pregnancy rate.

If we joined 500 cows in the 2021-22 mating and 430 were pregnant at the June 2022 pregnancy test, the pregnancy percentage calculation would be:

Pregnancy per cent = $(430/500) \times 100 = 86\text{pc}$.

If maiden heifers and first-calf cows are run together or with older cows, it is important to record their pregnancy test data separately.

This will make it easier to identify any problems with their performance.

Branding and weaning rates

Branding and weaning rates should be calculated off total cows joined.

For 2022-branded calves it is cows joined in 2020-21.

Branding and weaning percentage calculations are based on how many cows are present at the time.

Do not include empty cows removed at pregnancy

	2020-2021	2021-2022	2022-2023
Mating			
Mating period	15/12/20-31/3/21	15/12/21-31/3/22	15/12/22-31/3/23
Branding	5/01/2021	5/01/2022	5/01/2023
Weaning & pregnancy testing	June 2021	June 2022	June 2023
A Total cows joined	495	500	505
B PTIC cows	425	430	435
C Pregnancy % = B/A x 100	85.9	86.0	86.1
D Pregnant cows retained	425	430	435
E Calves branded		400	402
F Branding % = E/Year before A x 100		80.8	80.4
G Loss - Pregnancy test to Branding = Year before D - E		25	28
H Loss - Pregnancy test to Branding % = G/Year before D x 100		5.9	6.5
I Calves weaned		394	394
J Weaning % = I/Year before A x 100		79.6	78.8
K Loss - Pregnancy test to Weaning = Year before D - I		31	36
L Loss - Pregnancy test to Weaning % = K/Year before D x 100		7	8
M Loss - Branding to Weaning = E - I		6	8
N Loss - Branding to Weaning % = M/E x 100		1.5	2.0

testing and cow losses.

If the joining of 495-cows in 2020-21 resulted in 400 calves being branded and 394 weaned in 2022, the calving and weaning percentage calculations are:

Calving per cent = $(400/495) \times 100 = 80.8\text{pc}$.

Weaning per cent = $(394/495) \times 100 = 79.6\text{pc}$.

Foetal and calf losses

Foetal and calf losses are calculated using the number of cows retained at the previous year's pregnancy test.

Pregnant cows that are sold before calving are not included in the calculations as they did not have the opportunity to produce a calf.

Following the 2020-21 joining of 495 cows, 425 were pregnant at the June 2021 pregnancy test.

If these were all retained to calve the foetal and calf loss calculations are:

Loss - pregnancy test to branding = $425 - 400 = 25$.

Loss - pregnancy test to branding per cent = $25/425 \times 100 = 5.9\text{pc}$.

Loss - pregnancy test to weaning = $425 - 394 = 31$.

Loss - pregnancy test to weaning per cent = $31/425 \times 100 = 7.3\text{pc}$.

Loss - branding to weaning = $400 - 394 = 6$.

Loss - branding to weaning per cent = $6/400 \times 100 = 1.5\text{pc}$.

Year-round mated herds

Assessing fertility in year-round mated herds is more difficult.

It is usually impossible to calculate branding or

weaning percentages based on cows mated because, with calves being branded and weaned at each muster, it is difficult to identify the number of cows mated to produce them.

One of the many advantages of controlled mating is it enables better assessment of herd performance.

Some producers calculate branding and weaning percentages based on the cows present at the second round in the previous year.

This approach provides consistency but will not provide true branding and weaning percentages, as cows will have been sold.

In year-round mated herds where pregnancy testing is undertaken and the number of retained pregnant cows is known, foetal and calf loss

from pregnancy testing to branding and or weaning can be determined.

Conception patterns

It is also important to record foetal age and body condition scores when pregnancy testing so the conception pattern can be seen.

The conception pattern and body condition scores can help identify if disease or poor body condition may have been a problem.

Diseases like vibriosis and trichomoniasis that cause embryonic failure and early abortions can result in delayed conceptions.

Foetal ageing provides the opportunity to identify superior cows which conceive early in the joining and cull less fertile cows if numbers have to be reduced.

QUEENSLAND backs efforts to fight lumpy skin disease with new vaccines

The Queensland Government has partnered with Meat & Livestock Australia, the New South Wales Department of Primary Industries and US-based biotechnology company Tiba Biotech to create a world-first synthetic vaccine for lumpy skin disease (LSD).

A new mRNA vaccine would be a game changer, as the live virus vaccines currently available overseas cannot be used in Australia without affecting our disease-free status.

A new mRNA vaccine would have the advantages of being potentially safer with capacity for rapid development and lower-cost manufacturing, helping protect jobs in Queensland's nation-leading livestock industries.

Department of Agriculture and Fisheries (DAF) scientists are also working on a second LSD vaccine project with the Queensland Alliance for Agriculture and Food Innovation (QAAFI) at the University of Queensland.

This involves a traditional protein-based vaccine with a delivery system that releases the vaccine in cattle over an extended period.

This would provide an option for northern cattle, which are brought in only once a year.

Professor Tim Mahony, from QAAFI's Centre for Animal Science, said the team hoped to develop a prototype by the end of the year, using synthetically-produced materials.

As well as vaccines, early detection is also vital to manage biosecurity risks such as LSD.

Livestock owners are reminded of the importance of knowing what LSD looks like and reporting any suspicions early.

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Giving fertility a boost

TO MAXIMISE breeder performance, we are aiming for cows to conceive early in the mating period and for each cow to raise a weaner.

We need to be aware of a few biological realities.

There are 365 days in a year and the average Brahman pregnancy is 290 days.

The time between calving and a cow's first cycle is about 42 days.

This leaves 33 days, or 1.5 cycles, to get a cow back in calf if she is to calve every 365 days.

We are asking a lot and many cows cannot do it, so we get calving drift.

We need to manage both grazing and the cows to give them the best opportunity to get back in calf quickly.

Lack of breeder body condition is the most common cause of poor breeder performance.

When cows calve at the end of the dry season, their energy requirements double but feed quality is usually low.

They face a period of weight loss and require reserves of body condition to carry them until the seasonal break occurs.

Breeder management strategies are aimed at ensuring cows have adequate body condition at calving and minimal weight loss during lactation.

Stocking rates and grazing management are the most critical issues.

If cows cannot consume their potential feed intake, they will always struggle to maintain condition.

Weaning is the most powerful tool after grazing management, as it imme-

diately reduces the cow's energy requirements - providing an opportunity to recover condition.

Phosphorus (P) deficiency reduces feed intake.

Consequently, on deficient country, P supplements increase feed intake and improve body condition.

During the dry season, protein supplements can reduce weight loss but will usually not stop it.

Weight loss by lactating cows in the dry season can only be stopped by intake and costly energy supplements, such as molasses, whole cottonseed, grain or protein meals.

Controlled mating can be advantageous in minimising weight loss

Seasonal/control mating has many advantages, including that cows that calve six to eight weeks before the seasonal break is likely to occur do not face a long period of weight loss.

Consequently, less supplements are required.

Management and labour activities are concentrated, and it's easier to identify less productive cows - those failing to conceive or wean a calf.

If you can't control mate, a good option is to foetal age at pregnancy testing and draft breeders into management groups.

You'll save on mustering, won't be supplementing those that don't need it and can more easily wean calves to manage body condition.

Getting the sire genetics right is a key tactic



Producers are asked to question whether they are happy with herd fertility and what can be done to improve it. Picture supplied

Bulls have the most influence on the genetic progress of the breeding herd because they sire many more calves in their lifetime than a cow can birth.

We can improve fertility through bull selection if we understand the influence of genetics.

Bulls with better scrotal size estimated breeding values (EBV) produce heifers that reach puberty earlier.

Good heifer conception rates depend on having heifers cycling at the start of mating.

Be careful reading sale catalogues and data.

The actual scrotal circum-

ference measurements are not related to the fertility of heifer progeny.

This data can only be used to ensure the bull has large enough testicle to meet the demands of mating.

A negative day to calving (DTC) EBV indicates a shorter interval from the start of joining to calving.

Variation is mostly due to differences in the time taken for females to conceive after joining.

Females with shorter DTC return to oestrus sooner and conceive quicker.

Sires have a big influence on post-partum anoestrus (the period after calving

when cows do not cycle) in their first-calf daughters.

It is most pronounced in first-calf cows.

Some sire's daughters will not cycle until late in the lactation or after weaning.

This results in reduced conceptions and late conceptions.

Sires with more negative DTC EBVs produce daughters that cycle and conceive quicker after calving.

Some rules to remember when selecting bulls to drive herd fertility include:

- use bulls with above average scrotal size (SS) EBV
- use bulls with below

average days to calving (DTC) EBV

- use bulls that pass a full BBSE, including above 70 per cent normal sperm in a morphology test
- look for bulls that passed a BBSE at 600 days
- avoid bulls from dams that missed at the first rebreed
- use bulls out of dams that have had at least three calves in a row naturally
- use balance in trait selection.

Disease management will be more likely to produce good results

Vibriosis causes embryonic loss and early abortions and is a common cause of poor fertility, with heifers the most affected.

The disease is easily prevented with a bull vaccination program.

Bulls require two vaccinations six weeks apart before their first joining and an annual booster.

Problems are commonly caused by sale bulls not being vaccinated and annual boosters being missed.

Leptospirosis causes late abortions and weak calves.

It is easily prevented with cow vaccination, which also protects people handling cattle from leptospirosis.

Pestivirus is also a common fertility problem that can be prevented with vaccination.

Trichomoniasis is a less common disease spread by bulls which has similar effects to vibriosis, but no vaccine is available.

Older bulls are more prone to carrying trichomoniasis and vibriosis so culling at seven is recommended.

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FLOCK TALK

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Strike fly risk this summer

QUEENSLAND sheep and wool producers are being encouraged to keep flystrike top of mind as La Nina weather conditions persist.

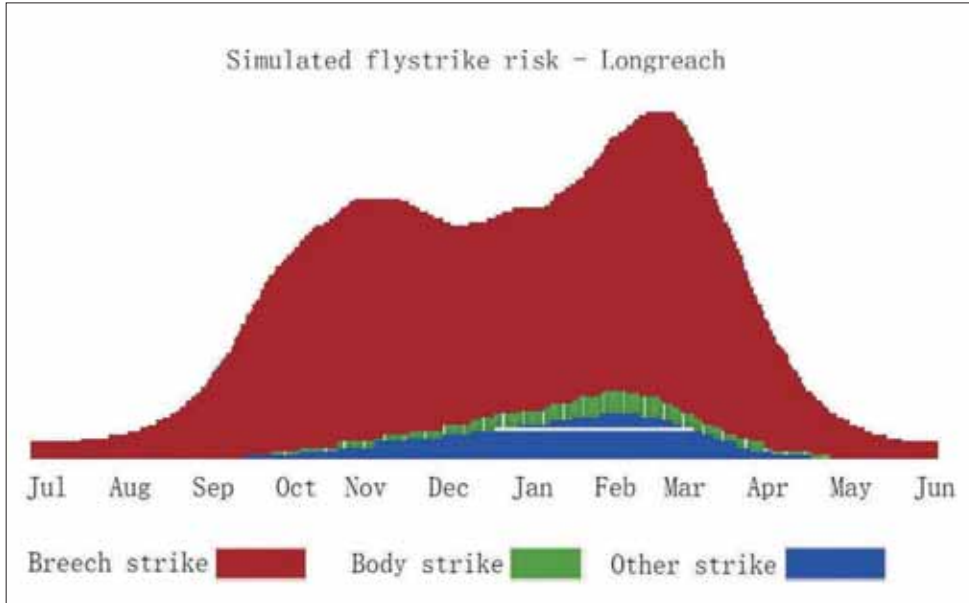
Regular and consistent rainfall that keeps the skin moist for more than two days and temperatures between 17°C and 36°C favour the proliferation of blowfly populations.

Department of Agriculture and Fisheries (DAF) extension officer, Millie Nicholls, said that with the warm, wet conditions forecast for coming months, the risk of flystrike continues to be elevated.

"Now is the time to review your flystrike mitigation plan and to assess strategies and chemical options, considering recent usage records and ensuring you have access to those chemicals if the need arises," she said.

"Development and use of an integrated flystrike management program helps you identify well-timed, strategic activities that minimise the need for treatment.

"Tools like Flystrike Risk Simulator - which can be found under Flystrike Quick



A graph showing historical flystrike risk in the Longreach area using Flystrike Quick Tools Risk Simulator. Picture PIRSA

Tools on flyboss.com.au - can assess the effectiveness of your current flystrike management practice."

Ms Nicholls said modifying the timing of shearing or crutching and chemical

treatment by a couple of weeks can have significant implications to the protection of your flock in high-risk periods.

She said strategic shearing and crutching, correct

tail length, paddock selection, worm management to reduce scouring, applying preventative chemicals and undertaking activities to reduce fly populations can all help to prevent flystrike.

"Breeding or selecting for low breech and body wrinkle (score 1-2), or removing high-risk sheep from the flock can be considered for longer-term protection from flystrike," she said.

"Sheep previously affected by flystrike or with high wrinkle score are considered particularly high risk.

"It is worthwhile identifying sheep that have been struck to be culled.

"Monitoring stock is vital for early detection, particularly if your sheep have high susceptibility and blowflies are present."

Blowflies can be identified by fly traps and checking sheep camps or watering points for activity.

Costing the industry an estimated \$227.4 million in losses each year, the aim is to detect strike before it advances to the systemic stage.

Prevention, monitoring and treatment measures are all important.

But prevention really is key to minimise costs and production losses and maintain animal health.

Leading Sheep is a partnership between Queensland DAF and Australian Wool Innovation and is supported by AgForce.

More information: leadingsheep.com or leadingsheep@daf.qld.gov.au.

CHEMICAL CONUNDRUMS EXPLORED WHEN IT COMES TO FIGHTING FLYSTRIKE



IF YOU are noticing flystruck sheep, the New South Wales Department of Primary Industries (NSW DPI) wants to hear from you - especially if there is strike despite the use of registered chemicals.

NSW DPI, in collaboration with Australian Wool Innovation (AWI), is conducting a two-year research project across Australia to investigate blowfly resistance to flystrike chemicals.

NSW DPI researcher

Narelle Sales said a similar project conducted between 2018 and 2020 found varying levels of resistance in every submission from NSW.

The current project aims to improve understanding of the scope and level of blowfly resistance knowledge, particularly in Queensland, Tasmania and Victoria.

Ms Sales said researchers were keen to receive submissions from Queens-

land, as warmer areas may have a greater resistance problem if insecticides have been used either more intensively or more frequently due to longer flystrike seasons.

Department of Agriculture and Fisheries extension officer Millie Nicholls said knowing the level of chemical resistance in blowfly populations on your property would help you select the best chemicals - ultimately saving you

time and money.

"This is a brilliant opportunity for producers to participate in research, at no cost, with direct implications for on-farm decision-making in the selection of chemicals you use for flystrike management," she said.

It is very easy to be involved. Pick up a collection kit from Charleville or Longreach DAF offices or contact Ms Sales at narelle.sales@dpi.nsw.gov.au

FLYSTRIKE

To do list

- Check your historical flystrike risk using Flystrike Quick Tools at flyboss.com.au
- Use the simulator to compare different management strategies/timing and look up products
- Get a collection kit and submit some maggots to find out your resistance profile.



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