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The Australian Dairyfarmer

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Digital wave sweeps through genetics

THE April Australian Breeding Value release saw a major highlight with a bull achieving a genomic Balanced Performance Index ranking above 400 for the first time. This comes just 12 months after the highest ranking genomic bull was sitting on almost 350.

The rapid advancement is also evident in the list of Australian proven bulls. This year's top performer has a BPI of 353, compared with a ranking of 304 for the top bull 12 months ago.

I had a look at some old issues of the magazine from 10 years ago to see how this trend compared. Back then, not only did one bull hold the top ranking for at least two years but the ranking deviated but only a few points year on year.

DataGene's genetic evaluation manager Michelle Axford confirms the trend in the Datagene column on page 90 of this edition. Her research shows that the rate of genetic gain has sped up dramatically in the past decade. The average rate of genetic gain since 2005 has been about $15.80/year, but the current rate is more than $20, almost double that of in 2005-2009.

Although there are a number of factors at play, genomics has been a major one.

Genomics is digital-enabled technology. The complex calculations that are required to work out how the differences in DNA manifest themselves in animals require significant computing grunt.

And as my report on Kaila Colbin's address to the Australian Dairy Conference in the last issue of the magazine explained, digital-enabled technology provides for exponential change.

Ms Colbin's explanation of the concept of exponential change provides real insights into what is happening with genetic gain.

"The difference between something following a linear trajectory and something following a doubling curve (exponential growth) is the same as 30 linear steps and I am at the back of the room, 30 doubling steps and we are 26 times around the planet," she said. This exponential rate of change was particularly difficult for humans to understand, as our brains had evolved to see things in linear patterns.

'Genomics is digital-enabled technology.'

So in terms of genomics and genetic gain, it would be safe to say 'we ain't seen nothing yet'.

National Herd Improvement Association chairman Graeme Gillan also sees this trend as rapidly advancing. In the NHIA News Roundup page in this edition, he discusses the growth of semen sales in Australia and the impact of genomics on that.

He points to the potential the technology offers in for things such as the widespread introduction of other traits, such the polled gene. Interestingly the 400+ bull is a heterozygous poll animal — meaning it carries one poll gene. To some extent, this dispels the notion that polled animals offer inferior genetics.

The development of new breeding values for difficult-to-measure traits will also accelerate with this technology. Fertility, feed conversion efficiency and heat tolerance have already been delivered.

Sometimes it is easy to forget about how quickly this science has developed in under 10 years. The future is certainly exciting. D

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The Australian Dairyfarmer

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Murray Goulburn sale nears completion

Key points

- ✔ Murray Goulburn sale to Saputo a step closer
- ✔ Bob Katter threatens to block sale
- ✔ Dwindling pool of milk controlled by Australian-owned companies

By **Ashley Mackinnon**
Australian Dairy Farmers Media and communications manager

After Saputo offered an undertaking that it would divest the Koroit plant to a buyer approved by the ACCC, the competition watchdog give its support to the sale.

MURRAY Goulburn is a step closer to being sold to Canadian milk giant Saputo with the approval by both the Australian Competition and Consumer Commission and Foreign Investment Review Board of the $1.3 billion sale (at the time of going to press).

The deal has been applauded as the only way to save the iconic company. A staggering 98.13 per cent of proxy votes elected for the sale of MG's assets at an extraordinary general meeting held early April.

But there are still some opponents. Queensland MP, Katter's Australia Party leader, Bob Katter, vowed to block the sale in the federal Parliament.

"If we can't stop it with an intelligent approach then we will stop it with a blunt object," Mr Katter said. "And that is only for the time being."

Neither side paints the full picture.

The positive is every farmer will be paid between $1.15 and $1.20 for each Murray Goulburn share they own. The first cash windfall of 80 cents a share is expected to be paid just 10 days after the sale is finalised. This also includes a 40 cent step up per kilogram of milk solids and an extra 40c/kg MS milk loyalty payment for milk supplied for the 2018 financial year.

Saputo chief executive Lino A. Saputo Jr said he was confident the company would close the deal in early May.

This will mark Saputo's second Australian dairy acquisition after the company in 2014 paid more than $500 million for 87.92 per cent of Warrnambool Cheese and Butter before gaining outright ownership last year from minority shareholder Lion Dairy & Drinks.

The Australian Competition and Consumer Commission (ACCC) flagged concerns that the sale could have dire consequences for competition, with Saputo primed to gain ownership of Murray Goulburn's Koroit, Vic, plant in addition to its current Allansford, Vic, facility, both located near Warrnambool in south-west Victoria.

'Ultimately, if the sale is successful, Saputo, with its annual turnover of US$8.4 billion, will control up to three billion litres of milk — or about a third of Australia's total milk pool.'

One concern was that farmers would be paid less at least in the medium term due to a lack of competition.

However, after Saputo offered an undertaking that it would divest the Koroit plant to a buyer approved by the ACCC, the competition watchdog gave its support to the sale.

"The undertaking creates an opportunity for a viable competing milk processor to enter or expand in the local region," ACCC chairman Rod Sims said in a statement.

"When approving a new owner of Koroit, we will focus on its ability to be a strong and effective competitor for raw milk in the region."

Ultimately, if the sale is successful, Saputo, with its annual turnover of US$8.4 billion, will control up to three billion litres of milk — or about a third of Australia's total milk pool.

By contrast, the amount of milk controlled by Australian-owned dairy companies is dwindling. This is the fundamental concern of Mr Katter and other opponents of the sale.

Australian Consolidated Milk has about 330 million litres of milk with plans to build a processing plant at Girgarre, Vic, while Australian Dairy Farmers Corporation is owned by farmers and has 230 million litres of milk but no processing assets.

At its peak in 2014-15, Murray Goulburn collected more than 3.6 billion litres of milk from Australian dairyfarmers to be processed for the domestic market or exported around the world. Following the 2016 milk crisis, its intake plummeted to 2 billion litres, making the once strong co-op a shadow of its former glory.

The sale of Murray Goulburn to Saputo enables the iconic processor to remain viable, providing a continued supply chain for the Australian dairy industry. D

Leaders urged to stay course on Basin

Key points

- ✔ Murray Darling Basin Plan subject to more reviews
- ✔ Water should be able to come from a range of projects
- ✔ Dairy opposed to further government water buybacks

By **Daryl Hoey**
Australian Dairy Industry Council Water Taskforce Chair

Water should be able to come from a range of projects and alternative arrangements agreed by the States -- it does not have to be recovered solely from irrigators through on-farm projects.

THE Murray Darling Basin Plan has been subjected to countless reviews and inquiries since its inception, but the message from irrigators remains clear — we cannot abandon the plan.

A recent inquiry by the Murray Darling Basin Authority recommended slashing the water recovery target by 70 gigalitres — 18 per cent — to lessen the impact on irrigation communities.

Such a move has been supported by farmers, but it has been bitterly opposed by environmental groups and the Greens, who claim the Basin Plan is failing to deliver for the environment.

The Greens have already succeeded in having the proposed changes to the federal Water Act disallowed by the Senate, but the issue is expected to return to the upper house on May 7 and could threaten the entire Plan.

This will surely inflame tensions with Victoria and NSW. The two states have already flagged a willingness to pull the plug on the Basin Plan if the disallowance motion gets through, leaving the whole show on the brink of collapse.

An emotional response would only be a disaster for irrigation communities along the east coast. We need our political leaders to come back to the table in good faith with a vision to act on behalf of the whole community.

The Basin Plan is flexible — water should be able to come from a range of projects and alternative arrangements agreed by the States. It does not have to be recovered solely from irrigators through on-farm projects. The key is that the 'upwater' is found without negative social or economic impacts to communities along the river.

Australian Dairy Farmers has strongly advocated for the recovery of 605GL in offsets and would like to see the Basin states deliver the full 605GL to be sure no further water is recovered from irrigators.

ADF and the Australian Dairy Industry Council have remained firm in advocating to halt federal government water buybacks at 1500GL and urging the government to make clear that it will not seek to recover the additional 450GL if it would harm our farming communities.

> ***'Either way, we are faced with the prospect of more water being ripped from productive agricultural use.'***

The government is restricted by the Water Act from purchasing more than 1500GL. It has so far purchased around 1160GL and can still purchase 340GL. But the 450GL of upwater is exempt from the restriction, meaning that about 790GL could still be bought by the government.

Alternatively, the upwater can include entitlements given up by farmers in return for federal funding of on-farm upgrades. Either way, we are faced with the prospect of more water being ripped from productive agricultural use.

All states agreed to the offsets as a mechanism for achieving the goals of the plan. No State should be walking away from that agreed process now. The offsets will deliver better environmental outcomes than merely sending more water down the river and hoping for the best.

The process is now being complicated further by a South Australian Royal Commission into the Plan, which intends to invite witnesses to attend formal hearings from all four Basin states.

It is now likely this could change with the election last month of a new government in South Australia. The Australian Government is understood to be encouraging SA Premier Steven Marshall to wind back the Royal Commission's terms of reference.

This is only the latest in a series of reviews and inquiries that have for more than five years plagued the Basin Plan. Running concurrently with the Royal Commission is a federally funded review which will, again, look at the effectiveness of the Plan.

We're relying on all parties to reaffirm their commitment to the Basin Plan and reassure us that in retaining control of water, they are operating in good faith. It's time to quit the review process and continue with the agreed course.

The Plan will never be able to satisfy all parties equally. But it is vital we stick to the original goal and ensure the 2750GL target is delivered as agreed, in part through 605GL in environmental offsets. D

Call for farmers to act on climate change

Key points

- ✔ Australia highest level of climate change fatalities in developed world
- ✔ Dairy industry working to reduce greenhouse gas emissions
- ✔ Farmers need to tackle climate change head-on

AUSTRALIA'S peak dairy group is urging farmers to be more proactive in mitigating against the risks of global warming, after a new report declared Australia to be one of the developed countries most vulnerable to climate change.

The Fragile Planet report, commissioned by global bank HSBC, found that of 67 countries, Australia suffered the largest number of deaths related to climate change in the developed world, with the number of fatalities jumping from 0.36 per cent of the population in 1997-2006 to 3.41 per cent in 2007-2016.

Australian Dairy Farmers has encouraged its members to take up initiatives aimed at reducing emissions and adapting to a hotter, more variable climate.

"The dairy industry is working in partnership with Agriculture Victoria and the Primary Industries Climate Change Centre to reduce methane emissions from dairy cattle," ADF president Terry Richardson said.

"Agriculture accounts for around 15 per cent of Australia's total greenhouse gas emissions. Most of this is methane and nitrous oxide from enteric fermentation in livestock and various farm management practices.

"As farmers, we can alter our feed types to reduce emissions in a way that won't compromise yield. We still need to conduct more research, but we are getting closer to reducing the sector's climate footprint.

"The dairy industry strives to continually reduce its environmental footprint, through uptake of new technologies, improved management and adoption of farming systems to suit climate variability.

"The renewed call for action against global warming comes as dairying communities in Victoria mount recovery efforts following bushfires across the State's south-west.

Research conducted by the CSIRO in 2016 predicted temperature increases between 0.5-2 per cent across Australia's dairy regions within 25 years.

Research is underway to reduce emission from dairy - such as this study in south-west Victoria examing nitrogen oxide losses from urine patches.

Among the findings, based on results from 40 different climate models, was that Australia would be subject to more erratic rainfall patterns, with more extreme daily weather conditions throughout most of the country and a decline in winter-spring rainfall in southern Australia.

'The dairy industry strives to continually reduce its environmental footprint ...'

"The changing climate significantly affects all Australians through increased heatwaves, more significant wet weather events and more severe fire weather conditions," CSIRO senior scientist Dr Helen Cleugh said.

"Some of the record-breaking extreme heat we have been seeing recently will be considered normal in 30 years' time. Australian temperatures will almost certainly continue to increase over the coming decades. Temperature projections suggest more extremely hot days and fewer extremely cool days."

ADF said the statistics showed farmers need now more than ever to take matters into their own hands and tackle climate change head-on.

The dairyfarmer group pointed to the Australian Government's $2.55 billion Emissions Reduction Fund (ERF) as one method to help in the battle against global warming.

The fund, which has so far secured 191.7 million tonnes of emissions reductions, provides incentives for businesses — including farmers — to adopt new practices and technologies to reduce Australia's greenhouse gas emissions.

The Commonwealth Department of Agriculture and Water Resources has used the fund to develop on-farm trials of land sector emissions and carbon storage opportunities to enhance productivity and sustainability.

The fund also provides farmers with incentives to undertake activities that store carbon or reduce emissions, such as efficient herd management.

The fund is a major part of the Australian Government's commitment to achieving its Kyoto Protocol target of reducing emissions by 5 per cent below 2000 levels by 2020 and the Paris Agreement of 26-28 per cent reduction below 2005 levels by 2030.

The government's review of its climate change policies in December 2017 found the country is on track to meeting these targets.

The Department of Agriculture and Water Resources administers an extension and outreach program to deliver information about land sector emissions management as part of the ERF.

Any farmers interested in projects to reduce emissions can get more information from <www.agriculture.gov.au/erf>.

Responding to emergency animal disease

Key points

- ✔ Distinct roles and responsibilities set for industry and government
- ✔ Industry representatives play key role in disease outbreak
- ✔ Also convey industry views on policy

By **David Inall**
Australian Dairy Farmers
Chief executive officer

IT is well recognised that Australia's geographic isolation has meant that we have relatively few of the pests and diseases that affect agricultural industries overseas.

Freedom from these pests and diseases is a vital part of the future profitability and sustainability of Australian agriculture.

An emergency animal disease (EAD) is a disease of animals considered to be of national significance because of the impacts it may have on animal health, human health, the environment or the economy.

An EAD outbreak in Australia could have impacts that last years, affecting producers, businesses that support livestock enterprises and the wider community.

To increase industry preparedness, 10 representatives from Australian Dairy Farmers (ADF), including other industry and state member organisations, recently undertook training to ensure they are equipped to take on key industry roles in the event of an outbreak of an EAD, such as foot-and-mouth disease (FMD).

The training prepares industry representatives to be appointed as liaison personnel in either a state coordination centre or local control centre; centres which are set up to manage the response to an EAD outbreak.

As distinct from other personnel in the control and coordination centres, the industry liaison representatives are responsible to the industry nominating them, ensuring there is effective communication between peak industry bodies — such as the ADF — and the centre during the disease response.

Industry liaison representatives also convey the industry's position on policy and response activities, such as disease control measures, as well as providing information about the industry to the response.

Australian Dairy Farmers industry representatives undergo training to help manage the industry response to an outbreak of a serious animal disease.

Roles and responsibilities of both industry and government during an EAD are outlined in the Emergency Animal Disease Response Agreement (EADRA), a contractual arrangement between Australian governments and livestock industries, detailing cost-sharing principles that come into effect for emergency animal diseases.

'An EAD outbreak in Australia could have impacts that last years...'

The EADRA includes commitments by affected industries to nominate representatives to undertake a number of functions in the event of an EAD response.

Training for these roles is provided by Animal Health Australia (AHA) and funded from animal health milk levies paid by the dairy industry.

Other trained industry personnel also have a major role to play.

The ADF president or a nominee will participate in the over-arching National Management Group (NMG) for the disease response.

This group includes all the chief executives of departments of agriculture, and the heads of affected industry peak councils.

The NMG is responsible for all the major decisions to be taken during the response.

The NMG also receives technical and veterinary advice from the Consultative Committee on Emergency Animal Diseases (CCEAD), which is made up of the chief veterinary officers of the Commonwealth and all state and territory governments, plus trained specialist nominees from the affected industries, including ADF if dairy is affected.

Three dairy industry veterinarians were recently trained at a CCEAD workshop in March 2018.

All industry personnel participating in these functions also complete an online foundation course developed and managed by AHA.

This course outlines how emergency animal disease responses are managed in Australia, and is open to anyone interested in arrangements for an emergency animal disease response.

This training can be accessed via the AHA website <https://www.animalhealthaustralia.com.au/emergency-animal-disease-training-program/>. D

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Maintaining a social licence to operate

By **Ian Halliday**
Managing director
Dairy Australia

Key points

- ✔ Urban population has long list of demands of dairy
- ✔ Trust can be eroded quickly
- ✔ More than half population doesn't understand how milk produced

YEARS of work to ensure dairy's nutritional bona fides are firmly planted in the Australian consumer psyche have resulted in a broad understanding that dairy is good for you. That is no longer enough.

The modern consumer wants to know more than simply whether the product on offer tastes good and is healthy. They seek answers to a broader set of questions, like whether it's ethically sourced or whether it harms the environment.

The battle for the hearts and minds of the modern consumer — and the sustainability of our industry — will be decided on our ability to continually answer those questions in a way that satisfies community expectations and retains their trust.

In the past year, Dairy Australia's marketing focus has shifted from driving consumption to maintaining a social licence to operate.

We must accept that the urban population has a long list of demands of the dairy sector and these demands won't go away.

For us to retain our social licence to operate, we must continually meet those demands or a breakdown in trust will see consumers voting against us at the checkouts or lawmakers seeking to change the way we farm.

Trust can be eroded quickly and a single event has been known to bring down an industry overnight — the NSW greyhound racing ban springs to mind.

Or it can be eroded over time with a steady stream of hard questions and negative coverage.

Regardless, if any of the issues facing our industry are allowed to reach a tipping point, the consequences will be dire.

Our Dairy Monitor tells us that public trust in the dairy industry is in decline, dropping from 70 per cent in 2011 to 63 per cent in 2017.

It is critical that everyone involved in dairy becomes more engaged in the task of reversing this trend.

'We must accept that the urban population has a long list of demands from the dairy sector and these demands won't go away.'

As proud as we are of the standards we uphold in areas such as animal welfare and environmental sustainability, we must continue striving to go beyond compliance until the community sees us as a beacon of good practice in these areas.

When we see something that doesn't meet the expectations shared by the industry and the broader community, it needs to be called out.

We need to continually demonstrate our alignment with society's values.

Another key to staying ahead of the community's expectations and keeping their trust lies in information and managing the gap between what people think happens and what actually happens in our industry.

It is easy for us to assume people know where milk comes from, how it's made and what happens on farm.

However, our research highlights the reality that more than half don't have a good understanding of how milk is produced.

In the past, it would have seemed prudent to shy away from aspects of our industry that raise difficult questions.

However, this approach has allowed animal rights and vegan groups to control the narrative around these issues with their 'awareness raising campaigns'.

For dairy to retain its social licence, we must reclaim the narrative with open, honest and transparent communication about everything we do.

We need to build awareness of all the good reasons why our practices are essential, and not let activists tell the story.

We have identified the 10 main issues affecting trust in dairy across the areas of health and nutrition, animal welfare and environmental and technological practices.

We have also undertaken a large piece of work to break down and better understand who we are talking to, what they need to know in relation to those issues and the messages and channels we need to better activate to increase their level of trust in dairy.

This research has enabled us to zero in on a group we are calling 'The Changemakers'.

They make up about 45 per cent of the population, they have a high desire to make change, an appetite for facts, are open to what we have to say and they hold influence over others.

They want to fully understand the impact of our product to their health and know that our animals are treated well, that our farmers are supported through challenging times and that our industry is environmentally sustainable.

These insights will guide Dairy Australia's approach to campaigns, digital content, issues response and media relations. While challenging conversations will be a big part of this, so too will celebrating the reasons why we are proud and passionate about this great industry. D

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Ian Halliday to step down as DA chief

Key points

- ✔ Ian Halliday to not seek contract renewal at end of year
- ✔ International search begins for new managing director
- ✔ Development and implementation of new strategic plan

DAIRY Australia has launched an international recruitment process after managing director Ian Halliday announced in April he would not seek to renew his contract when it expires at the end of the year.

After nearly nine years in the role, Mr Halliday said it was time to bring in some fresh thinking to assist the Dairy Australia board in the development and implementation of a new strategic plan.

"It has been an absolute privilege to work with the Dairy Australia team and people from right across the dairy and government sectors, and I am proud of the way we've been able to all work together through some incredibly challenging times," Mr Halliday said.

Mr Halliday said he would be working with the Dairy Australia board to ensure a smooth transition to a new managing director.

"With Jeff Odgers elected as the new chair in late 2017 and my contract coming to an end in 2018, it's time to bring in a fresh perspective," he said.

Mr Odgers praised Mr Halliday's contribution to the dairy industry during his time at the organisation.

"Ian's leadership has brought Dairy Australia closer to farmers and that has put the organisation in a stronger place," Mr Odgers said.

He said the Dairy Australia board was now focused on finding a new managing director and had engaged recruitment agency Spencer Stuart to manage the process. "There is an incredible depth of capability among the Dairy Australia staff, and the board has every confidence in them as we transition to a new leadership phase for the organisation," Mr Odgers said.

Mr Halliday joined Dairy Australia in January 2010, after a string of senior executive roles across the food-processing sector.

Ian Halliday has been managing director of Dairy Australia since 2010.

'I am proud of the way we've been able to all work together through some incredibly challenging times...'

Milk war to drive up prices

Key points

- ✔ Global price outlook firming for 2018/19
- ✔ Australian farmers may be offered higher prices as companies chase milk
- ✔ Companies starting to position on price

By **Carlene Dowie**

COMPETITION for milk in Australia is likely to drive higher prices in season 2018/19, according to industry analysts.

And the signs are there that competition is heating up with a number of companies making early announcements about prices for next season and offering 'loyalty' incentives.

Rabobank senior dairy analyst Michael Harvey said in a report released in April that the storm clouds hanging over the global dairy market were expected to clear. The report 'Australian Dairy — Let the big milk battle' said the battle between two global dairy giants — Saputo and Fonterra — looms on the horizon, while new, smaller players were also chasing milk. This would translate into higher premiums being passed on to farmers, which would help compensate for the lower commodity price.

Another industry analyst Steve Spencer agreed in his April 'Milk Price Outlook'. "Milk prices offered in 2018/19 will be influenced by likely strong ongoing competition for milk as dairy companies reshape market shares in the post-MG (Murray Goulburn) era," he said. "Saputo will be looking to rebuild milk intakes supplying its MG assets following completion of its purchase, along with increased competition from new and expanding buyers in the north and west of Victoria.

"Stronger competition has the potential to lift prices above the fundamentals reflected in our outlook."

'Milk prices offered in 2018/19 will be influenced by likely strong ongoing competition for milk ...'

Mr Harvey said — based on Rabobank's latest global commodity price forecast and assuming a spot currency rate of $US0.77 — Rabobank forecasts the global market to deliver a base farmgate milk price of $5.40 a kilogram milk solids in 2018/19, down from $5.60/kgMS this season.

"However, greater competition for milk is likely to bring higher value-add payments to Australian producers — and above those evident this season — with Rabobank forecasting an annual average farmgate range across southern Australia of $5.40-$5.90/kgMS in 2018/19," he said.

Mr Spencer's forecast is similar. "Our forecast for 2018/19 farmgate milk prices in southern regions based on market fundamentals is therefore in the range of $5.35 to $5.60/kgMS," he said.

"Companies may offer prices that differ from this forecast, which is based on industry averages, due to differences in product mix and business models."

Rabobank is forecasting domestic milk production to increase by 2.7 per cent in 2018/19 following the 3.2 per cent increase in 2017/18.

"A well-timed autumn break will be vital to setting up the season, with increased purchased feed costs and lower cull cow prices expected to place some pressure on margins," Mr Harvey said.

Australian dairyfarmers preparing for the new season would need to budget for these higher feed costs, but also factor in the cashflow implications of a conservative opening price and lower non-milk income.

"The reality is that 2018/19 may be characterised as another season of consolidation due to looming market pressure, however, margins are on track to remain above breakeven," he said.

Mr Spencer warned that there were risks to the firming global price outlook.

"There a number of wildcards that have potential to impact currencies and commodity values — chief among them is the escalating trade war between the United States and China which could undermine economic growth in key regions," Mr Spencer said.

Big battle for milk looms

A "BIG battle for milk looms" between processors to retain producers next season and to be in a position to grow their milk supply in the longer term, according to Rabobank analyst Michael Harvey.

"At the frontline of this battle are the two large international companies butting heads over milk supply, as Saputo looks to win back milk supply and Fonterra maps out capacity expansions," he said.

"The Saputo acquisition of Murray Goulburn, pending approval by the Foreign Investment Review Board, is set to fundamentally transform the ownership of the milk supply chain."

With the Murray Goulburn asset footprint having an excess capacity of more than one billion litres, Saputo would be looking to win back that lost milk supply. "And then you have a number of dairy companies that have already taken up the lost milk from Murray Goulburn and they will be determined to retain their recently-acquired milk suppliers," he said.

In the next two years, Australia's dairy processing capacity was likely to increase further, with an estimated 900 million litres of capacity to be built over that time.

"This comes off the back of one billion litres of commercially viable processing capacity coming on board in the past two seasons," Mr Harvey said.

In light of the increased processing capacity, Australia's dairy sector needed to ensure sustained milk supply growth continues. "Without a growing milk pool, the industry risks carrying too much surplus processing capacity, fuelling manufacturing inefficiencies, with the margin pressure just 'pin balling' from one processor to the next," he said.

"And this is a looming risk for the sector because if it faces another sustained period of aggressive milk pricing, it could potentially transform into an unsustainable squeeze on processors' margins and profitability."

Mr Harvey said there was no doubt that trust between farmers and dairy processors had been damaged and a rebuild remained a 'work in progress'. "Where there is a lack of trust, there will likely be a lack of loyalty and the threat of milk supply losses through supplier churn each season," he said.

Jersey Australia pushes for price reform

JERSEY Australia will push for a shake-up of the country's milk pricing system to make it simpler and fairer with more emphasis on the value of milk solids. Jersey Australia believes the current payment system is outdated, complex, confusing and doesn't accurately reflect the true component value of milk solids.

It has called for the system to better recognise the efficiencies and value generated through processing high-density milk compared with low-density milk.

Board member Jane Sykes said two reports commissioned by Jersey Australia and funded by Farming Together had shown pricing systems did not necessarily represent the current market value of milk components, to the disadvantage of Jersey farmers and other higher component producers.

The reports found that higher component milk is 8.5c/kg milk solids or 0.6c/litre of milk cheaper for processors to cart and handle. They found current milk price systems in Australia are complex and do not show transparency between the market value for milk products and the price paid to farmers for their components.

Jane Sykes says Australia's milk price payment system dates back to the 1980s.

"It is reasonable to conclude that Jersey profile milk is relatively cheaper to collect and more efficient to process in relation to yields and handling costs than lower milk solids density milk," the reports state. "There is value in high-density milk, which is not being recognised in the current payment systems, to the disadvantage of Jersey farmers."

Ms Sykes said Australia's payment system dates back to the 1980s. "Back then fat was seen as the least desirable product and was priced accordingly. Over the past few years there have been major shifts in the milk market but our prices don't reflect that. The fairest and simplest thing to do is make it a single price for milk solids, rather than individual ratios for fat and protein."

Jersey Australia is advocating simpler milk payments with one price for milk solids, butterfat and protein and an appropriate volume charge.

Early announcements

The signs that competition is intensifying began in April with several processors making early offerings for 2018/19.

Bega Cheese set the running early, announcing that the current year's pay rates would be extended to include the first three months of 2018/19.

This means it suppliers will receive at a minimum the same price they did for the same period the previous year.

Bega chair Barry Irvin said the company would continue to monitor this year's pricing and "are very conscious of the difficult cashflow conditions being experienced by many of our supply farms".

Bega also announced a "supply premium" for farmers wishing to consider longer term (two or three years) supply commitment to Bega Cheese/tatura Milk.

Burra Foods confirmed a Burra supply incentive payment for the 2018 season. This a BSI payment of 6.5c/kg fat and 14.3c/kg protein (equivalent to 10c/kgMS) would be paid on all milk solids received for the 2018 financial year season and would be made on August 15.

Fonterra announced it was again offering Australian farmers the opportunity to lock in part of their milk price through its Fixed Base Milk Price initiative.

Fixed Base Milk Price is a price risk management tool that lets farmers lock in a set price for up to 70 per cent of the season's milk, which Fonterra then works to match to customer demand.

It available to existing Fonterra farmers, as well as new suppliers who want to supply Fonterra in the next season.

Fonterra Australia's general manager farm source, Matt Watt, said the initiative would help give suppliers more certainty throughout the season by delivering a more stable income.

"Volatility in dairy is a fact of life," Mr Watt said. "From what we've seen over the last few seasons, commodity price and foreign exchange volatility is here to stay, so we want to do what we can to help our farmers manage this volatility."

Fixed Base Milk Price enables farmers to lock in part of their milk at an agreed price before the season starts.

Gippsland farmer Anthony Hill has taken up Fonterra's Fixed Base Milk Price offer every year since 2015, and said that the ability to lock in up to 70 per cent of his season's milk helps him to sleep at night. D

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Science gives dairy a credible voice

Key points

- ✔ International Dairy Federation represents global dairy supply chain
- ✔ Plays vital role in collating dairy science from different parts of the world
- ✔ Challenge is how to communicate science better in a world of fake news

EXCLUSIVE
By **Carlene Dowie**

SCIENCE is the key to the long-term sustainability of the global dairy industry, according to the new director general of the International Dairy Federation Caroline Edmond.

Ms Edmond, who took on the new role at IDF in February, speaking exclusively with the A*ustralian Dairyfarmer* from Brussels, came from Canada where she had twice held roles with Dairy Farmers of Canada.

She said it was vital IDF had a credible voice when representing the dairy industry with international policy-making organisations.

Science would also be the key to helping the industry to deal with claims made by activists and other groups about the industry.

But Ms Edmond said the challenge was to communicate this information in a world of 'fake news' where many different people and organisations were making claims and presenting alternative views.

Ms Edmond said the IDF was a unique organisation in agriculture as it represented the entire value chain at a global level.

For years it had brought together dairy experts from around the world to exchange knowledge and best practice to improve the sector.

The organisation's structure was critical to its success. National committees in each of the 47 member countries are made up of farmers, processors, researchers and others industry representatives. The national committees are represented in the IDF general assembly, which is the supreme authority.

The IDF has standing committees on four focus areas: nutrition, sustainability, dairy safety and quality and standards. Taskforces bring in experts to look at specific areas, for example, protein science or economic policy.

Caroline Edmond: We have to plan to feed world and dairy has a role to play ... it is really about feeding people.

"We have science on every aspect of dairy — we have been doing that for years," Ms Edmond said.

This meant the dairy industry was at the forefront in areas such as animal welfare and nutrition science.

'We have science on every aspect of dairy — we have been doing that for years.'

"Dairy is very good at developing science — everyone in the dairy bubble knows the progress," she said.

"But we now need to communicate it better. Not everyone (else) knows about it."

Ms Edmond said the science base gave IDF credibility when dealing with organisations such as the Organisation for Economic Co-operation and Development (OECD) or the International Standards Organisation (ISO) when those groups were looking to develop policies or standards that would apply around the globe.

IDF had an important role to play in promoting the quality of dairy as a source of nutrition. "Milk is an amazing product," she said. "We have to plan to feed world and dairy has a role to play ... it is really about feeding people."

Ms Edmond said the nutritional value of different foods was sometimes lost in arguments about the environmental impact of different industries. Assessing the impact of growing the food was only looking at one side of the equation.

Sometimes alternative products were presented as solutions but were not when their nutritional composition was taken into account.

Ms Edmond said it was vital for the dairy industry to be at the forefront of animal health and welfare. "We are all responsible for the way we farm," she said.

But there was no point in debating with animal rights activists whose agenda was the cessation of all forms of animal agriculture.

"There is no point in engaging when people are not interested in engaging — when they are positioning," she said.

"I am not saying it is easy. Our job is focusing on what we do well."

Ms Edmond said the IDF's focus on science also allowed it to function as a representative organisation, despite the differences of opinion and policy between different member countries.

For example, on the issue of global trade, where "Canada and New Zealand might be in the room together", IDF did not set policy. Rather it looked at the challenges and how these might addressed, for example, how the industry could mitigate around the volatility in the world market.

The major meeting of IDF members takes place at the World Dairy Summit, held in a different country every year.

This year's event will be held at Daejeon in South Korea from October 15-19. The theme of this year's event is Dairy for the Next Generation and it will feature former secretary-general of the United Nations Ban Ki-Moon at keynote speaker.

Ms Edmond said the conference would be looking at the reality of dairy in Asia — what it means as an emerging market for the global dairy industry. D

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Trends in semen sales revealed

Key points

- ✔ Sales of genomic semen continue to increase
- ✔ Sexed semen also also increasing
- ✔ Australian semen exports on the rise

By **Carlene Dowie**

THE National Herd Improvement Association's Semen Market Survey revealed strong growth in the sale of genomic semen and sexed semen in 2017. The survey also revealed a 4.8 per cent increase in dairy semen sold last year compared with the previous year.

NHIA chair Graeme Gillan said the bounce back in sales was encouraging, given the difficult period the dairy industry had been through.

The survey revealed that the gap between daughter-proven and genomic semen is continuing to narrow. "The continued increase in genomics is really pleasing because it is one of the most significant things that has happened in the whole artificial breeding industry," Mr Gillan said.

The sales were being driven by the increasing number of overseas bulls being genomically tested on the Australian Breeding Value system. "The overseas bulls would have driven genomic (semen sales) because of the much larger selection," he said. "We are talking about multinational companies that would test genomically thousands and thousands or tens of thousands of animals to start off with to end up with this small group of bulls that come into the market."

The impact of genomics was evident in the most recent ABV releases, which feature a large number of genomic bulls at more than 300 on the Balanced Performance Index.

Mr Gillan said he expected genomic semen sales would eventually surpass daughter-proven semen sales but it would flatten. Daughter-proven semen was becoming increasingly attractive to commercial farmers because it offered good value.

"The value thing is as we chase these genomic bulls, you've got the really elite group — and then you've got the next group that is still a high level and then you come down and what would have previously been the best daughter-proven bulls are actually below that," he said.

"The top end genomic bulls may range between $30 and $50 (per dose). So if you are paying $45 for a genomic bull and here's a $25 bull with daughters and you really like them, then guess what, you will continue to use some of those genetics."

'People are just being smarter about how they use sexed semen.'

The other factor that would drive sales of genomically tested semen would be the ability of farmers to be able to select for specific traits, such as a polled gene.

Sexed semen

Mr Gillan said the continued increase in sales of sexed semen was a reflection of continued development in the technology that had led to more consistent results.

If competition in this market caused its price to fall, its use would increase but this could also lead to a cap on the total sales of semen, he said.

Dairyfarmers could choose to use sexed semen across their better and more fertile females to breed their herd replacements and then use a beef bull across the rest of the herd.

"People are just being smarter about how they use sexed semen," Mr Gillan said. "It gives them the chance to get females out of their better animals versus just getting females."

Exports

The survey also revealed a big jump in semen exports from Australia — though it did not distinguish between dairy and beef semen sales.

Mr Gillan said Genetics Australia was developing growing markets in parts of the world that had similar management systems to Australia, including in South America and South Africa, while Total Livestock Genetics was developing a market in China. "It's a long road, it's hard work," he said.

Developments in ABVS, including the release of the heat-tolerance ABV and feed-saved ABV, would have a positive impact on these sales. "I think those are things that down the track have the potential to provide extra value around our breeding values to take (Australian semen) to parts of the world where that's really significant," Mr Gillan said.

"You think of the South Americas where heat happens just like we have here, the quality of feed is somewhat challenged and yet here we are able to measure more of those things."

Breeds

The survey also revealed the continuing domination of the Holstein breed in Australia. Holstein semen accounted for 79 per cent of all semen sales in Australia in 2017.

The Jersey breed was next highest at 14 per cent, followed by the Australian Red Breeds at 3 per cent. D

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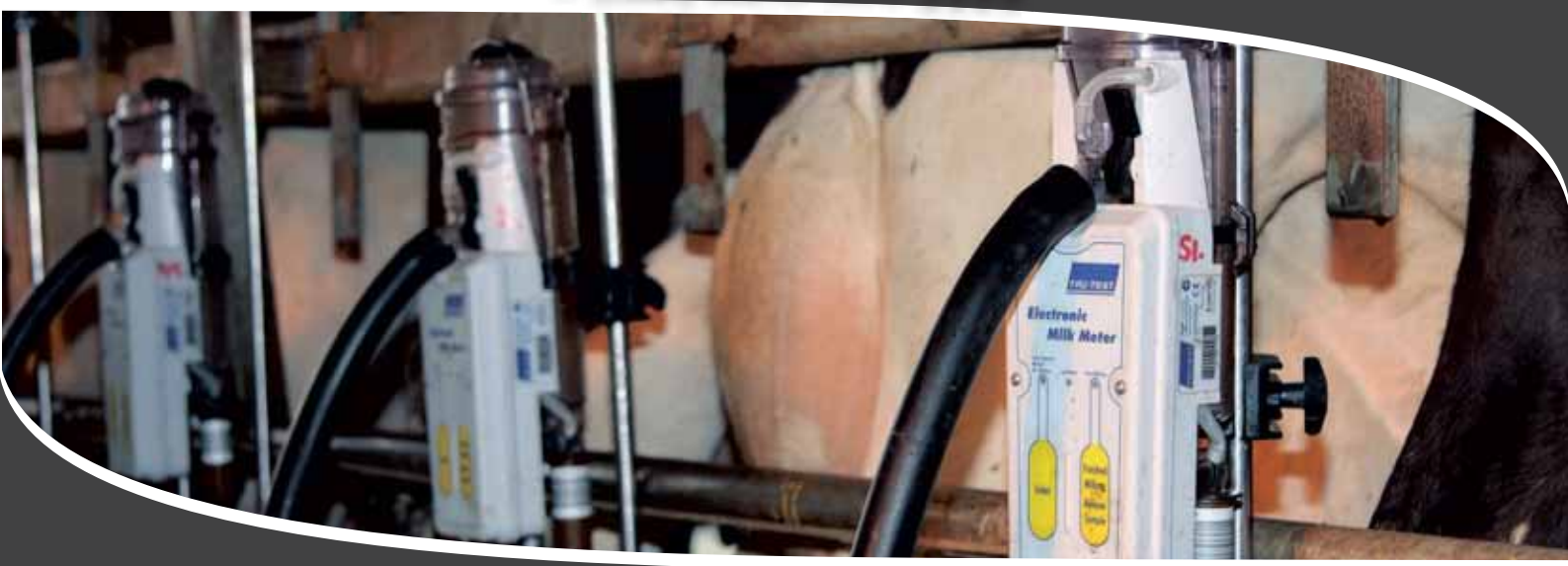

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Dairy industry rallies after fires

Key points

- ✔ Industry swung quickly into action after fires
- ✔ Fodder, generators and other assistance provided
- ✔ Farmers urged to seek assistance

Blaze Aid volunteers Tom Roscoe and John Janssens clear up burnt fence wire after the fires in South West Victoria on St Patrick's Day. Picture: Christine Ansorge

THE dairy industry quickly united behind communities impacted by the St Patrick's Day fires in Victoria's south-west, with milk companies, farmers and representative organisations joining a co-ordinated recovery effort.

As the region's dairyfarmers counted the cost of heavy stock losses, the loss of homes and farm infrastructure, a local Industry Leadership Group (ILG) started working around the clock to ensure the welfare of impacted farmers and their herds.

The group's chair, United Dairyfarmers of Victoria representative and Camperdown, Vic, farmer Cath Jenkins, said in the aftermath of the fires that the region's farmers were in desperate need of stockfeed and personal support.

"Looking after their cows is everything to these farmers and for those that have lost stock, the devastation is difficult to put into words," Ms Jenkins said.

The group's priority had been making sure all farmers who were affected could access the feed and any other help they needed to recover.

The ILG comprises local farmers, milk processors, members of Dairy Australia's WestVic regional development program, rural welfare organisations, local governments and state and federal government agencies.

Forecast fire danger meant the group was already poised to act on the night of the fires and had mobilised within hours of the fires taking hold.

By the next day, truckloads of donated fodder and power generators were on their way to a makeshift depot at Camperdown.

Ms Jenkins said the group worked hard to determine where support was needed most and get out resources as soon as they became available.

The volume of donated feed and supplies flowing in meant the Camperdown depot soon had to be relocated to Terang.

Also on the day after the fires started, nine Agriculture Victoria animal welfare teams were deployed to assess and treat injured livestock. By two days after the fire, there were 11 teams active in the area and vets from throughout the district were pitching in to help.

Milk companies provided critical support by trucking in water supplies, as damage to water infrastructure left farmers with limited water distribution throughout their properties.

The milk processors also played a critical role in overcoming communications issues, with burnt-out Telstra exchanges making it difficult to assess where support was needed.

Widespread power blackouts and a lack of generators on most farms left many farmers who were not directly hit by the fires unable to milk their cows, presenting potential animal welfare issues.

The milk companies assisted in identifying farms without access to power and sent that information back to WestVic Dairy, where with the help of UDV members, it was then used to prioritise the deployment of power generators.

WestVic Dairy regional manager Lindsay Ferguson said farms without power made arrangements to milk their cows at nearby properties. "Everywhere you look, there are farmers helping farmers, milk companies helping farmers and people right across the district doing everything they can to support locals who are going through some of the hardest times you could experience," Mr Ferguson said.

"The important thing is for the community to understand that this is far from over.

"There will be farmers needing a lot of help in the days, weeks and months ahead and they need to know that we as a community and as an industry are right there behind them."

Urged to seek

Farmers affected by the fires have been urged to ask for help despite there being others who are 'worse off'.

Relief fodder drive co-ordinator Lauren Peterson said it was important to reach out as the "reality of what has happened and the enormity of what's ahead" hits farmers.

She said most were proactive in asking for help. "At first we were really struggling," Ms Peterson said. "They were saying 'there's people worse off than me. I wasn't affected as much as others'.

"But when you drill down you realise they have been affected and it's okay to actually accept that help.

"As rural communities, we're so used to providing the services to rural towns and cities but it's a different mindset to be on the receiving end.

"I've also been asking farmers when I'm talking about their fodder needs if they're happy to have a worker contact them and I haven't had a farmer yet that's said no which is really great to see.

"Farmers live and work at the same place. It's not like other jobs where you can leave and have some relief from it. This is something they're living and breathing 24/7 especially in busy times like calving, people are stretched anyway.

"It's really important people don't hesitate to get some of that advice and information because it's definitely out there. It would be of benefit to have that discussion with someone even if you think you're up to date with what you need to do."

She said dairy support workers, who were qualified counsellors who could help with emotional and mental health needs or farm support, had been working in the region since March 25.

South West Victoria dairy support workers can be contacted on 0447 321 599 (Anne Marie) or 5564 4269 (Helen). Farmers wanting business or other support can contact the Victorian Farmers Federation on 1300 882 833.

Dairyfarmers wanting business support can contact Westvic Dairy on (03) 5557 1000 or their individual milk representatives. If anyone or someone they know needs help contact Lifeline on 13 11 14.

Anyone wanting to offer help can contact WestVic Dairy, phone (03) 5557 1000 or email <admin@westvicdairy.com.au> to find out what is required.

The herd takes shelter at John McConnell's farm near Garvoc. Mr McConnell share farms with Richard Christison and his family. The Christisons were at home when the fire swept towards their property. Photo by Richard Christison.

Close call for Garvoc family

RICHARD Christison and his family were at home when the fire swept towards their house, buildings and livestock as the St Patrick's Day fires gripped South West Victoria.

Mr Christison sharefarms a 250-cow herd for John McConnell near Garvoc, south of Terang, Vic.

He said there was little warning of the pending threat with the first warning coming at about 10.30pm on the Saturday night.

Mr Christison said they were extremely lucky to not sustain damage to buildings or the herd when a slight wind change "half way up the drive" turned the fire away.

He said his wife and children had taken shelter at the owner's house, while he set about trying to protect the property.

He did manage to extinguish running grass fires with a tractor and plough that threw dirt onto the flames.

They lost paddock feed, stored fodder and fences as well as losing power.

The biggest problem and concern for many farmers was the damage to boundary fencing to contain livestock, he said.

There was an urgent need for people to begin helping to rebuild fencing and for feed.

While the power did go off during the fire, they could still milk using a tractor power source.

Mr Christison said a big worry when the power went off was the impact on the internet signal delivering emergency messages to those in affected areas.

But thankfully the mobile phone could still receive phone messages.

"The CFA couldn't have done any more," he said. "Locals walked away from their own farms to save other people's property. It shows the dairy industry was still strong in supporting each other."

—Alastair Dowie

Anxious wait

AFTER the fire threat had passed farmers in Victoria's South West faced an anxious wait, fearing stock losses could rise. Dairyfarmer Bryan Dickson said about 100 of his cows were burnt.

"When I found them Sunday morning ... they were standing, just stunned," he said. "It was like they'd been sedated. I guess they were in shock.

"They could have internal burning of their throats and that ... you won't know if they've all survived for a couple of months. Besides your family, the cows are the second most important thing that you have. I would sooner lose my house than lose the cows."

Mr Dickson was at his Garvoc farm when the fire came through late on the Saturday night. He did not believe he received an official emergency warning until after the fire passed.

"I saw the Terang fire start and started to get nervous and then I started to see a glow ... (from) the Garvoc fire," he said. "I went to shift my milking herd and as I was shifting them I see flames 500 metres to a kilometre away from me." When he tried to move other cows to safety, "the flames were only 50 to 80 metres" away.

Victorian Farmers Federation President David Jochinke said stock losses were both emotionally and financially devastating. "You have a real deep connection with your animals," he said. "When you see them die in such tragic circumstances, you by yourself take that pain on."

—Georgie Moore

Blaze Aid offers help

By **Everard Himmelreich**

BLAZE Aid aims to raise $1 million to help South West Victoria farmers hit by the St Patrick's Day fires. Blaze Aid president Kevin Butler said the public's generosity had been "incredible" and $200,000 was raised in the first three weeks after the fire.

Mr Butler said Blaze Aid distributed funds through its Post and Wire program that helped farmers replace burnt fencing and other assets destroyed by the fires. Farmers use the vouchers to buy materials at rural merchandise and hardware stores. Each farmer receives vouchers for between $500-$2000 worth of materials, Mr Butler said.

Among those to receive vouchers was Elingamite, Vic, dairyfarmer Tim Howard, who said his would go towards replacing the three kilometres of fencing he lost when 131 hectares on his two properties were burnt in the fires.

Donations are also used to help fund the volunteer camps that Blaze Aid is running at Cobden, Terang and Macarthur. The camps, which supply volunteers with three meals a day, are expected to run for several months with each camp costing about $2000 a week to operate.

Mr Butler said he expected Blaze Aid would reach its donation target of $1 million for the fires but it might take several months.

Elingamite, Vic, dairyfarmer Tim Howard thanks Blaze Aid volunteers Sarah Butler, left, and Melissa Jones. Picture: Christine Ansorge

He said he was concerned that only 119 farmers had so far registered to receive help from Blaze Aid when he had been told 260 properties had been affected. He urged fire-affected farmers to register with Blaze Aid to receive vouchers through its Post and Wire program even if they were not receiving volunteer help from Blaze Aid.

He said some dairyfarmers were in tight financial situations and, without the vouchers, could not afford to buy materials to replace assets destroyed by the fires. D

Lending a helping hand

IT'S been a tough few years for dairyfarmers, Cobden Artificial Breeders' Russell McCann said as he was at a mate's property in the aftermatch of the fires. Mr McCann was helping move stock from scorched earth to greener pastures.

He said more should be done before the fire period to ensure blazes such as the Cobden one did not devastate properties.

Burning off on roadsides should be a high priority. "We need fuel reduction done sensibly, at an early stage," he said. Roadside slashing shouldn't be the option of choice.

Mr McCann said the fire was the last thing farmers needed, in the current economic climate. The fires were another blow to those in the agricultural industry.

Russell McCann helps to move a neighbour's cattle off to better pastures after the fires. Picture: Rob Gunstone

"Dairyfarmers have been doing it tough for a long time now," he said. "Look, it hasn't affected everyone right now, but it will in some way or another. I'd really like to see a little bit more support from all levels of government, of any political persuasion, towards agriculture. Milk prices were looking like dropping (before the fires) and there's no grass."

Mr McCann was at his house at Cobden on the Saturday night and Sunday morning when the fires were raging.

"I live on the south side of Cobden," he said. "I noticed it (the fire) behind the Cobden factory early and within two hours it was south of us. I would say it travelled 40 kilometres in two hours. There wasn't a lot of time for people to get anything."

He said he would now look to help farmers in any way he could.

"I'll help the farming community as much I can," Mr McCann said. "I'm giving a little bit of hay as well. I've got a bit for a few head of stock. I'll give what I can."

—Rachael Houlihan

Overwhelmed by generosity

By **Katrina Lovell**

COBDEN, Vic, dairyfarmer David Mitchell, who lost a year's worth of feed in the St Patrick's day fires, said he was overwhelmed with people's generosity.

A week after the fires, a convoy of 50 semi-trailers, B-doubles and smaller trailers from across the state converged on the fire zone bringing loads of hay, dog food and hampers.

South-west residents lined roadsides and waved to the passing trucks bringing supplies for the many farmers who lost stock feed.

Mr Mitchell said he was reluctant to take any hay but was talked into it. "There's heaps more worse off than us," he said. "Our farms are untouched, but we've lost our reserves of feed for a whole year in one go.

"I think it's fantastic the generosity of people. As far as I'm concerned you're in debt to these people for the rest of your life because there's going to be a lot of people wondering if they'll ever milk cows again."

As well as losing 400 rolls of silage and 1500 rolls of hay in the fire, which swept across six hectares of his outpaddock, Mr Mitchell, who is insured, lost a tractor and mower. Their two nearby dairy farms were untouched.

"We got off really lightly," he said. "Straight across the road within about 50 metres, our neighbours lost a house, and another one around the corner lost three houses."

Things had been hectic for Mr Mitchell's family even before the fires with his brother-in-law dying about a month ago, leaving them with a third dairy farm near Mortlake, Vic, to run.

He said he had been overwhelmed by the support he'd received, especially from Simpson Lions Club and Heywood Agriculture, who brought down silage and hay just days after the blaze.

In the past, Mr Mitchell had donated hay, but said the amount of hay that had arrived in the south-west from the Need for Feed convoy was "unbelievable".

Need for Feed coordinator Graham Cockerell said that while delivering hay was important, it was just as important that farmers knew that someone cared.

Truck load: Need for Feed organiser Graham Cockerell with one of a convoy of 50 trucks and trailers. Picture: Rob Gunstone

Mr Cockerell said that people were just shell-shocked.

Animal impact may last for months

THE full impact of the St Patrick's Day fire on farms will not be known for some time as the toll beyond razed properties and loss of livestock becomes clear. Terang, Vic, vet and Noorat CFA captain Dr Crag Wood said there could be impacts moving forward.

"The big one is the lack of power for a period time has affected a lot of people, and then pastures going to be a thing moving forward and getting seed in and pasture replaced," he said.

Dr Wood, who was commander of the northern sector of the Terang, Vic, fire on the Sunday and Monday of the fires, said there would be a lot of farms hit hard that weren't affected by the actual flame. "What we're seeing in dairy cows who went without power for two days, those issues are becoming quite big and substantial," he said. "There's a lot of lost income and extra cost."

He said some farms would have lost production from people having to dry off their dairy livestock early. "Even mastitis in itself is a big issue," he said.

"The other one is if they've had heifers that were in the fire ground and teat damage, which we may not find out for months until they calve.

"If they've got teat damage and then they calve, they potentially may not be able to be milk."

Dr Wood said the livestock losses were huge. There were at least 3766 livestock — which includes dairy cows, beef cattle and sheep — lost in the four fires.

Fire intensity key to pasture recovery

FIRE intensity, pasture type and soil fertility are among the key factors behind survival and recovery of grasses and clover, after the recent South West Victoria bushfires. That's according to Agriculture Victoria land management extension officer Ian Gamble and leading seed producer Peter Notman.

"The hotter the intensity of the fire, the more damage it's going to do to your pasture," Mr Gamble said. "A very critical consideration is the pasture species farmers have, as is the soil fertility status of the paddock, prior to it being burned.

"If the soil has been neglected, it will very much depend on the pasture species, the fire intensity and the soil fertility."

A timely autumn break would also be a big factor in the time it will take for pasture recovery, and to assess if the paddock would need to be re-sown. Mr Gamble said the quickest way to restart pasture was to sow annual ryegrass and clover.

Notman Seeds Peter Notman said a fire that moved over the pastures quickly was less likely to cause significant damage. "I've seen fires where the burn wasn't so hot and there was only a small amount of pasture there," he said.

"Some of those pastures were good enough not to need to do anything with. When there was dry matter cover, and a slower burn, the vast majority of the pasture needed to be resown."

—Andrew Miller

Karensa Menzies in discussion with an Indian delegate following a workshop at the Australian Indian Youth Dialogue.

Patience key to opportunities in India

Key points

- ✔ Dialogue between young leaders in India and Australia
- ✔ Helps develop understanding and trust
- ✔ Big challenges in exporting to India

By **Carlene Dowie**

INDIA offers significant opportunities for the Australian dairy industry but it will take time and patience to unlock these, according to a young Australian agri-food development specialist.

Karensa Menzies, who has worked in numerous roles within the Australian dairy industry, was selected to attend the 2018 Australia India Youth Dialogue (AIYD) in India earlier this year. The AIYD is the leading bilateral young leaders' dialogue between Australia and India. Each year it brings together 15 Indians and 15 Australian's under the age of 40, all demonstrated leaders in their fields, to engage in a four-day dialogue about matters that affect the bilateral relations between the two countries.

Ms Menzies, who was selected to represent agriculture at the dialogue, which this year had a theme around digital disruption, said the dialogue aimed to foster connections between emerging leaders from the two countries. These connections would be critical in helping unlock future opportunities for both countries.

India's dairy industry faced huge challenges, she said. Although it was the largest producer of dairy in the world, it had a growing gap in meeting demand. Production growth had stagnated at about 3-4 per cent a year, while the expanding middle class was driving an increase in demand of about 8 per cent a year, particularly for higher quality products. With an emphasis on healthy lifestyle, the middle class was similar to that in Australia in that it was seeking clean, green, safe and ethically-produced food.

Ms Menzies said rising disposable income, education and 'globalisation' of the expanding middle and upper class was driving an increased awareness and focus on food quality and health as well as ethical values and considerations of the food supply chain, particularly social and environmental.

India was now the world's fastest-growing major economy, averaging more than 7 per cent growth during the past five years. Its population sits at 1.311 billion people, and is expected to overtake China's to become the largest in the world by 2022. It is also expected to have become the second largest global middle-class market by 2022, overtaking the US but falling shy of China.

"The ongoing challenge with com-

'Say camembert cheese or other perishable dairy products — you actually don't have confidence about what happens when it hits the tarmac because of their cold supply chain practices ...'

peting urbanisation and available arable land, agricultural resources and particularly (quality) water will place great pressure on India's capacity to meet the escalating, and increasingly sophisticated, food demands of its people," Ms Menzies said.

Although India aspired to significantly increase domestic dairy production toward self-sufficiency, it would appear that the demand for premium quality dairy products was growing more rapidly than local capability and capacity.

"They have a huge gap in capability," Ms Menzies said. "This might be best illustrated by the fact that the shelf life of their fresh pasteurised milk is one day. Here it's 18 days. So although quantity is obviously one side, quality is another critical side."

Ms Menzies said there were still a lot of sensitivities around trade. India's agri-food policies were skewed to supporting domestic self-sufficiency and the country the applied significant technical and non-technical barriers, including tariffs, to many agricultural imports.

The challenges with what happened to a product once it was in the country could be another hurdle for Australian dairy companies exporting there. "Say camembert cheese or other perishable dairy products — you actually don't have confidence about what happens when it hits the tarmac because of their cold supply chain practices and there's no education (about how to handle the product). So there's significant risk involved," she said.

Ms Menzies said this meant there was an opportunity in helping India build its skill and capability in the dairy sector, right across the supply chain — from animal husbandry to processing and food safety. The AIYD and the connections created out of it could play a role in that.

"Because they just don't have the capability or the capacity to produce in the quantities that are required — their high-end niche market is growing at 10 to 14 per cent a year, cheese at

Karensa Menzies discusses with a street food trader the sourcing of the raw milk and the making of the sweetened milk drink, which is served and sold in the terracotta pots/mugs in the evenings.

15-30 per cent — and you need those personal connections for that to happen," she said. "What you are building is cultural and practical understanding and trusted networks.

"Eventually as you build that capability, if you've developed understanding, that trust and the personal connections, you're in a much better position to mitigate risk and navigate exporting our high-value products."

The dialogue was an opportunity ▶

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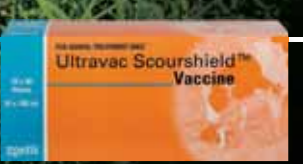

◀ to discuss the challenges of increasing urbanisation and the effect on the rural workforce and capacity in both Australia and India. The opportunities and challenges that digital technology would bring to productivity and the shape of future workforces were discussed.

"Perhaps not surprisingly, India and Australia have many similarities as well as complementary gaps (such as market size and diversity) that we can draw strength from," Ms Menzies said.

The key was understanding where the differences were and how to work with these. "Cultural understanding is a big one, and the appreciation that means to the effective implementation of knowledge, practice change, or technology requires nuanced local or regional understanding," she said. "For example, farm sizes in India range from 2-25 hectares, and the presence of formal (organised) and informal (unorganised) market channels."

It also had an impact on how distribution channels were developed. "Over here if you have a distribution channel running around Melbourne or anywhere, labour costs are a big consideration," Ms Menzies said. "So you want a truck as big as you can get to put as many crates of milk or cream or cheese or whatever in it to optimise labour. Over there, efficiencies are more about time. So you are going to have multiple channels on the back of a scooter or motorbike.

"It makes you think outside the box a bit more — it is more about disruption of processes rather than evolution."

The key to helping break down trade barriers was developing trust. "One thing is that widening gap that you need to humanise," she said. "This is what a lot of discussion was around with us young leaders.

"When you hit barriers, it is really about navigating and knowing where you have a credible source, and that this country (India) basically isn't trying to take advantage of you.

"So if you build that foundation, you kick off the platform to start building those relationships and connections at all different levels.

"Agriculture is such a sensitive issue when you are talking about the free trade agreement or equivalent ... and we need to be really respectful of the needs and drivers of both countries. To constantly be considering and aiming at mutually beneficially exchange."

Ms Menzies said the recent decision by the Indian Government to increase tariffs on pulses had shocked Australian growers. "It was a shock because our product was on the water and you can't do anything about that," she said.

Karensa Menzies at a visit to one of the more advanced dairy farms in India, in the state of Punjab. Because of the heat, dairy herds are kept under shelter with a central feeding alley where cut fresh and preserved fodder is fed.

But she said if time had been spent in developing relationships with people in their supply chain and understanding the drivers of policy decisions there, the increase might not have been such a shock.

Ms Menzies, who is now an independent consultant and contractor, has been working on projects in India for the past two years. Many of her initial contacts there had come about as a result of her previous involvement with the Nuffield scholarship program.

These have grown to expand not only a comprehensive understanding of India's contemporary dairy value chain and sector, but also broader agriculture sectors such as grains and pulses, as well as the skill development and social enterprise sectors.

"The AIYD is an experience that informs not only your ongoing (critical) thinking and your capacity to contribute meaningfully to local and global initiatives and conversations, but also a platform of tight-knit, top-notch alumni that are accessible at any time," Ms Menzies said. "This will assist me with my ongoing work between the two countries."

She also plans to share her knowledge through industry forums.

"From my personal point of view, I've been invested in and supported to participate and contribute to AIYD, so I want to be able to give back and strengthen those relationships for the broader benefit of our rural communities across Australia and India," she said. D

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Use nitrogen fertiliser best practice

Key points

- ✔ Nitrogen fertiliser best management practice reduces risk of environmental losses
- ✔ Increases efficiency and delivers greater response

Apply nitrogen to pastures with a high density of desirable (i.e. sown) species.

THE following best management practices were developed to ensure maximum nitrogen use efficiency (NUE), while also minimising avoidable environmental losses.

General guidelines for N management

Apply N strategically, rather than by fixed recipe: Before each N application estimate the likely N response (i.e. from lookup tables, experience, consultant) and compare the cost of the additional pasture produced to other purchased feed options.

Only apply N when pasture is actively growing and can utilise the N. Ensure that soil moisture is adequate to sustain the regrowth, there is likely to be rain in the regrowth period, temperatures are conducive to good pasture growth, good species composition, and good basal fertility.

Apply N at rates of 20 to 50 kilograms N/hectare per application, no closer than 21 to 28 days apart. It can also be useful combine the rate by interval as **1.0 to 1.75 kg N/ha per day.** During the peak growth period, with newer cultivars, it may be justified to increase the upper rate to 2 kg N/ha per day.

Ensure that the extra pasture grown is utilised either through grazing or as harvested forage, as utilisation has a big impact on the economics of using N.

Right Rate

The most efficient pasture growth responses occur when N fertiliser is applied at rates of between 25-50kg N/ha at any one time. This is because the steepest response to N occurs at lower rates and drops off as rates increase.

Do not apply above 50 kg N/ha in any single application and do not apply N closer than 21 days (30kg N/ha in spring) to 28 (50kg N/ha) days apart, as this will increase N losses exponentially.

The exception may be on highly productive pastures, through their peak growth period, with a newer cultivar, and where soil moisture is not limiting, then pastures may respond to rates of N fertiliser beyond 60kg N/ha per application (above 2kg N/ha/day).

Applying less than 25kg N/ha in any single application will often produce unpredictable N responses i.e. 20kg N on 2ha may produce less than 40kg N on 1ha. However, likewise 80kg N/ha on 1ha is likely to produce less than 40kg N on 2ha, due to decreasing N efficiency with increasing rate.

Right place

Apply N to pastures with a high density of desirable (i.e. sown) species. Applying N to pastures where weed species have invaded will result in larger, healthier weeds and have no beneficial effect on feed supply for grazing cows.

> ***'If irrigating, take care to avoid overwatering, as this may result in nitrate leaching.'***

Apply N to pastures with a good ground cover. Gaps or bare areas in pastures will result in more N lost through leaching and/or volatilisation.

Apply N to pastures that have no limitations to major soil nutrients. Regularly soil testing will establish the nutrient status of the soil and if other major nutrients or pH are limiting growth, these can be addressed before or at the same time as the N application.

Do not apply N to pastures that are drought stressed, or where water is running off the surface, or grazed at less than two-leaf regrowth stage for temperate grasses (e.g. ryegrass) and three-leaf stage for tropical grasses (e.g. kikuyu and paspalum).

Consider applying less N to the front half of a paddock than the back, as cows transfer N towards the gate.

Avoid applying N to animal hot spots i.e. gateways, water troughs, shelterbelts, stock camps.

Right time

Apply N as soon after grazing as possible, as this is when plants need access to N for maximum regrowth potential.

As a rule, for every day you delay applying N post-grazing, you can lose 1 per centof the potential N response.

Avoid grazing until growth has reached at least the 2.5-leaf stage for temperate grasses (e.g. ryegrass), or the three-leaf stage for tropical grasses (e.g. kikuyu, paspalum), to maximise the nitrogen use efficiency, the energy:protein ratio in the diet and therefore the amount of N excreted or lost.

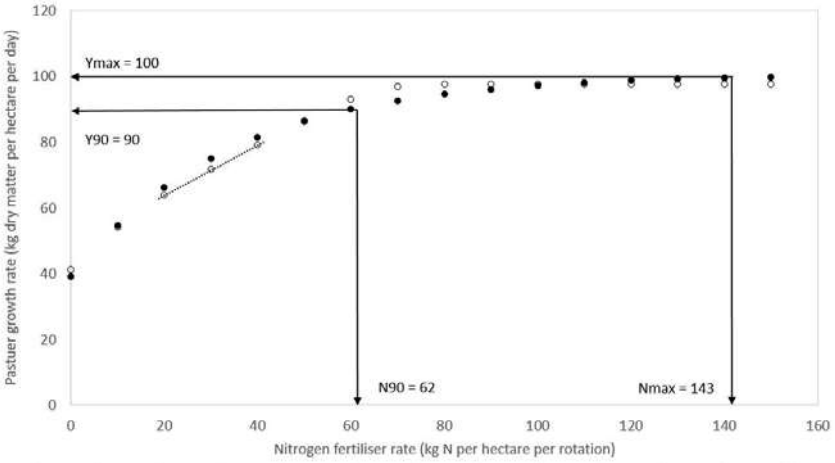
Temperate pasture grasses (e.g. ryegrass) generally respond to N fertiliser when soil temperatures are above 4 degrees Celsius, and subtropical pasture grasses (e.g. kikuyu) respond to N fertiliser when soil temperatures are above 10 degrees Celsius. Remember, this is the average soil temperature over the regrowth period, NOT just on the day of application.

Autumn and summer N responses on dryland pastures are highly dependent on adequate soil moisture.

Don't apply N unless the soil moisture is adequate, plus there is a good prospect of irrigation or rainfall to follow through the regrowth period (e.g. summer and autumn in winter rainfall regions).

If irrigating, the ensure that the irrigation season starts well before deeper soil water levels drop into the dry period, as once the soil has started to dry out it is almost impossible to apply sufficient water to restore a full profile. This has serious implications for pas- ▶

Figure 1: The steepest response to nitrogen occurs at lower rates and drops off as rates increase.



◀ ture growth and will limit the pasture response to N.

Right source

Urea is currently the cheapest pure source of N.

Assuming soil moisture is adequate for pasture growth, ammonia losses from urea fertiliser are usually not large enough to justify the unit price of other N sources.

If applying N to waterlogged soils, an ammoniated source (e.g. urea, ammonium sulphate) is better than using a nitrate source (e.g. UAN).

Phosphorus: Di-Ammonium Phosphate (DAP) is potentially the cheapest source of N, if the P is needed at the same time.

When using DAP, calculate the N rate applied and consider 'topping up' with urea to ensure an adequate N fertiliser rate i.e. 100 kg of DAP/ha will apply only 18kg N/ha, which may not produce a predictable N response.

When applying N and P fertiliser together, defer to the best management practices as applicable for minimising overland flow losses of P.

Sulphur: Low soil available sulphur (S) can reduce the response to N. Ammonium sulphate or sulphur blends can be a useful source of both N and replacing soil S, particularly where single-superphosphate has not been applied for a few years. Ammonium sulphate is an expensive form of N and it will acidify the soil rapidly with regular use.

Sulphate can also leach out from free-draining soils during high rainfall or irrigation, so only apply the sulphate when needed and at the recommended rate.

If sulphur is applied in elemental form (S) this form needs to be oxidised to sulphate before plants can use it, so apply this form well before the sulphur is needed e.g. in autumn.

Lime: Where annual N application rates exceed 250kg N/ha per year, a proactive strategy of soil testing and liming may be required to prevent soil acidification. Usually 2.5 tonnes of lime per hectare will be required every 2 to 3 years.

Managing ammonia losses

Ammonia loss is highest under hot, dry, windy, and therefore high evaporation, conditions. Urea losses are also highest during the first 48 hours after application, while the urea granule is breaking down to ammonia (called hydrolysis).

As a general principle, ammonia volatilisation losses from urea should be small, if best practice is followed i.e. do not apply urea where soil moisture is limiting, on hot and windy days with low pasture cover.

Between the cooler, wetter months (May to November in south-eastern Australia), ammonia volatilisation losses from urea fertiliser are too small to justify switching to higher-cost N fertiliser sources.

During this period, urea does not need to be watered into the soil — if there is enough soil moisture and rainfall to justify the urea, the urea will be able to absorb enough moisture to dissolve itself.

Ammonia volatilisation losses in summer, under dryland conditions, average around 14 per cent, which still does not economically justify switching to other more expensive sources of N.

Where soils are dry and temperature and evaporation is high, avoid applying urea fertiliser after a rainfall event, as this may increase volatilisation losses above 22 per cent. Under these conditions, irrigating after urea application will greatly reduce ammonia loss.

If urea fertiliser is applied in the drier months (November to March in south-eastern Australia) without irrigation, fertiliser can be applied 2-3 days before grazing to minimise wind speed at ground level and reduce ammonia volatilisation during the critical loss period (first 48 hours).

But care must be taken to avoid cows ingesting lumps of fertiliser as this could lead to ammonia toxicity.

Managing ammonia losses — spray-irrigated pastures

Apply N fertiliser within 24 hours prior to spray irrigation.

In summer, where evaporation is high, avoid applying urea fertiliser after a spray irrigation as this is likely to increase volatilisation losses.

Managing ammonia losses — flood irrigation

Urea is best applied just before irrigation but minimise run off into drains, as this will carry dissolved urea. In some cases, not fertilising the last few metres of the irrigation bay, will capture the urea dissolved in the irrigation head water. If urea fertiliser is applied after flood irrigation, soil moisture should be adequate to dissolve the urea and minimise volatilisation, but avoid wheel damage to the wet soils.

Minimising nitrate leaching and denitrification

Avoid applying N fertiliser to warm (greater than 10 degrees Celsius) waterlogged soils, as this increases the rate of denitrification. If applying N to cold, wet soils, use urea or ammonium-based fertilisers and avoid nitrate-based fertilisers such as UAN.

Avoid applying N fertiliser near streams/riparian zones and over drainage lines within a paddock.

If irrigating, take care to avoid overwatering, as this may result in nitrate leaching.

Minimising surface runoff losses

The volume of water lost as runoff determines the N lost in runoff — avoid overwatering and surface runoff.

Use a weather forecast to minimise runoff after N application. When soils are full, wait at least two days after rainfall for excess run-off water to drain, before applying N. Where possible, re-use drainage water.

Do not apply N fertiliser near drains, channels, dams, lakes or riparian areas. In a hump and hollow, avoiding applying N to the hollow as this is likely to receive N through surface movement anyway.

Dung and urine management

Minimise the time that cows spend in the laneways and ensure that run-off from laneways, feedpads, sacrifice paddocks or other standoff areas drain to pastures and not directly into waterways.

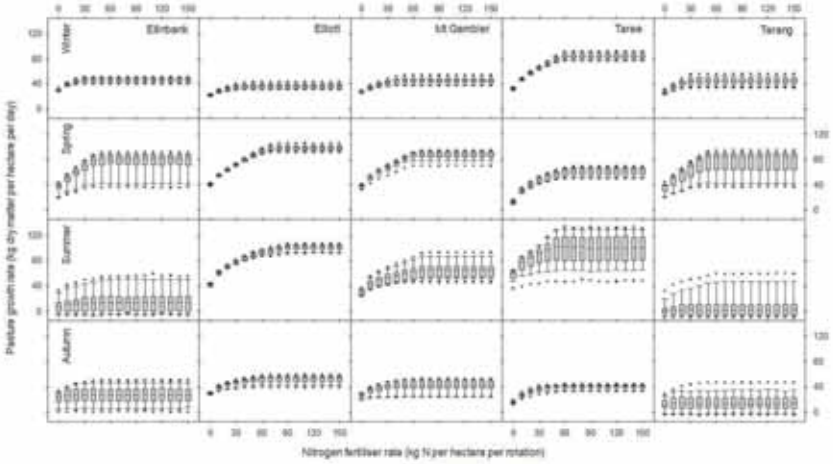
Effluent should be viewed as a valuable fertiliser resource, and nutrient testing should be used to ensure that no more than 50kg N is applied to a pasture at a time.

High stocking rates and stocking intensity will result in high losses of N from hot spots in the farm.

Contact: Professor Richard Eckard, the University of Melbourne phone (03) 9035 8264, email <Richard.eckard@unimelb.edu.au>. Website <www.crdc.com.au/more-profit-nitrogen>.

This project is supported by funding from the Australian Government Department of Agriculture and Water Resources as part of its Rural R&D for Profit Program, The University of Melbourne, Tasmanian Institute of Agriculture and Dairy Australia.

Figure 2: Different response rates to different rates of nitrogen application at different times of the year in different parts of Australia



Brad and Meagan O'Shannessy have found herd test data invaluable in making decisions about animals in their herd.

No hiding with herd testing

Key points

- ✔ Farm starts herd testing as part of ImProving Herds project
- ✔ Helps identify best and worst cows
- ✔ Pregnancy testing done through herd test

HERD testing has given Brad and Meagan O'Shannessy a quick and clear understanding of their cows' production and performance, resulting in easier culling, decision making and even pregnancy testing.

"Herd test results are our main tool when it comes to culling decisions because we have clear figures on each cow for production and cell counts," Mr O'Shannessy said. "It's always easy to identify which cows need to go."

The O'Shannessys signed up to take part in regular herd testing when they were invited to be one of the seven ImProving Herds Focus Farms in 2015.

The ImProving Herds project explored how herd test data could be used for improved farm decision making.

Mr O'Shannessy said their experience had demonstrated that herd test results gave information on cows which was undetectable by just looking at the animal — and sometimes the results were surprising.

"Even if you think you know your herd really well, you will be surprised at the results you get from herd testing," he said.

"We've had some cows which looked like they were producing really well, but were clearly not producing when you saw their herd tests figures.

"In contrast, there were some cows which looked ordinary but were producing 50 litres a day in peak lactation.

"It's the same with milk quality. You can't pick some of the cows with the higher cell counts because there are no clots or signs of clinical mastitis.

"While we've always had premium quality milk, sometimes you can start flirting with the line, so it's always good to make sure you can identify the cows which could push you over. You can pick up on cows that need to be treated or cows which have recurring subclinical mastitis and need to be culled."

The O'Shannessys now look at herd-test figures for cow production to identify cows to dry off. Any cow that has been in milk for 300 days is dried off once its milk production falls below feed costs.

This ensures feed resources are directed to the most profitable cows, which is particularly important as their farm is totally reliant on purchased water for irrigation and cows are fed 7-8 kilograms of pellets

all year round. "When water prices are high we really need to make sure we are running cows which are producing well, and the herd tests results let us identify those cows," Mr O'Shannessy said.

The O'Shannessys milk 180 cows in a split-calving herd on 97 hectares at Cooma in Northern Victoria and have recently moved to total A2 milk production.

"We've been farming for 10 years and started with help of our parents," Mr O'Shannessy said. "My parents put 80 cows into the herd while we bought in another 50-60 head and have been slowly building up ever since.

"While I came from a dairy farm, we are still learning. When you buy in cows you don't have a lot of records.

"We had only done the occasional spot test before joining the ImProving Herds project — but now we are herd testing every second month because the information it generates is helping with our farm management.

"You know a lot more about your cows and your business if you herd test."

Each ImProving Herds focus farm was given six free herd tests as well as support in interpreting the results. The O'Shannessy's local herd test centre also provided a person to take samples in the shed on herd test days.

"We operate a 20-unit swing over so the person sampling did all the work and I just wrote cow numbers on the flasks so it really didn't disrupt milking at all," Mr O'Shannessy said.

The O'Shannessys had six bi-monthly herd tests over the first year of the project and were amazed by the information it gave them.

'You know a lot more about your cows and your business if you herd test.'

"We received our results electronically on the same day as the herd test and could then either rank the cows on Excel or upload the results into EasyDairy," Mr O'Shannessy said.

"There are two main things I look at whenever we get herd test results back: the cows in the lowest 10 per cent of the herd for production, and the cows in the top 10 per cent in the herd for cell counts because these cows are the ones we need to make decisions about.

"If I wanted to get excited, then I look at the top 10 per cent of the cows for production and the lowest 10 per cent for cells counts because these cows show you what is possible."

Hassle-free preg testing*

In recent months, the O'Shannessys have also used herd testing as a way of pregnancy testing cows via milk samples.

The cost of pregnancy testing using milk samples is comparable with traditional pregnancy testing with a vet but the milk sample option has clear advantages, according to Mr O'Shannessy.

"We use fixed time AI in two joining periods and recently used herd testing in October to pregnancy test the March-April calving cows," he said.

"In the past, we would draft off these cows as they came through the dairy and hold them in the yards until the vet arrived.

"It was more work and meant that the cows that were held back in the yards lost grazing time.

"Their milk production would drop by a third at the next milking because they had been off feed and it often took a day or two to recover.

"Using herd testing to pregnancy test meant no extra handling, no stress on the cows, no time off feed and no lost production." D

Contact: DataGene, phone (03) 9032 7191 or email <abv@datagene.com.au>.

ImProving Herds is a Gardiner Foundation project in collaboration with Dairy Australia, DataGene, the Victorian Government, Holstein Australia and the National Herd Improvement Association of Australia (NHIA).

**For more information on the various pregnancy testing strategies, see the InCalf Book 2nd edition (dairyaustralia.com.au/incalfbooks) pages 159-172.*

Meagan and Brad O'Shannessy with their children Bobbi and Bella are building up their farm.

Farmers who have given the practice away discover that cows with full tails are just as easy to manage as those without.

Renewed calls to end tail docking

Key points

- ✔ 91 per cent of dairyfarmers do not dock tails
- ✔ Farmer experience shows no problem when ceasing practice
- ✔ Switch trimming an alternative practice

RESEARCH showing fewer than one-in-10 dairyfarmers still dock cows' tails has prompted renewed calls for farmers to eradicate the practice altogether.

While the latest Dairy Australia Animal Husbandry Survey found 91 per cent of dairyfarmers had stopped docking tails, it still occurs on some farms, mainly in the higher rainfall areas of Tasmania, western Victoria and Gippsland.

The Australian Animal Welfare Standards and Guidelines for Cattle only allow tail docking of cattle under veterinary advice to treat a tail injury or disease.

Compliance with these guidelines is dairy industry policy.

Andrew Lester, who chairs the Australian Dairy Farmers' Animal Health and Welfare Policy Advisory Group, said he had not experienced any problems since ceasing tail docking at his Tasmanian dairy farm 12 years ago.

"We did grapple with how we would manage mastitis and dirty udders and those sorts of things but mastitis levels haven't been elevated beyond what we had before we stopped docking," Mr Lester said.

'Two or three times a year we have an extra person in the dairy to trim the dirty and long tails...'

"We also had concerns about the operator issue of being flicked in the eye with a tail, but we've never had any damage from it."

Mr Lester said ceasing the practice altogether would be a positive step for the welfare of Australia's dairy herd.

"The tail is obviously something they need to defend themselves against insects," he said. "It's a comfort thing for them and it's probably why they have a tail in the first place.

"Two or three times a year we have an extra person in the dairy to trim the dirty and long tails so there is a cost but, when you take into account animal welfare and public perception, I think the benefits definitely outweigh that cost."

Dairy Australia's animal health and welfare policy manager Susannah Tymms said tail docking in the dairy industry was largely based on habits, attitudes and tradition, rather than good science or real need.

"Farmers who have given the practice away discover that cows with full tails are just as easy to manage as those without," she said.

"Switch trimming is one alternative, with excess tail hair trimmed once or twice per year to minimise the problem of dirty tails.

"Other strategies to manage cows without tail docking include calm, consistent milking practices, good dairy design, fly control and the use of tail clips." D

For more information on managing cows' tails go to <www.dairyaustralia.com.au/switchtrimming>.

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What the TPP means for dairy

Key points

- ✔ Revised Trans Pacific Partnership deal to be ratified by end of year
- ✔ Significant benefits to exports to Japan
- ✔ Also offer benefits in trade to other countries

WITH the Federal Parliament expected to ratify Australia's involvement in a new Trans-Pacific Partnership (TPP) by the end of the year, it is worth having a look at what it means for the dairy industry.

The main headline for the dairy sector is improved market access for Australian dairy into Japan, Australia's largest cheese export market.

Japan will eliminate a range of tariffs on cheese, covering more than $100 million of trade not covered by the Japanese-Australian Economic Partnership Agreement (JAEPA).

What it means for exports to **Japan**:

- Phase out of tariffs, over 15 years, for cheeses including natural cheese for the production of processed cheese and cheese for shredding with the exclusion of mozzarella.
- Phase out of tariffs for fresh cheese with a fat content less than 45 per cent.
- For other varieties such as processed cheese, there are modest improvements in access.
- Major liberalisation of access for whey.
- Modest tariff rate quotas established for skim milk powder and butter.

The European Union (EU) is currently negotiating a separate agreement with Japan.

In this context it was important for Australia that the TPP was agreed because it will help Australia remain competitive with EU product.

Benefits for Australian trade with other signatories include:

- **Canada** — tariff rate quota access to be established for a range of dairy products, including milk, cream, skim milk powder, whole milk powder, whey powder, butter and several cheese categories.
- **Malaysia** — quota volumes for liquid milk access.
- **Mexico** — tariff rate quotas for milk, skim milk powder and whole milk powder, evaporated milk, condensed milk, butter, and various cheese lines.
- **Peru** — tariff elimination on several products, although price band system to be retained. Products include fresh milk, milk powders, yoghurt and buttermilk, whey, butterfat, and cheeses.
- **Vietnam** — tariff elimination on various dairy lines over periods of zero to four years, including liquid milk lines, skim milk powder, whole milk powder, condensed and evaporated milk, yoghurt, buttermilk, butter, dairy spreads, anhydrous milk fat, butter oil, ghee, and several cheese lines.

Australia and its fellow TPP signatories account for nearly 15 per cent of all global trade.

'The main headline for the dairy sector is improved market access for Australian dairy into Japan, Australia's largest cheese export market.'

The withdrawal of the United States from the TPP last year put the treaty in doubt until Australia and 10 other Pacific Rim nations agreed on a revised deal at a meeting in Chile in March.

Australia and its fellow signatories, including Brunei, New Zealand, Japan, Mexico, Chile, Canada, Peru, Malaysia, Singapore and Vietnam, account for nearly 15 per cent of all global trade and 13 per cent of the world's gross domestic product.

The agreement will come into force when at least six of the 11 signatory nations have cleared a domestic ratification process.

A Joint Standing Committee of Australia's Federal Parliament is presently considering public submissions and is expected to make a recommendation on its adoption in coming months. D

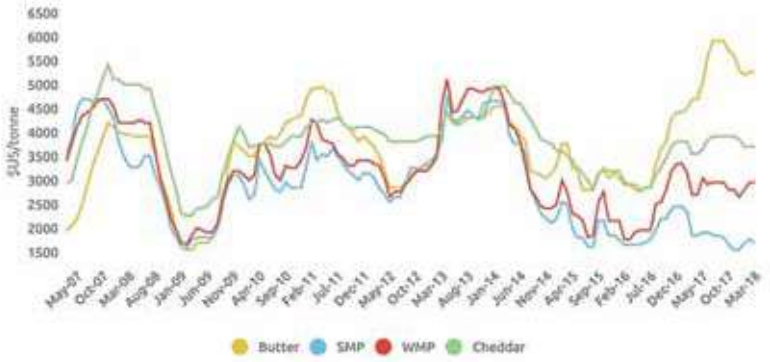
Global prices hold better than expected

By **John Droppert**
Senior industry analyst
Dairy Australia

Key points

- ✔ Commodity prices hold up better than expected
- ✔ Largely due to weather impacting production in NZ and Europe
- ✔ Demand remains 'adequate' at best, supply key factor

Figure 1: Global dairy commodity prices



WITH many Australian farmers still under pressure from a combination of older and more recent setbacks, the current steady-to-slightly-lower milk price outlook has understandably been met with gloom and disappointment. For many of those traders selling the product that funds the milk price, however, the recent steady-to-slightly-lower commodity prices have been a welcome outcome given that only a few short months ago, a wholesale easing of market values had been expected.

A wave of New Zealand milk was expected to wash across the season shoulder, crashing into an even bigger flood out of Europe and ongoing steady stream from the United States. Buyers could see this coming a mile off too, and many were holding back, while others were still priced out of the fat market altogether. Fast forward to now; the period where the New Zealand season is winding down and Europe is close to its peak.

The wave of milk from New Zealand made only a brief appearance: so far only four of the nine months of the 2017/18 season have seen production increases. Two of those were the low-volume winter months, where large percentage increases were driven by changes to winter milk incentives.

While the NZ milk price outlook has been quite favourable this season (currently NZ$6.55/kg MS; $6.64/kg MS in Australian terms), the weather has fluctuated from too wet through spring to too dry in summer, with a few damaging if localised storms thrown in. Production for the season from June to February is tracking 0.2 per cent below last year on a volume basis, and more like 1.2 per cent below on a solids basis, due to lower feed quality. With more settled weather, the balance of the season could see some improvement; but compared with the strong finish last year, the seasonal total will most likely end up lower.

In Europe, cold weather has delayed the onset of a 'proper' spring for many farmers, and production has slowed markedly as a result. The three biggest producers, Germany, France and the United Kingdom, are producing less milk than last year on a weekly basis, while sources suggest Ireland will see some sharp falls after several years of dramatic growth.

'Dairy pricing is a function of both the actual and expected supply/demand balance...'

Dairy pricing is a function of both the actual and expected supply/demand balance, and currently, it looks like the weather has gone against the expectations of many dairy buyers. European markets, especially for fats, are seeing some price gains now, as buyers who waited for further price drops have been caught short and forced back into the market in less than ideal circumstances. It's still early in the season, however, and the combination of a late, but longer, peak could still tip the balance back towards lower prices.

In the US, milk production is continuing to grow at 1-2 per cent on a year-on-year basis, but this is increasingly being directed towards manufactured products. As the economy continues to do well, US demand has outperformed expectations, but inventories are growing and exports remain a focus.

Back home, Australian milk production is ahead of expectations for the season to February, up 3.5 per cent despite especially difficult conditions in northern regions and south-west Victoria. The combination of overhanging issues, the recent fires in south-west Victoria, and concerns about profitability heading into 2018/19 are likely to weigh on production for the remaining months of the current season. Stronger prior-year values for those later months will also impact the calculated growth numbers, and all up, Dairy Australia's expectation remains for growth in milk intakes to moderate to between 2 and 3 per cent for the full 2017/18 season.

With global milk supply growing at a more leisurely pace than had been expected, the outlook for prices has become modestly more positive. The demand side of the equation hasn't warranted much commentary, because little has changed: supply is the 'swinging' factor at present.

Exports to China have fluctuated month to month, but are generally growing. Japan and Southeast Asia are generating reasonable business. The Middle East and North Africa (MENA) region remains a significant challenge. Overall, most traders are using a single word to describe demand: adequate.

Whether 'adequate' demand is enough to soak up a late spring European recovery, or a resurgent New Zealand in 2018/19 remains to be seen, but for now, the combination is enough to keep buyers on their toes. D

Mad rush to renewables

Key points

- ✔ Announcement of funding for renewable energy projects fails to address major issue
- ✔ Farm businesses hamstrung by lack of access to three-phase power
- ✔ Upgrading transmission infrastructure poles and wires better investment

By **Bruce Knowles**
Tyrendarra
United Dairyfarmers of Victoria
Wannon branch president

THE viability of the Victorian electricity transmission network remains in trouble if the funding distribution, recently announced by the State Government, from proceeds of the sale of the lease of the Port of Melbourne for Victoria Agriculture, is any indication.

Proceeds from the sale offered a once-in-a-generation opportunity for the government to take a lead and start funding vital infrastructure upgrades, for example, the much-needed infrastructure for efficient three-phase power transmission to and from regional communities.

At first glance, the government's recent announcement of a $30 million agriculture energy investment package seems a step in the right direction, but when you drill down into the detail it is sadly lacking.

The cash-rich policy promotion favours what appears to be solely a renewable extravaganza without the much needed basic and core infrastructure being in place — this is unacceptable.

"Green" energy policies might give a good feeling, but on their own, will fail to deliver efficient cheaper and reliable electricity.

There seems to be a total disregard to listen to what our regional and rural communities are telling their politicians as to what they really need to survive, thrive, attract new residents and businesses or to develop and build new businesses.

Investment into three-phase power would provide the much needed economic opportunity for these regional communities.

The existing inadequate poles and wire supply network in regional Victoria does not encourage business investment or development.

The adoption of a direct "user pays" policy forced onto consumers with regard to electricity infrastructure builds and upgrades has exacerbated the problem, resulting in a lack of long-term visionary outcomes.

While this new funding appears to be aimed at improving energy efficiency and use of new generation technology, there still remains an underlying problem in delivering and transmitting baseload electricity reliably and economically.

It is commendable that farmers will be encouraged to generate electricity on their properties, but is this solely for their own use? To maximise efficiencies from renewable generation technology it should be feasible to have on-farm energy generators feed into the state supply to bolster capacity, but in many parts of rural Victoria, this would not be achievable because of inadequate supply lines.

Upgrading transmission infrastructure poles and wires in addition to on-farm generated power to our rural communities, regions and business centres can help them thrive.

Production potential on many farms in prime dairying districts is hamstrung because the supply network is single-phase and single-wire earth return (SWER) lines. These small-capacity lines are simply unable to support efficient three-phase motors and refrigeration and certainly unable to be used as conduits for on-farm energy generators to supply the main grid.

A proposed pilot scheme costing approximately $4-5 million to connect three-phase power supply 44 kilometres along the Princes Highway to expand Narrawong-Tyrendarra-Yambuk communities should have been included in this port-lease funding package.

MP Roma Britnell is one who has voiced concern with this announced funding direction, however, we are disappointed that many leaders in our farming organisations, businesses and local shires have not openly expressed the same concern or alarm in the government's funding announcement.

This silence is deafening and I ask why is this the case? Unfortunately, many elected representatives of communities and businesses appear to be politically subdued in the presence of an ideologically influenced Victorian Government.

The talk of isolationist microgrids are a step back to the dark ages and is placing the current transmission grid at dire risk.

Bruce Knowles is calling for an upgrade to three-phase power on the local electricty grid. Picture: Rob Gunstone

Is this what regional and rural businesses and residential consumers really want, as against simply upgrading to a universal reliable and efficient electricity transmission network that has served communities and businesses relatively well throughout every other developed country? We call upon every tax-paying resident to take time to understand the ramifications of the decisions we are accepting from governments.

Our rural communities are being condemned to what could be a subsistence existence.

We ask you to call upon your councillors, advocacy groups and politicians to support a request for upgrades of the poles and wire transmission network as this would first be a far better use of taxpayer funds than joining the gravy train with bucketful loads of money into what are relatively inefficient and often only experimental hobby horse clean-energy projects.

For Australia to have such enormous mineral wealth and such vast potential for a productive land mass and then the most expensive energy in the world is beyond belief.

Our leaders influenced by ideology lack the vision with poor business acumen and foresight to plan for our children's and grandchildren's continued prosperity.

As a nation, we are slipping backwards falling far behind our world peer groups. D

Genetics Australia celebrates 60 years

Photo of VAB office in early 1960.

Key points

- ✔ Co-op formed at start of artificial breeding revolution
- ✔ Part of many significant breeding advancements
- ✔ Always at forefront of technology

IN 1958 Robert Menzies was Australia's Prime Minster, Henry Bolte was Victoria's Premier and Elvis Presley was the reigning king of rock and Marlon Brando was the Wild One.

The times were a-changing. The conservative '50s were giving way to a cultural and technological revolution.

New technology was bringing television into our homes and sending rockets into orbit, and the first microchip and computer programs were being devised.

By this time artificial breeding had started to develop on a commercial scale around the world and progressive dairyfarmers were keeping a watchful eye on developments.

On July 17, 1958, a meeting at Werribee, Vic, marked the start of what was to become the Victorian Artificial Breeders Co-operative Society Ltd (VAB) and ultimately Genetics Australia (GA).

A significant step forward in VAB's development happened in 1959 with purchase of Parwan Park, five kilometres outside of Bacchus Marsh.

Farmers showed interest and confidence in artificial breeding after the establishment of VAB and cow numbers put to AI increased rapidly.

Official opening

The VAB formally announced itself to the world with an official opening and property inspection of Parwan Park in April 1962.

About 450 visitors, including farmers, breeders, government and industry leaders, witnessed Victorian Premier Henry Bolte conduct the official opening and the crowds inspected the new facility.

Progeny testing starts

By 1960 progeny testing had started, with records being kept in an exercise book.

From the start, VAB was producing many of the Australian dairy in-

Informer son Medallion — Bundalong Marks Medallion was one of Australia first selected genomic bulls.

Former high genomic and now top proven Jersey Aussiegold is a popular choice around the world.

Caernarvon Cleitus Judge — a farmer favourite.

dustry's leading bulls. In those early years, bulls (primarily Jerseys) were selected from the best studs in Victoria.

Understandably, few were sired by AI. A basic breeding value estimation system was used.

It calculated breeding values for bulls using a contemporary comparison methodology.

During the 1960s technical advances adopted by VAB kept it at the forefront of the burgeoning AI industry and liquid nitrogen was used for the first time to cryogenically store semen.

By early 1974 mini straws had been widely adopted by Victorian semen processors, making VAB one of the first AB centres in the world to process using mini straws.

Introduction of ABVs

The Australian Breeding Value (ABV) system was introduced in the early 1980s.

ABVs were first published in 1983 and improved the accuracy of the evaluation system, and comparisons across States became possible.

The ABV system continues to provide farmers with valuable information on the most profitable bulls based on profitability and VAB/GA has always been a strong advocate for their use.

Imported genetics played an important part in the breeding program in the early 1990s, with the first major influx of US and European bloodlines.

While initial importations proved successful, they were high cost and results declined with each subsequent importation. Bulls such as Holsteins Judge and Shotime and Jerseys Dillon, Duncan and Astound proved popular.

Launching Genetics Australia

At the start of the 1990s, VAB recognised there was a need to change. The opportunity arose through negotiations with the Queensland Government for VAB to merge the genetic assets of Wacol AB Centre

The result was a real opportunity for the co-operative to see itself as a national organisation under a new organisation Genetics Australia.

The change was endorsed by the dairy industry, and a transformation in culture had begun.

Staying at the forefront of genetic improvement

GA responded by refocusing breeding objectives for selection of bulls for progeny testing to target the traits required by farmers to meet a changing industry.

In the late 1990s, domestic bulls were proving competitive with the best offshore bulls. ▶

Current GA chairman and Tinamba, Vic, dairyfarmer Trevor Henry says GA has achieved a lot in more than 60 years.

REXXP — Hindlee Powerball Planeroyal 161 is an example of the high rated genomic sires of today.

'After 60 years Genetics Australia's mission "Breeding Better Australian Herds" stands strong.'

Australian breeders rose to the challenge, combining the best imported and local sires with strong performing Australian cow families to produce bulls that are best suited to the Australian dairy system. Bulls such as Winluke and Informer are great examples of what the Australian breeding program could produce at the time.

The genomic revolution

GA has played an important role in the development of genomics in Australia. Today, all bulls are screened prior to distribution and the increase to genetic improvement is at a greater rate than when progeny testing first started nearly 60 years ago. The bulls produced in Australia are of world class and the best local and offshore bulls will continue to be used to produce high rated bulls for the industry.

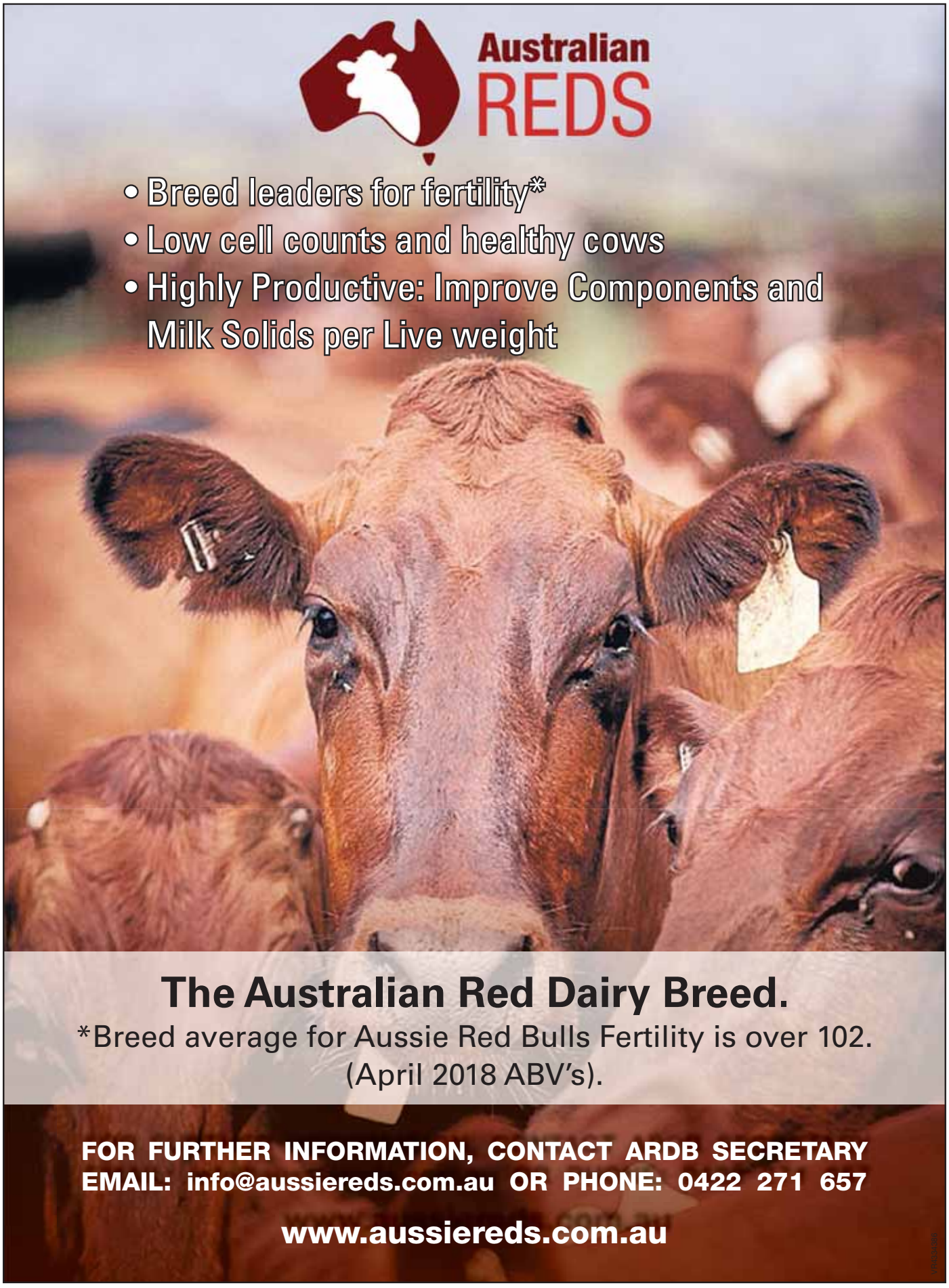
Remaining true to the founding vision

Sixty years on, Genetics Australia remains farmer-owned and true to the vision and aspirations of those who founded the co-operative in 1958. It continues to be at the forefront of technological developments in artificial breeding and remains committed to supporting the profitability of dairyfarmers

Current GA chairman and Tinamba, Vic, dairyfarmer Trevor Henry said GA had achieved a lot in more than 60 years and he looked forward to an even more challenging and exciting future. "We're moving more and more into advanced technologies with the use of genomics and the sorting and sexing of semen," Mr Henry said.

"To maintain our relevance we need to continue global collaborations and be at the forefront of all new and emerging technologies — including those we don't yet know about."

After 60 years Genetics Australia's mission "Breeding Better Australian Herds" stands strong. D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*Breed average for Aussie Red Bulls Fertility is over 102. (April 2018 ABV's).
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29H018698 *Superhero x Powerball P x Tango*

JERONIMO-P

ABS ICON SIRE

- Elite and breed leading BPI$ 402
- ABS Icon sire
- Feed saved sire
- 5-star TransitionRight® sire
  Save $100 on preventive or reactive costs per lactation
- Heterozygous polled - Pp

DAM: ABS 7726 JAZLYN P (photo Beth Herges)

29H018698 *Superhero x Powerball P x Tango*

TOPSY

- #1 Australian proven BPI$ 353
- #1 Production ~ ASI 273
- Moderate size, high mastitis resistance & adds teat length

29H016714 *Bookem x Watson x Oman*

BALISTO

- #2 Australian proven BPI$ 344
- #1 Type Weighted Index (TWI) 360
- Elite sire of sons
- 4-star TransitionRight® sire

29H016888 *Mogul x Planet x SHOTTLE*

MVP

- #3 Australian proven BPI$ 322
- High type & udder ranking
- Medium size cows with body & strength
- 4-star TransitionRight® sire

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DTR: PURNIM TOPSY CHARLES Owned by Purnim Holsteins, Vic. (photo: Bradley Cullen). DTR: LINDENRIGHT BALISTO DARCY VG-86 (photo: Vicki Fletcher).
DTR: PURNIM MVP BIOSMA Owned by Purnim Holsteins, Vic. (photo: Bradley Cullen).

- **Calving Ease**
- **A2** Sire possesses **A2A2** gene
- **Cheese Maker**
- **RSG** **Rock Solid Genetics**
- **Grazing King™**
- **Sexcel™**
- **Net Profit Genetics**
- **ABS Proven**
- **TR** **4-Star TransitionRight™ Sire**
- **Daughter Fertility**
- **P** **Polled Bull**
- **Good Bulls Guide**
- **Durabull™**
- **G** **Genomic Value**
- **TR** **5-Star TransitionRight™ Sire**
- **Feed Efficiency**
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Herd above average for heat tolerance

Key points

- ✔ Heat Tolerance Australian Breeding Value introduced last year
- ✔ Queensland herd cows up to 116
- ✔ Will look to continue to breed for this trait

NANANGO, Queensland, district dairyfarmers Ian and Cathy Scott will be looking for bulls to use over their dairy herd that are above average for the new Heat Tolerance Australian Breeding Value (ABV).

Mr Scott said that in the past they had always picked bulls on type, production and udders.

Now they will be including the new Heat Tolerance ABV as well.

"We can fly to the moon but we can't control the weather so we need to do everything possible to make things better for the cows, which includes breeding cows with good heat tolerance," Mr Scott said.

Dairyfarmer Ian Scott, Nanango, Qld, will look to breed heat tolerance in the future.

'I was surprised our herd had such high ABVs for heat tolerance, but it was very reassuring given we can have very hot weather.'

The Scotts use a number of management strategies to help their herd deal with hot conditions.

The Scotts last year received the Heat Tolerance ABV data for their herd and found most of their cows are above the Australian average, with ABVs of 100 or higher.

The Scotts milk 220 A2 cows year round and the herd includes 95 Holstein registered cows.

The herd history goes back more than 70 years under Scott family ownership.

Of the 95 registered cows in the herd, 90 had a Heat Tolerance ABV of 100 or higher. One cow had a Heat Tolerance ABV of 116. Those below 100 were only just below, with Heat Tolerance ABVs of 98 or 99.

"I was surprised our herd had such high ABVs for heat tolerance, but it was very reassuring given we can have very hot weather," Mr Scott said.

"Now that we know that our herd has high Heat Tolerance ABVs we will be making sure we use bulls that keep those ABVs high.

"Our herd can handle hot conditions as long as it cools down at night time, but we can have challenges when we experience hot spells where temperatures don't drop significantly at night."

Daytime temperatures on the Nanango farm can regularly climb above 30 degrees Celsius and are often coupled with high humidity.

There can also be periods where nighttime temperatures can stay in the mid-20s and there is no breeze.

The Scotts use a number of management strategies to help their herd deal with hot conditions.

"There is a sprinkler system over our feedpad, which we can use in hot weather, and we also have sprinklers at the dairy to help keep the cows cool," Mr Scott said.

The new Heat Tolerance ABV was included for the first time in DataGene's December release of Australian Breeding Values.

Dairyfarmers wanting to breed for improved heat tolerance look for bulls that combine a high Balanced Performance Index (BPI) with a Heat Tolerance ABV of greater than 100. D

Genetics of height in cattle unlocked

Key points

- ✔ Australian researchers lead study into cattle height
- ✔ Variants in thousands of genes responsible for differences
- ✔ Will help scientists understand inheritance of traits

SCIENTISTS have discovered that tall cows have a lot in common with tall people. Agriculture Victoria scientists have again attracted global attention for world-leading work in cattle genetics, with the recent publication of a paper in the prestigious journal *Nature Genetics*.

The paper, titled 'Meta-analysis of genome-wide association studies for cattle stature identifies common genes that regulate body size in mammals', is the world's largest-scale study into the genetic basis for body size in cattle. The research has revealed that body stature in cattle is controlled by thousands of genes, and that some of the key genes are the same as those that control height in humans.

Agriculture Victoria researcher Dr Hans Daetwyler said the finding was significant in extending understanding of the bovine genome. "In Australia, we already have a system in place for sophisticated cattle genetics," Dr Daetwyler said.

'...this research is the largest-scale study to investigate the genetic basis for height, or body stature, in cattle.'

"In recent years, we have improved the reliability of breeding values for dairy cattle, and implemented complex traits including fertility and heat tolerance.

"Height is a well-studied and complex trait in genetics. However, this research is the largest-scale study to investigate the genetic basis for height, or body stature, in cattle.

"In some mammals, height is regulated by variants in a small number of genes. However, this research found that the genetic architecture of stature in cattle is similar to that of humans, with variants in thousands of genes — and substantially the same set of genes.

"Potentially, this work has far-reaching implications. It provides a better understanding of complex bovine traits, and it also suggests that studying bovine genetics could help us better understand human genetics and the inheritance of complex traits."

The research was undertaken as part of the 1000 Bull Genomes Consortium project — an international collaboration of 36 partner institutions that has sequenced 2700 entire bull genomes since 2012, including key ancestors of the Australian dairy herd. Scientists undertook meta-analysis for stature using more than 58,000 cattle from 17 dairy and beef populations, with 25.4 million imputed whole

Research has revealed that body stature in cattle is controlled by thousands of genes.

genome sequence variants.

Agriculture Victoria scientists at the AgriBio Centre for AgriBioscience in Bundoora, Victoria, substantially contributed to the analysis, using AgriBio's next-generation sequencing and advanced scientific computing capabilities. The project was led by Professor Ben Hayes of Agriculture Victoria and the University of Queensland, and funded by the DairyBio joint venture between the Victorian Government and Dairy Australia, along with funding at consortium partners.

The article now published in Nature Genetics can be found at website <http://go.nature.com/2C9odPM>.

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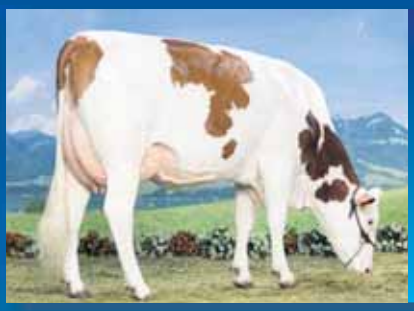


FAUCITRE ISU 134 –

High Profile Urbanitse Son.

HARVEY ISU 127 –

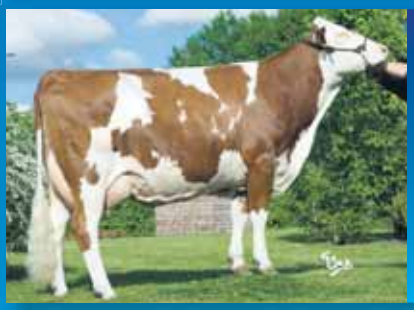
Outstanding Young A2A2 Sire.

ITALIC ISU 152 –

Udders, Temp, MS & Type.

HAFIZ ISU 133 –

Production, Components, Temp.



CRASAT ISU 141 –

One of the Breeds Best.

Auzred Xb A2A2 Sires	ISU	RRP	Volume Pack	Temp	M/S	Udders	Pro Kgs	Pro %	B/Fat Kgs	B/Fat %
ELASTAR	153	$30	$24	117	111	113	32	0.11	53	0.3
ITALIC	152	$28	$22	110	112	125	25	0.08	18	-0.03
LOGIN NEW!	146	$26	$20	120	113	107	30	0.05	29	0.04
LOTMAN NEW!	142	$28	$22	129	115	119	21	0.06	30	0.14
CRASAT	141	$32	$28	105	112	114	32	0.17	31	0.11
FAUCITRE	134	$26	$20	117	104	110	21	0.22	21	0.22
HAFIZ	133	$25	$20	116	97	109	21	0.15	19	0.12
HARVEY	127	$18	$15	112	105	107	6	0.01	3	0.02

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ABS newcomer breaks 400 BPI barrier

29HO18698 ABS Jeronimo-P is the first bull to break through the 400 Balanced Performance Index (BPI) barrier on the Australian Breeding Values (ABV).

Jeronimo-P was first identified in the ABV future stars list in December (BPI 397) and from that point breeders in Australian have been waiting patiently for his updated ranking to come through in the April rankings.

"And they weren't disappointed," ABS national sales manager Paul Quinlan said. "Jeronimo has come in at an impressive 402 BPI, a feat no other sire in the world has ever achieved or even been close to. It's an amazing accomplishment."

In 2013, as ABS was investing in elite Holstein female genetics, Richmond-FD Tango July-ET was bought, based on its genetic profile and cow family.

The female descends from the Coyne-Farms Ramos Jelly family in New York, a cow family known for healthy, fertile cows with moderate frame size and high components.

The decision was made to flush July to a polled bull, which resulted in its highest ranking heifer also carrying the polled gene.

This heifer, ABS 7726 Jazlyn-P-ET, was flushed extensively in an attempt to further improve the genetics of this family, while maintaining the traits for which it is best known.

The bull that combines the best characteristics of this breeding program is ABS Jeronimo-P. The high components, outstanding fertility and great health traits that the family transmits have been intensified in this sire.

The fact that it is also heterozygous polled and carries the A2 gene further adds to the excitement around its genetic profile.

The genomic plan ABS Australia invested heavily in has continued to deliver exciting options for Australian dairyfarmers.

The dam of outstanding Holstein newcomer 29HO18698 ABS JERONIMO-P, the first bull to break through the 400 BPI barrier, ABS 7726 Jazlyn-P-ET.

"Our plan is to always bring the very best genetics to Australia from around the world," Mr Quinlan said. "Breeding more profitable cows is our primary focus for Australian dairying and testing sires on the Australian ABV system was important to us.

"We see too many variations in overseas sires for us to work just with their country-of-origin data. We want them to genetically perform in Australia, which is predominantly a grazing environment."

Through its comprehensive global breeding program, ABS has proved there is a gene-environment correction on all sires. "We have seen this correction time and time again," Mr Quinlan said. "It doesn't mean sires that don't convert high aren't suitable but it's a very reliable guide on their transmittable profitability for the breeders and farmers in Australia."

He noted that in an increasingly difficult and challenging world market it is critical to breed animals that will outperform in each of the environments, farming systems and markets in which ABS's farming clients operate.

"We have a simple approach to what sometimes people want to make complicated when selecting sires for Australia," Mr Quinlan said. "Sort the best from the average."

ABS has the top three proven Holstein sires in 29HO16667 De-Su 11228 Topsy (353 BPI), 29HO16714 De-Su 11236 Balisto (344 BPI) and 29HO16888 Seagull-Bay MVP (322 BPI).

All these sires came through from ABS's genomic program.

Along with Jeronimo-P, ABS has sires such as 29HO17747 Cookiecutter Harper (345 BPI) adding daughters globally and in Australia soon.

"We believe our Australian team will continue to improve over time with world-class sires and exceptional cow families that transmit superior genetics for Australian dairyfarmers to improve their herds for many years to come," Mr Quinlan said.

Demand for highly profitable genetics has never been stronger and the interest in polled sires is on the increase as well.

Jeronimo-P is appealing to polled breeders as is its half-brother and double P (homozygous polled) sire 29HO18639 ABS Joppolo-PP (315 BPI), which is the highest ranked homozygous sire in Australia.

"It's a very exciting time for Australian breeders with so many sires," he said.

29JE3830 Sunset Canyon Dazzler and evergreen Cairnbrae Jaces Elton lead the ABS Australian-proven Jersey team. Dazzler excels in lowering cell count and as the one bull in Australia, it transmits excellent daughter and semen fertility. D

Article supplied by ABS Australia, website <http://www.absglobal.com/au>.

High positions for Viking Genetics

THIS April Australian Breeding Value (ABV) release has seen two Viking Sires right at the top of their respective breeds.

Holsteins: VH Booth still holds its high position of number two Balanced Performance Index (BPI) sire (BPI 349) in Australia. VH Booth has a reliable international proof with 4341 daughters and provides the type of cows most farmers are looking for, medium size frames, nice udders, strong feet and legs coupled with great production, health and longevity.

Viking has been happy with the performance of its Holstein sires in Australia. It has had 12 sires achieve Australian proofs since it opened for business in Australia nine years ago with an average BPI currently of 201, which shows a great adaption to the Australian conditions.

Reds: V Foske regains its number one BPI position with a BPI of 284 and now has 1288 Australian daughters in its proof making it a true icon of the Australian dairy industry. V Foske has been heavily utilised not only by red breed enthusiasts but also the crossbreeding sector of the industry.

It has been such a consistent sire for having high production and providing the boost in fertility and longevity for which so many farmers are looking. D

Article supplied by Viking Genetics, website <http://www.vikinggenetics.com.au/>.

SIRES FOR AUSSIE FARMERS

JERSEY

PUBLICAN

Bontino x Elton x Valerian

- No.1 Genomic Sire at +330 BPI,
- +107 type, +110 udders, +102 daughter fertility

(Bontino pictured)

JETFIGHTER

Cairnbone x Valentino x Signature

- +241 BPI, +108 type +112 udders, +104 daughter fertility
- Will increase milk and components

HOLSTEIN

CHAIRMAN

Director x Mardi Gras x Numero Uno

- +363 BPI, No.2 BPI sire.
- Semen available now
- Improves components and +114 for daughter fertility

JEDIFY

Jedi x AltaGenuity x Stokes

- NEW RELEASE A2/A2 high BPI & TPI
- +289 BPI, +114 daughter fertility

ILLAWARRA

SUNSUPMEME

Pingerly x Absolute

- From one of the best in the breed
- Now available in SexedUltra4M

BROWN SWISS

LUTHER

Bradley x Anibal x Hucos

- Ranks among the elite for kgs protein and fat.
- Will add strength, rear udders and calving ease.

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Australian-bred Red bull debuts

AUZRED Xb's AXBBlackwood (ARBBonjovi X FynAks) has debuted into the April 2018 Australian Breeding Values Red breeds list, with its first publishable proof making it one of the best Aussie Red bulls available for 2018.

Auzred XB's breeding specialist, Steve Snowdon, chose Blackwood from one of the highest genetic merit cow families in Australia, within the highly rated Aussie Red herd of Jan Raleigh, Scotts Creek in South West Victoria.

"AXBBlackwood's dam is one of the breed's best and most production efficient dams, so with his sire and maternal lines in evidence, I'm not surprised at the result," Mr Snowdon said.

AXBBlackwood's BPI is 257 with a reliability of 63 per cent, placing it in equal fourth position on BPI in the April 2018 release ABV Red breed proofs.

Mr Snowden said what was really exciting about the bull was "that his Health Weight Index (HWI) sitting on 225 and his Type Weight Index (TWI) at 278 ... makes AXBBlackwood the number one bull in those categories".

"It is also super strong on mammary with a score of 111.

"AXBBlackwood is from our 2014 Progeny Test team of Aussie Reds, some of our other bulls from team 2014 are also showing promising results so we have plenty to look forward to in the coming months," Mr Snowdon said.

An AXBBlackwood daughter in Daniel Fulkerson and Vee Fierens herd at Fish Creek, Victoria.

News on the Coopex Montbeliarde team is also positive with Auzred Xb adding three new sires to its 2018 stable of bulls, with Lotman, Login and Ilanne.

All three excel in the key areas that three-way crossbreeders seek when breeding profitable, healthy and hassle-free cows.

Temperament is at 120, 129, and 134 respectively plus high ratings for udders, milking speed and production are all strengths of these new sires. D

Article supplied by Auzred Xb, website <http://www.auzredxb.com.au>.

Semex's Genomax lineup delivers

IN the April Australian Breeding Values release, Semex's new release Balanced Performance Index (BPI) Genomax sires average close to +300 BPI, combining high components, impressive health and fertility traits along with solid overall type and mammary systems.

"These bulls are hand-selected with the Australian producer in mind," Semex's product and operations manager Tyson Shea said.

"Semex has more than 50 Genomax sires listed in the April *Good Bulls Guide*.

"The Genomax lineup globally has never been stronger with chart-toppers in all major markets, and no matter how you sort your sires, 0200HO sires rise to the top.

"We're excited to offer these genomic sires and believe in their profit potential."

Standout sires for Semex include:

• 0200HO10359 Sandy-Valley-I Paramount (Joyride x Numero Uno x Planet): Genomax, Calving Ease and GrazingPro. +305 BPI, +0.21% protein, +0.47% fat, +110 survival, +116 daughter fertility, +159 cell count.

• 0200HO10779 Progenesis Cosmic (Boastful x Mardi Gras x Numero Uno): Genomax, HealthSmart, A2A2. +299 BPI, +546 litres, +0.13% protein, +110 survival, +115 daughter fertility, +144 cell count.

• 0200HO10704 Progenesis Fergus (Silver x Halogen x O-Style): Genomax, HealthSmart, RobotReady and GrazingPro. +296 BPI, +0.18% protein, +0.24% fat, +111 survival, +109 daughter fertility , +158 cell count.

• 0200HO10767 Pen-Col Beattles (Silver x Supersire x Grafeeti): Genomax, HealthSmart, Calving Ease, RobotReady, GrazingPro. +292 BPI, +31kg fat, +0.41% fat, +0.26% protein, +109 survival, +110 daughter fertility, +151 cell count. D

Article supplied by Semex, website <www.semex.com.au>

THE Good Bulls GUIDE

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AMC	Agrimilk Consulting
AXB	Auzred XB
CRV	CRV Australia
ECL	Eclipse Genetics
GAC	Genetics Australia
GGI	GGI Australia
IRG	Ireland Genetics
LIC	Livestock Improvement
SEM	Semex Australia
SHG	Shamrock Genetics
SXT	ST Genetics Australia
TLG	Total Livestock Genetics
VIK	Viking Genetics
WWS	World Wide Sires
TBA	To BE Advised
TBA	To Be Advised

Good Bulls Guide for Holstein — Balanced Performance Index (BPI) — Australian Proven

			Indices				Production Traits				Survival		Conformation Traits			Workability				Daughter Fertility		Cell Count		Feed Saved		Source
Rank	Bull ID	Bull Name	BPI $	BPI Rel	HWI	TWI	ASI	ASI Rel	No. Dtrs	No. Herds	Sur-vival	Rel	Over Type	Mam Syst	Type Rel	Milk Spd	Temp	Like	Rel	Dtr Fert	Rel	CC	Rel	Feed Saved	Rel	
1	29HO16667	DE-SU 11228 TOPSY-ET	353	85	251	359	273	95	151	31	107	77	105	106	85	101	99	102	82	102	86	148	88	-92	42	ABS
2	29HO16714	DE-SU 11236 BALISTO-ET	344	84	264	360	224	93	71	19	108	78	106	106	87	102	102	104	77	103	86	162	89	-46	43	ABS
3	29HO16888	SEAGULL-BAY MVP-ET	322	88	245	341	193	97	294	65	110	80	110	111	91	103	104	105	89	106	84	114	89	-126	45	ABS
4	MAEBULL	CALISTER MAEBULL	309	80	276	310	132	94	112	31	109	65	104	103	76	101	100	103	74	112	74	188	77	68	39	GAC
5	TRICKIN	JET STAR MANOMAN TRICKIN	298	80	227	272	169	90	53	31	107	73	104	100	80	106	101	100	73	113	79	123	85	-60	39	GAC
6	GEEMCEE	RENGAW MANOMAN HUMMER-ET	296	78	210	229	195	92	58	26	104	65	98	100	76	100	102	102	69	109	72	154	74	-110	39	GAC
7	0200HO07450	AMIGHETTI NUMERO UNO	280	89	247	289	80	98	172	55	111	83	106	110	92	103	102	103	79	114	91	163	94	-71	45	SEM
8	COGENTTWIST	COGENT TWIST	268	91	202	253	142	99	525	82	109	88	106	101	92	101	104	103	92	107	93	140	96	-114	45	SXT
9	WRANGLER	RENGAW MANOMAN WRANGLER-ET	266	78	192	245	182	91	59	32	107	65	105	103	76	100	102	102	68	106	72	138	74	-84	39	GAC
10	011HO11138	COOMBOONA SUPERSTITION REGAL	263	87	206	288	129	98	300	65	108	79	105	105	86	102	104	104	79	108	87	189	89	-118	43	ALT
11	JANEK	RENGAW JARDIN JANEK	260	82	225	242	135	96	119	38	108	69	103	104	74	101	103	103	76	104	78	152	84	60	38	ABS
12	29HO12772	BALLYCAIRN OMAN PELLO	258	86	203	201	146	95	110	36	106	82	98	96	84	101	100	102	84	109	87	161	92	-32	42	ABS
13	HOMANIFOLD	MAINSTREAM MANIFOLD	255	91	183	237	178	99	712	64	106	91	102	103	95	99	100	103	89	109	95	131	97	-106	46	SEM
14	CARLITION	KAARMONA CARLITION	253	80	242	222	54	94	88	31	109	66	102	99	75	102	102	102	73	116	75	162	79	29	39	ABS
15	JAKOVICH	RENGAW CROWN JAKOVICH	252	74	204	232	138	90	67	21	106	57	103	102	60	103	101	103	67	107	68	124	72	6	32	AGR
16	FULLTHROTTLE	CURRAJUGLE FULL THROTTLE-IMP-ET	251	82	187	223	143	94	110	45	106	69	103	103	78	102	101	102	76	110	76	148	82	-119	40	ABS
17	0200HO06480	VAL-BISSON DOORMAN	248	87	194	288	136	96	155	48	109	82	108	111	92	95	102	104	78	106	89	191	92	-93	45	SEM
18	7H9420	FUSTEAD GOLDWYN GUTHRIE	248	92	234	300	83	99	1545	225	109	91	109	113	97	100	102	104	95	105	95	144	96	40	46	GAC
19	CHRISTMAS	EMU BANKS CHRISTMAS-ET	246	90	151	225	220	99	1148	199	101	81	106	101	95	101	101	102	96	103	88	119	92	-129	46	GAC
20	7H11351	SEAGULL-BAY SUPERSIRE	245	90	193	209	125	98	174	39	108	85	100	101	94	99	105	105	87	104	90	162	94	-86	45	GAC
21	ROYALMAN	HINDLEE GOLDWYN OMAN ROYAL 121003	245	89	203	238	115	99	702	108	104	77	104	106	93	101	102	102	93	110	83	101	90	-29	45	GAC
22	NADAL	JET STAR MANOMAN NADARL-ET	243	81	169	205	179	94	84	34	104	68	103	104	79	102	99	100	77	104	75	133	79	-97	40	GAC
23	OTTMAR	DILEE BUDDHA OLLIE 751	243	78	211	182	167	92	70	31	98	65	94	98	78	100	102	102	71	102	64	149	70	170	40	GAC
24	0200HO06267	GEN-I-BEQ LAVAMAN	233	86	191	202	139	95	108	32	104	83	103	107	87	102	97	102	80	109	90	136	94	29	43	SEM
25	29HO16909	LARCREST COMMANDER-ET	230	86	168	276	125	96	179	47	108	78	109	110	88	104	104	105	83	104	83	148	88	-178	44	ABS
26	DELSANTO	MANNA FARM DEL SANTO	226	93	176	252	170	99	3373	368	102	97	106	111	98	101	102	102	98	97	98	114	99	24	47	GAC
27	VIKBENTO	VH BENTO	221	87	161	206	162	98	326	58	106	79	102	100	82	101	102	103	85	108	86	125	90	-21	41	VIK
28	GOLDCREST	TOPSPEED GOLDYN-ET	221	82	188	184	155	95	149	48	103	71	96	100	81	103	101	103	78	98	75	131	81	128	41	GAC
29	MRSASS	JET STAR MRSAM SASS-ET	217	84	178	169	137	94	118	50	104	73	101	102	85	101	99	101	83	105	80	142	85	40	42	GAC
30	CHOCOLATE	MIDWAY PARK TENNYSON CHOCOLATE	217	79	197	221	107	92	82	31	106	68	104	106	71	102	103	103	70	108	76	93	82	82	37	ABS
31	7H9264	LIRR DREW DEMPSEY	216	90	197	252	67	98	491	110	109	88	107	110	96	101	101	102	86	105	92	164	95	-11	46	GAC
32	JUSTLE	RENGAW MOMJUSTLE	214	77	179	121	128	93	105	29	107	61	93	97	66	98	101	101	68	109	69	117	72	66	34	AGR
33	SHOLTZ	ST. CLAIR SHOLTZ-TWIN	213	88	130	178	175	98	391	87	104	78	102	100	88	98	104	104	90	102	84	149	89	-165	44	ABS
34	CHALLENGER	RENGAW MANOMAN CHALLENGER-ET	212	78	189	204	70	91	54	26	108	64	105	107	73	101	103	103	67	109	72	153	74	-37	38	GAC
35	0200HO05592	CRACKHOLM FEVER	210	92	207	238	14	99	1455	220	111	95	106	105	98	102	104	105	94	108	96	161	98	-18	47	SEM
36	7H10176	MR REGELCREEK SHOT AL	209	88	200	203	51	98	320	51	109	84	102	101	87	101	102	103	85	107	90	158	93	59	42	GAC
37	ARMAND	HILL VALLEY O ARMAND	208	78	134	156	172	91	64	24	104	65	98	99	76	103	101	101	73	100	71	134	75	-98	39	GAC
38	JESSOP	CLEVELAND PALERMO JESSOP	208	78	166	194	136	91	61	31	105	64	100	100	75	102	102	102	73	109	70	116	74	24	38	GAC

continued next page

Fertility Index

Fertility Index (FI) is the most complete way to identify bulls that will sire daughters with a high ability to get in-calf early in the mating period.

Fertility Index is made up of Daughter Pregnancy Rate (DPR) – a cow's ability to become pregnant in an estrus cycle, and CCR and HCR (Cow and Heifer Conception Rate) – the likelihood of a cow to become pregnant to a given insemination.

Genetically, do all cows in your herd have the same ability to become pregnant?

The example below shows the actual performance of the best and the worst cows, based on genomic DPR, within an 800 cow herd. Each point of DPR is expected to correspond to four fewer days open.

Qrtl	DPR Ave.	Cows	1st Service CR	All Service CR	Ave. Days Open
Highest	3.9	227	50%	48%	106
Lowest	0.0	202	30%	25%	125

The highest quarter of this herd has an average of 3.9 DPR and:

20% higher Conception Rate (CR) at 1st service.
23% higher Conception Rate over all services.
Became pregnant one cycle earlier (19 days).

High fertility cows make you money!

No farmer today can afford free loaders.

Talk to your WWS Representative about ways to improve fertility and fast track your herd's ability to become pregnant.

CODE	NAME	FERTILITY INDEX
7HO11395	MYSTIC	+5.5
7HO13398	SUPERFLY	+3.1
7HO13811	SANDOR	+2.9
7HO12974	COPYCAT	+2.9
14HO13738	EUREKA	+2.8
250HO12746	RAMBO	+2.8

04-18 CDCB-Genomic data

Green-Meadow **Mystic**
Karla, VG 86

Eureka Dam:
Oconnors Lucid Exactly, VG 87

Superfly MGD:
S-S-I Bookem Modesto
7269-ET, VG 87

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from previous page

39	VIKVHMIRACLE	VH MIRACLE	207	88	210	200	48	98	362	53	108	82	102	102	87	104	102	102	89	108	89	160	91	133	43	VIK
40	JAGGS	ADLEJAMIA JETFINN JAGGA-ET	206	76	192	194	87	89	50	26	106	64	100	106	75	102	103	104	71	106	66	118	68	83	39	GAC
41	JIFFEY	RENGAW SHOTTLE JIFFEY	206	84	195	203	33	97	227	57	110	73	99	101	75	100	102	102	81	106	82	177	89	-8	38	AGR
42	29HO16955	VIEW-HOME MONTEREY-ET	205	81	176	194	127	91	61	18	106	72	100	107	83	103	103	104	72	104	79	131	84	52	41	ABS
43	7H8081	ENSENADA TABOO PLANET ET	205	93	180	209	66	99	896	171	109	97	104	109	99	100	102	103	96	103	98	132	99	-75	47	GAC
44	WARRADYN	WARRAMONT PALERMO DYNASTY	204	80	169	190	120	93	79	27	108	66	102	100	78	102	102	102	77	102	72	136	76	51	40	GAC
45	BUDDHA	BUSHLEA PERFECTOR BOLD-ET	203	93	162	174	120	99	4343	463	103	96	101	101	99	100	102	102	99	104	98	145	99	-8	47	GAC
46	0200HO02824	SCIENTIFIC DARYL	203	88	176	256	92	97	218	74	109	82	110	109	92	98	102	104	84	108	88	156	91	-12	45	SEM
47	PICOLA	ADLEJAMIA DELSANTO PICOLA	200	90	152	181	128	99	1074	147	104	82	101	103	96	101	102	103	96	97	88	125	93	-27	46	GAC
48	MENCHOV	CARENDA PALERMO 270	200	80	161	198	85	94	105	32	108	65	103	101	77	102	103	105	75	110	69	153	72	-88	39	GAC
49	PICARDUS	PINE-TREE-PICARDUS-ET	199	84	157	196	104	95	134	46	106	76	101	105	85	102	103	103	78	102	83	120	85	-79	42	ABS
50	CRGALAXY	DE-SU FREDDIE GALAXY - ET	199	87	177	212	68	97	215	48	107	79	104	110	86	100	102	102	86	105	88	169	89	-51	43	AGR

Good Bulls Guide for Holstein — Balanced Performance Index (BPI) — Genomic ABV(g)s

			Indices				Production				Survival		Conformation Traits			Workability				Daughter Fertility		Cell Count		Feed Saved		Source
Rank	Bull ID	Bull Name	BPI $	BPI Rel	HWI	TWI	ASI	ASI Rel	No. Dtrs	No. Herds	Sur-vival	Rel	Over Type	Mam Syst	Type Rel	Milk Spd	Temp	Like	Rel	Dtr Fert	Rel	CC	Rel	Feed Saved	Rel	
1	29HO18698	ABS JERONIMO-P-ET	402	57	343	356	194	72	0	0	110	40	102	102	43	102	102	102	53	120	40	160	54	56	25	ABS
2	CHAIRMAN	ST GEN DIRECTOR CHAIRMAN-ET	363	60	295	316	200	74	0	0	109	43	100	102	45	102	102	102	55	114	43	147	57	11	26	AGR
3	SILVERLINE	GLOMAR SILVER 1717-ET	352	65	265	342	265	79	0	0	109	52	103	108	54	104	103	104	63	100	51	134	64	-8	30	GAC
4	011HO12163	PEAK ALTAANCHOR-ET	347	59	294	321	165	74	0	0	112	44	101	103	45	101	101	102	55	111	43	135	56	8	26	ALT
5	0200HO10777	WESTCOAST PERSEUS	338	63	273	291	191	76	0	0	108	49	101	104	51	100	101	103	60	116	48	169	62	-5	28	SEM
6	011HO12130	PEAK ALTAZONE-ET	337	58	278	310	136	73	0	0	112	43	104	101	45	101	102	104	55	116	41	165	55	-82	26	ALT
7	29HO18490	DE-SU 13530 SEVILLE-ET	334	64	284	296	169	77	0	0	108	50	100	102	54	101	102	103	61	113	51	165	63	41	29	ABS
8	29HO18161	MR SEAGULL-BAY SANDAL-ET	332	65	262	293	196	78	0	0	109	51	99	101	55	102	102	103	62	109	52	145	63	3	30	ABS
9	29HO18660	ABS PAULY-P-ET	332	59	291	285	130	73	0	0	110	43	101	100	46	102	102	103	56	118	42	159	56	46	26	ABS
10	29HO17919	DE-SU 12659 TACTIC	331	65	267	334	155	76	0	0	111	55	103	106	59	102	102	103	66	107	55	155	67	-95	32	ABS

Good Bulls Guide for Red Breeds — Balanced Performance Index (BPI) — Australian Proven

			Indices				Production				Survival		Conformation Traits			Workability				Daughter Fertility		Cell Count		Feed Saved		Source
Rank	Bull ID	Bull Name	BPI $	BPI Rel	HWI	TWI	ASI	ASI Rel	No. Dtrs	No. Herds	Sur-vival	Rel	Over Type	Mam Syst	Type Rel	Milk Spd	Temp	Like	Rel	Dtr Fert	Rel	CC	Rel	Feed Saved	Rel	
1	VFOSKE	V FOSKE	284	91	211	273	179	99	1288	111	108	90	104	106	90	101	102	104	96	105	95	113	97	-111	42	VIK
2	ARBABBOTT	BEAULANDS ABBOTT	267	74	189	223	261	92	75	24	94	56	95	96	66	100	100	102	70	99	55	67	70	95	32	GAC
3	ARBSCAREBEAR	JOHVILLE PARK SCAREBEAR	265	75	217	211	178	92	69	26	101	58	97	101	68	103	102	105	73	105	57	112	68	75	33	GAC
4	ARBCYGNET	BEAULANDS SWANNIES - ET	257	71	210	220	164	90	52	23	101	52	101	105	61	103	102	103	63	104	54	116	62	13	30	GAC
5	VIKFLAME	VR FLAME	196	79	159	170	123	90	60	11	103	68	100	103	67	97	99	99	78	104	75	136	87	18	34	VIK
6	ARBDAIRYWEEK	BEAULANDS DAIRY WEEK	185	73	159	171	85	92	72	25	103	50	102	106	53	100	100	102	73	100	56	108	67	-4	26	GAC
7	ARBBONJOVI	BOSGOWAN BON JOVI	183	91	138	173	114	99	2097	244	104	93	100	105	88	102	100	102	98	104	97	82	98	-47	41	GAC
8	ARBDMAX	LOUVIC D MAX	168	79	87	82	179	94	108	41	98	61	94	90	63	90	101	98	77	103	71	109	81	-73	31	GAC
9	ARBOBAMA	BEAULANDS OBAMA	165	81	135	165	111	95	158	57	105	65	99	98	63	105	99	102	86	100	76	94	84	69	31	GAC

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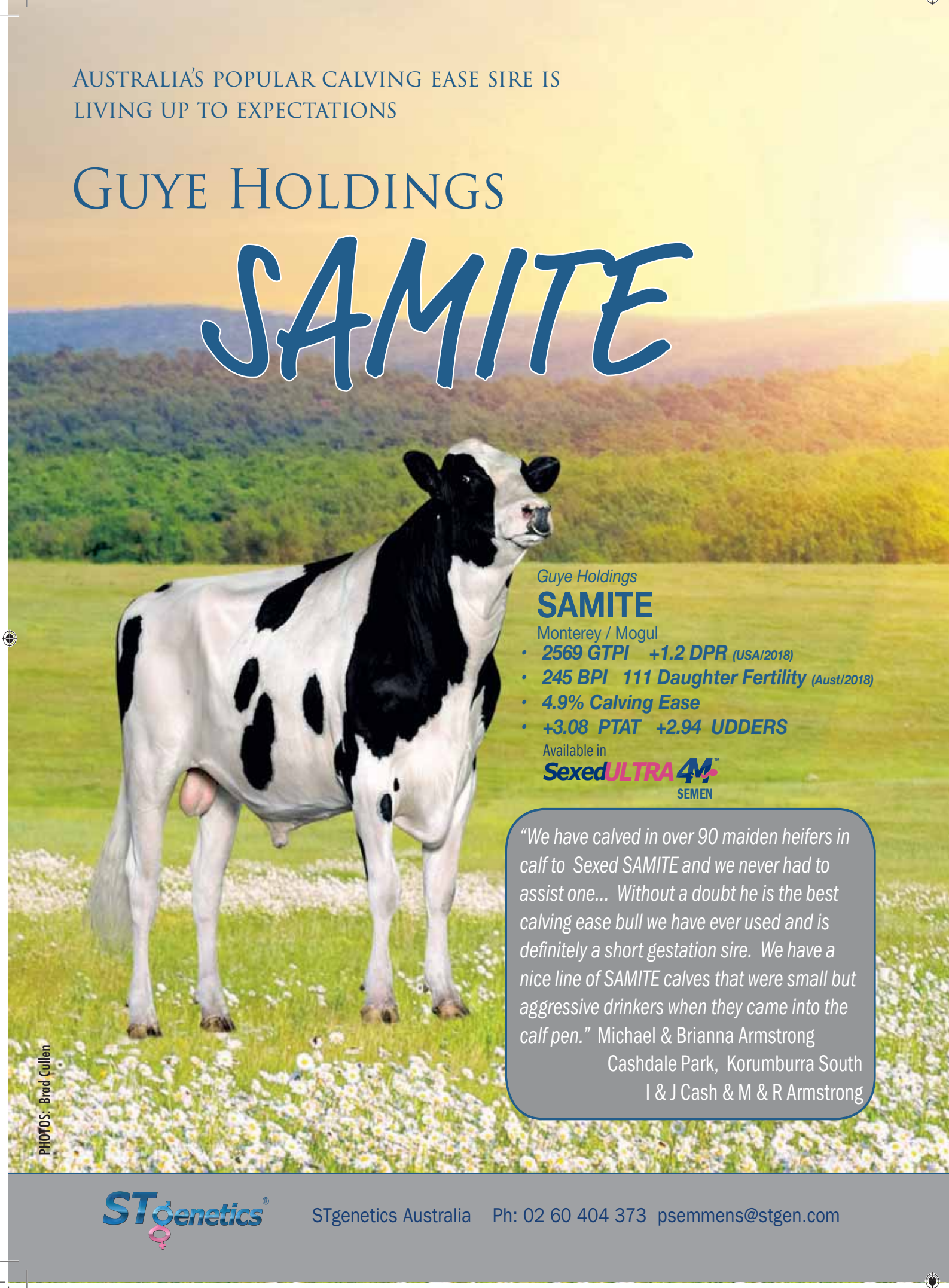

Guye Holdings

SAMITE

Monterey / Mogul

- ***2569 GTPI +1.2 DPR (USA/2018)***
- ***245 BPI 111 Daughter Fertility (Aust/2018)***
- ***4.9% Calving Ease***
- ***+3.08 PTAT +2.94 UDDERS***

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Cashdale Park, Korumburra South

I & J Cash & M & R Armstrong

PHOTOS: Brad Cullen

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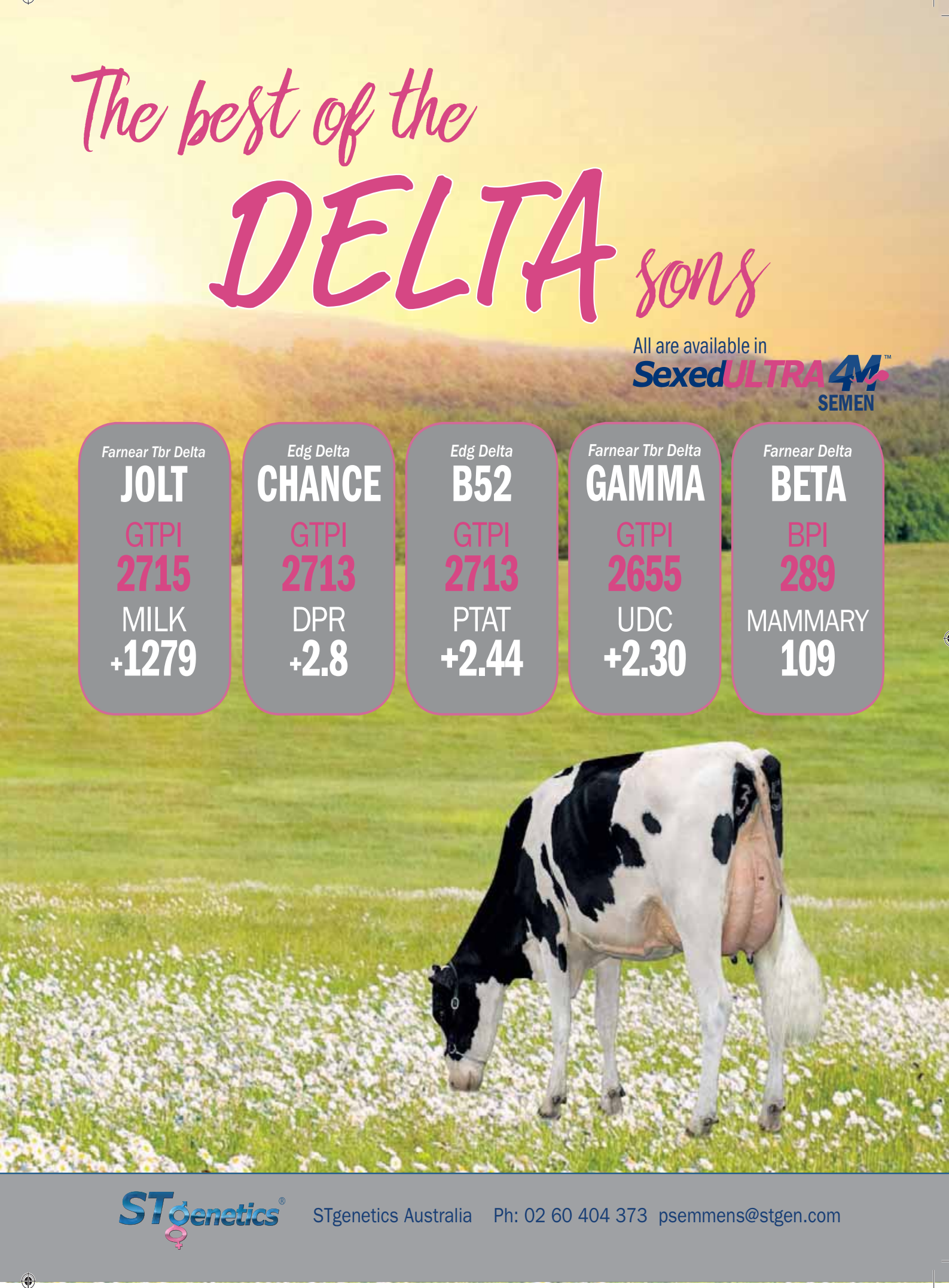
MILK +1279	DPR +2.8	PTAT +2.44	UDC +2.30	MAMMARY 109



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THE Good Bulls GUIDE

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SXT	ST Genetics Australia
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TBA	To BE Advised
TBA	To Be Advised

Good Bulls Guide for Jersey — Balanced Performance Index (BPI) — Australian Proven

			Indices				Production				Survival		Conformation Traits			Workability				Daughter Fertility		Cell Count		Feed Saved		Source
Rank	Bull ID	Bull Name	BPI $	BPI Rel	HWI	TWI	ASI	ASI Rel	No. Dtrs	No. Herds	Sur-vival	Rel	Over Type	Mam Syst	Type Rel	Milk Spd	Temp	Like	Rel	Dtr Fert	Rel	CC	Rel	Feed Saved	Rel	
1	7J1038	ALLLYNNS LOUIE VALENTINO	257	91	216	349	84	99	1020	129	113	89	117	118	97	103	106	107	95	101	93	142	97	-179	45	GAC
2	ELTON	CAIRNBRAE JACES ELTON	256	93	188	275	155	99	5531	543	105	98	108	105	97	103	105	104	99	101	99	117	99	-117	45	ABS
3	TAHBILK	BEULAH TAHBILK	230	80	168	277	136	94	126	38	108	65	110	110	76	105	107	107	79	99	69	95	79	-133	37	GAC
4	CSCAMBITION	RIVERSIDE AMBITION	226	82	216	191	89	94	114	44	104	70	100	103	77	102	97	99	80	104	78	97	83	129	37	ABS
5	CSCMELVARA	WALLACEDALE MELVARA	226	84	204	250	88	97	158	49	108	71	107	113	79	101	103	103	79	104	79	132	86	-2	38	ABS
6	7J1163	ALLLYNNS VALENTINO IRWIN	208	87	191	298	52	97	228	43	111	79	113	114	89	103	106	105	86	99	86	157	89	-68	41	GAC
7	CAIRNBONE	CAIRNBRAE TBONE ENSIGN	197	83	176	266	61	96	211	61	105	70	112	117	77	99	101	101	86	103	77	110	83	-58	37	ALT
8	7J1151	BUTTERCREST GALVANIZE	195	84	150	272	91	95	130	33	110	77	111	110	83	103	105	104	76	96	85	118	83	-144	39	GAC
9	011JE1118	ALLLYNNS VALENTINO MARVEL	193	85	180	247	59	96	181	43	109	77	108	108	81	102	105	104	83	100	86	144	90	7	38	ALT
10	AUSSIEGOLD	BROADLIN AUSSIEGOLD P-ET	192	87	131	240	98	98	331	84	108	76	111	107	85	101	103	104	90	99	82	130	90	-202	40	GAC
11	BOSMURMUR	OKURA LIKA MURMUR S3J	191	91	159	177	89	99	728	98	102	91	98	97	90	99	100	100	93	104	95	150	96	16	42	CRV
12	BARTPOWER	DARAWAY FLOWERPOWER SATIRA	184	91	192	235	27	99	1037	244	106	93	109	114	90	101	100	102	96	102	96	136	96	47	42	GAC
13	CSCEDISON	CAIRNBRAE TBONE EDISON	182	81	94	207	164	94	129	48	102	70	104	103	75	102	102	101	80	97	76	93	82	-206	36	ABS
14	CRVMARVARIE	WALLACEDALE MARVARIE ET	178	80	138	198	102	93	93	34	104	67	111	106	71	101	105	102	78	101	74	103	80	-62	34	CRV
15	BOSGREGSTAR	WHITE STAR GREG	176	88	121	119	135	98	446	97	100	82	98	95	84	101	102	102	91	100	88	111	93	-29	40	CRV
16	29JE3762	ALLLYNNS LEGAL VOLCANO-ET	172	81	144	213	76	92	54	24	107	73	107	103	80	103	103	104	70	98	83	146	84	-42	37	ABS
17	VOYAGEDALE	WALLACEDALE MELS VOYAGE	169	77	133	150	136	93	97	40	101	59	104	103	63	101	102	101	78	101	67	125	75	46	31	GAC
18	RACEWAY	ABERDEEN VALERIAN SANDOWN-ET	168	88	132	205	116	98	531	115	102	80	108	113	89	103	103	104	93	98	86	86	92	-27	42	GAC

Good Bulls Guide for Jersey — Balanced Performance Index (BPI) — Genomic ABV(g)s

			Indices				Production				Survival		Conformation Traits			Workability				Daughter Fertility		Cell Count		Feed Saved		Source
Rank	Bull ID	Bull Name	BPI $	BPI Rel	HWI	TWI	ASI	ASI Rel	No. Dtrs	No. Herds	Sur-vival	Rel	Over Type	Mam Syst	Type Rel	Milk Spd	Temp	Like	Rel	Dtr Fert	Rel	CC	Rel	Feed Saved	Rel	
1	PUBLICAN	WHITE STAR PATRICK	330	52	252	357	221	67	0	0	108	38	107	110	38	103	105	105	49	102	36	98	48	-35	18	AGR
2	NZGCRESMISTY	CRESCENT EXCELL MISTY ET	314	60	207	311	214	74	0	0	106	42	100	98	61	100	98	98	44	101	41	154	72	-173	30	LIC
3	NZGLARSON	EVLEEN INTEGRITY LARSON	299	66	171	233	274	78	11	1	104	50	96	91	60	102	101	99	48	99	54	135	91	-177	32	LIC
4	DOBSON	WHITE STAR DOORMAN	297	54	234	324	178	67	0	0	109	37	107	108	40	101	103	104	47	102	40	114	53	-40	20	GAC
5	DOUGGAN	WHITE STAR DOUGLAS	289	55	222	293	174	68	0	0	107	40	103	104	43	101	102	103	50	103	45	134	54	-58	21	GAC
6	DOUBLEUP	BROADLIN DOUBLEUP	285	58	184	234	264	75	2	2	103	40	100	100	43	102	100	102	55	106	41	95	54	-47	21	GAC
7	SANDBANK	ARALUEN PARK HATMAN SANDBANK	282	58	209	295	187	72	0	0	107	43	106	107	45	101	101	103	56	102	42	91	54	-71	22	GAC
8	CRVTRIPLSTAR	BRAEDENE PAS TRIPLESTAR	274	63	179	263	236	75	0	0	102	47	100	100	59	105	101	101	49	101	46	101	76	-66	30	CRV
9	ALGERNON	BROADLIN HILUX	272	55	208	276	182	70	0	0	106	39	104	109	41	102	101	104	52	102	37	93	50	-33	20	GAC
10	0200JE00230	BUTTERCREST GAMEDAY	271	69	216	308	138	78	2	1	111	62	109	109	70	102	103	104	51	100	71	113	79	-97	34	SEM
11	NZGBELFLOYD	BELLS OI FLOYD S3J	270	63	161	257	215	75	0	0	106	44	100	96	63	100	101	99	44	98	48	133	84	-210	32	LIC
12	NZGINTEGRITY	OKURA LT INTEGRITY	258	71	170	246	214	81	26	2	105	56	102	99	65	96	100	99	53	100	75	113	92	-73	34	LIC
13	RIOT	ARALUEN PARK BANDIT	253	60	186	267	161	74	0	0	107	47	105	106	48	102	103	104	58	100	46	88	57	-80	23	GAC
14	GLENFERRIE	KAARIMONA GLENFERRIE	251	60	190	268	154	73	0	0	108	47	106	108	49	103	103	104	58	102	46	83	57	-89	24	GAC
15	NZGWILLANDMO	WILLAND LT DYNAMO	251	66	193	269	146	78	0	0	106	49	102	103	59	103	102	100	48	100	53	120	91	-49	31	LIC
16	0200JE07756	GOLDEN GDK VIVALDI	249	66	189	278	154	77	5	2	106	56	105	103	56	102	101	99	44	100	69	122	79	-35	28	SEM
17	CRVCARRICK	PUKETAWA KING CARRICK JG	248	62	169	237	181	75	0	0	102	46	101	99	59	102	99	98	48	102	44	140	74	-91	31	CRV
18	CRVMAXWELL	WAITEITEI SUPER MAXWELL	248	66	176	253	158	78	0	0	104	50	101	101	61	104	100	100	48	103	52	137	89	-104	32	CRV
19	NZGOKURAINDX	OKURA GOLDIE INDEX	246	63	178	194	200	76	1	1	104	48	97	93	60	100	99	100	47	100	48	130	77	38	31	LIC
20	VALIN	KINGS VIEW VALIN 4697	245	58	202	319	106	71	0	0	110	48	114	114	46	103	104	106	56	100	52	125	54	-102	22	GAC

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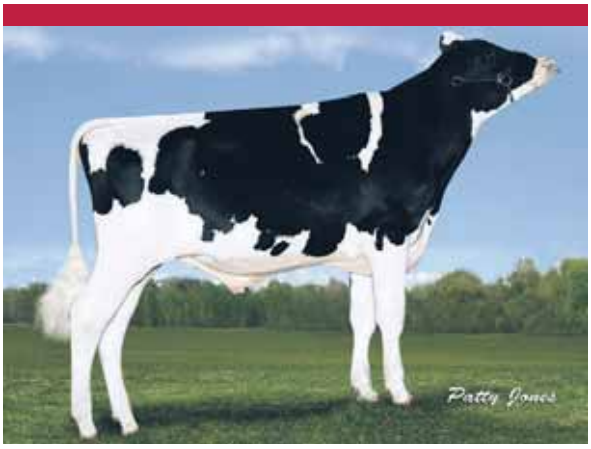

SANDY-VALLEY-I **PARAMOUNT**

0200H010359 JOYRIDE x NUMERO UNO x PLANET

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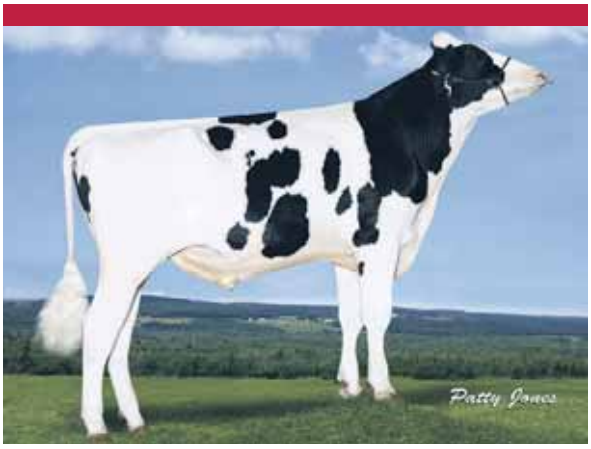
+305 BPI(g) / Rel. 64%
+101 OT +102 MS / Rel. 55%
+116 Dtr Fertility / Rel. 52%
ABV(g) April 2018



PROGENESIS **COSMIC**

0200H010779 BOASTFUL x MARDI GRAS x NUMERO UNO

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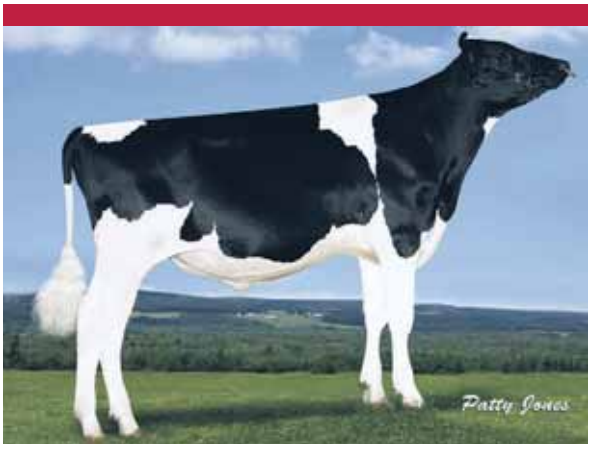
+299 BPI(g) / Rel. 62%
+100 OT +101 MS / Rel. 52%
+115 Dtr Fertility / Rel. 45%
ABV(g) April 2018



PROGENESIS **FERGUS**

0200H010704 SILVER x HALOGEN x O-STYLE

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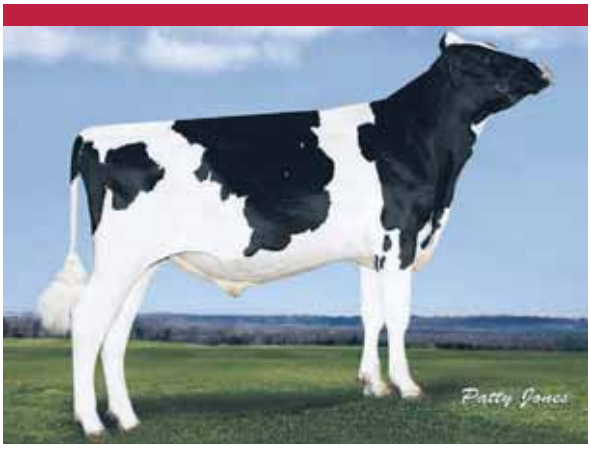
+296 BPI(g) / Rel. 64%
+100 OT +102 MS / Rel. 54%
+109 Dtr Fertility / Rel. 50%
ABV(g) April 2018



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+102 OT +101 MS / Rel. 56%
+110 Dtr Fertility / Rel. 52%
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Alta focus on fertility pays dividends

DAIRYFARMERS cannot get genetic gain without first getting their cows pregnant. This has been Alta's philosophy for years now, resulting in the best in the industry fertility ratings for its bulls.

With fertility there are two major focus points:

- Semen fertility.
- Female fertility.

Alta started to calculate semen fertility in 2001, which resulted in the Concept Plus program, which is the most reliable and accurate semen fertility available.

Through its Advantage herds it is able to measure semen fertility in an environment with a substantial amount of direct comparisons due to the size of the farms, which helps to increase the reliability of Concept Plus.

In addition, it takes out the technician effect and the type of breeding (i.e. was it done with a synch program or with visual heat detection), which increases the accuracy of the Concept Plus rating.

The only similarity between Concept Plus and the Semen Conception Rating (SCR) is that they are based on palpated pregnancies and not the typical Non Return Rate (NRR) method.

Alta said this was why Concept Plus was the most robust semen product in the industry, getting cows in calf 2-5 per cent above the average. The SCR data confirms this.

The latest Holstein results show that Alta has the smallest spread from its best bull to its worst bull in the industry for semen fertility.

But semen fertility is only half the battle when talking fertility.

Female fertility is the other half. There are many measures of female fertility globally with the United States breeding values having not only Daughter Pregnancy Rate (DPR) but also Cow Conception Rate (CCR) and Heifer Conception Rate (HCR).

Australia has the Fertility index only, which is more comparable with CCR and HCR.

DPR looks at the animal's ability to get pregnant in a given period when compared with the average.

DPR is an expression of the percentage of daughters of a bull that get pregnant in the first available cycle after calving. If a daughter is not inseminated in this period, it cannot get pregnant and this will reduce the sire's DPR.

This is a more stringent and accurate way to measure female fertility than the Daughter Fertility in Australia, which is a measure of an animal's ability to conceive when inseminated compared with the average.

Alta's focus on creating pregnancies first and faster resulted in a focus on breeding bulls with high DPR.

This places Alta well on any scale or ranking system around the world when considering improved female fertility.

A good example is how Alta's bulls are ranked on ABV for Daughter Fertility.

In the latest *Good Bulls Guide* for Holstein sires, Alta has two of the top five bulls for Daughter Fertility, and 30 in the top 200, that is 15 per cent, and one of the best rates for improving Daughter Fertility in industry.

Article supplied by Alta Genetics, website <Australia.altagenetics.com>.

2018

NATIONAL HERD DEVELOPMENT VICTORIAN WINTER FAIR

3rd - 5th July
Bendigo Exhibition Centre

Judge: Mr Justin Burdette, USA
Associate Judge: Mr Henry Bevan, Aus

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The fair is held in the school holidays and provides a great opportunity for young people to be involved.

Unique sale to feature at fair

Key points
- ✔ What: Victorian Winter Fair
- ✔ Where: Bendigo, Vic
- ✔ When: July 3-5

By **Carlene Dowie**

THE Victorian Winter Fair's reputation for being prepared to try something different will be enhanced this year with a novel approach to selling animals.

The fair, now in its fifth year, will be held from Tuesday, July 3, to Thursday, July 5, at the Bendigo Exhibition Centre at the Prince of Wales showgrounds at Bendigo, Vic.

One of the event's organisers Clare Modra said the organisers had decided to try something different with the sale after discussing ways to improve it after last year's event.

They came up with the idea of a 'silent auction'.

Animals to be sold will have to be entered in the show but will be sold through Elders's online platform. The silent auction will open seven days before the last day of the show.

The animals will be displayed in the show stalls as part of the show strings of their owners. Information about sale lots will also be displayed at the Northern Herd Development stand at the show.

The sale will close on the Thursday morning and successful bidders will be announced at the show.

Mrs Modra said the organisers had decided to try the new approach because they recognised things had been tough in the industry for the past couple of years and wanted to offer people a cost-effective way of selling.

Another change this year will see an additional class in the junior show.

Mrs Modra said class 7 for a winter calf born from July 1 to September 30 of the previous year always attracted huge numbers and they had trouble ▶

Brothers Adam and Mark Dee with the 2017 Victorian Winter Fair supreme champion Hullabaloo Bolton Sundae.

◀ fitting them all into the show ring. So the class will be split.

A new feature added last year — a Junior Judging Competition — will be held again this year on the Tuesday, allowing aspiring judges to compete against each other.

Mrs Modra said organisers had received a lot of positive feedback about that event last year.

The main judge for the show is Justin Burdette, of Windy Knoll View Farm, Mercersburg, Pennsylania, United States.

Mrs Modra said a lot of people were excited to show their animals under Mr Burdette.

He hadn't judged in Australia before but had judged at a lot of other shows internationally and had a great reputation.

He was renowned as a real cow man — something the Victorian Winter Fair organisers strived to have in their judges. He milks the cows he breeds himself, Mrs Modra said.

The associate judge is Henry Bevan, Bevandale Holsteins, Ravenshoe, Queensland.

Schedule of events

Tuesday, July 3
12pm: Junior Judging Competition
Wednesday, July 4
10am: Dry Heifer Judging
Thursday July 5
10am: In Milk Judging (Intermediate Section)
1.30pm: In Milk Judging (Senior Section)

'It's great to see all the young kids getting in there and having a good time.'

The Victorian Winter Fair has made a niche for itself in the show schedule.

Its timing is ideal for autumn calvers but it also means cows are being shown in cool conditions, which suits them better.

The Bendigo facility is first class and allows all the animals to be housed and shown under the same roof. It has excellent facilities for exhibitors including powered van sites and laundry, toilet and shower facilities.

The centre also has a heated dining/bar area that looks out across the show ring, allowing spectators to watch and hear the show in comfort.

Bendigo was central for everyone in Victoria, and reasonably accessible for people from South Australia and New South Wales.

The fair also had a strong focus on young people. It is held during the Victorian school holidays, allowing families to attend and young people to be involved in the youth show.

"Everyone likes that it is in the school holidays," Mrs Modra said. "It's a family-friendly event. It's great to see all the young kids getting in there and having a good time."

Contact: Clare Modra, phone (03) 5487 1127, mobile 0419 200 981 or email <victorianwinterfair@gmail.com>.

Judges for Winter Fair

CHIEF judge Justin Burdette and his wife, Claire, are partners with his parents, James and Nina Burdette of Windy Knoll View Farm in Mercersburg, Pennsylvania, United States. Justin and Claire have two daughters, Reese and Brinkley. They milk 125 cows, raise 150 head of young stock and farm nearly 200 hectares of land.

They are known for their outstanding breeding program, with more than 150 Excellent Holsteins carrying the Windy Knoll View prefix, including two 96-point, four 95-point and 12 94-point animals.

More than 70- All-American or Junior All-American awards or nominations have come from the farm, with 62 of those tracing back to Windy-Knoll-View Ultimate Pala 3E-EX94-Dom. Three 10-generation Excellent cows also trace back to the first home-bred animal, Windy-Knoll-View Cindy-OC EX90.

Their farm has won numerous Premier Breeder and Premier Exhibitor awards including the 2006 World Dairy Expo Premier Breeder Award. Justin spent 10 years travelling as a cattle fitter before returning to become full-time at the home farm. He has judged many local, state, regional and national shows including World Dairy Expo.

Associate judge is Henry Bevan.

Associate Judge for the 2018 Fair is Henry Bevan, Bevandale Holsteins, Ravenshoe, Queensland.

Justin Burdette has extensive judging and showing experience around the world.

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Sedated calf disbudding better: farmer

Key points

- ✔ Farmer started sedating calves for disbudding two years ago
- ✔ Process is simpler and gentler
- ✔ Also retains bulls calves to sell at weaning

Steven Dalitz takes the opportunity to tag and vaccinate calves while they are sedated.

YALCA, Vic, farmer Steven Dalitz, who started disbudding calves using sedation and long-term pain relief two years ago, says he would now never do it any other way.

Mr Dalitz said the process was not only easier for him, but was significantly less stressful for the calves. This meant fewer sick calves post disbudding.

Mr Dalitz and his wife Kristi milk 200 cows on a 200-hectare irrigated pasture farm in northern Victoria. The herd is predominantly autumn calving. Heifers calve down in the August in their first lactation and are then carried over to February the year after for their second calving as part of the main herd.

Mr Dalitz rears all heifer and bull calves — so raises about 200 each year.

Up until about two years ago, calf disbudding was done on the farm by a contractor from a local artificial breeding centre. The process involved catching calves, restraining them in a calf crush and removing the horn buds using a gas cautery gun.

"They bellowed and screamed and then you couldn't get near them for two days because they didn't want you to touch their head or anything like that," Mr Dalitz said.

The year before they started using the new method, they used a pain relief as part of the traditional process. A painkiller (or nerve block) was injected behind the eyes of the calf before disbudding.

But Mr Dalitz said this was hard work as the calves didn't like receiving the injections and he had to catch them twice — once to have the injections and again once the painkiller had taken effect to have them disbudded.

He then saw a post on Facebook from another farmer about sedating calves before disbudding and thought it looked like a better process.

When his vet from Numurkah Veterinary Clinic was next visiting the farm, he asked whether they would be interested in offering the service. The vet decided to look into it, bought a gas dehorner and began offering the service.

The new process is simpler and gentler.

The two-to-six-week old calves are disbudded in batches of 10 — with up to 40 done at a time.

The calves are not fed before the procedure to ensure there are no respiratory issues when they are sedated.

When the vet arrives, Mr Dalitz ▶

◀ hangs an empty feeder over the calf pen and the calves begin to suckle from the teats. This allows the vet to walk behind them and inject them with the sedative.

"A couple of them might jump (at the needle prick), but then they go off to sleep," Mr Dalitz said.

The vet then injects a nerve block behind the eye, which takes a few minutes to take effect, and then uses the gas cautery gun to disbud the calves. A long-acting pain reliever Medicam is then injected, which lasts for 3-4 days.

Mr Dalitz said they also took the opportunity while the calves were sedated to do other procedures, including tagging the calves, vaccinating them and treating hernias.

"And afterwards they don't even know they've been done," he said. "An hour later they get up and are like that was a nice sleep and come and drink their milk."

Mr Dalitz said they did not do the procedure on sick calves to avoid further stress on those animals, "which is probably just common sense".

He said the procedure costs $8.80 (including GST) per calf — about $3 more than the old way.

"But it is just so much easier — you don't have to catch calves, and as I am getting older, that's getting harder," he said. "It is so much easier, you don't get kicked and you don't have calves trying to jump out of pens and that sort of stuff."

Calves take a few minutes to become sedated after receiving the injection.

'I think the sooner it becomes compulsory the better.'

The procedure was also better for the calves.

"When we used to do it and put them in the crush, some calves wouldn't come up to you for a week or 10 days afterwards," he said.

"Now they don't seem to stress afterwards — they just go on with life. I don't get crook calves afterwards."

Mr Dalitz said he was pro animal welfare and saw this process as a better outcome for his animals. He said he believed it should be made compulsory.

"I think the sooner it becomes compulsory the better because the ones who won't do it are probably the ones who need to do it," he said. "If it was compulsory, at least vets are getting to those farms too."

Animal welfare concern was behind Mr Dalitz's decision to retain all his bull calves. "You'd feed them for a week and you'd just get them drinking really nicely and then they'd all come running up behind you on calf truck day and you'd put them on the calf truck," he said.

"I hated selling calves — so we just rear them instead. And it's actually ended up a really good cash crop here now."

Mr Dalitz rears the uncastrated bull calves to about 3-4 months of age and sells them to a feedlot at Picola, Vic, that is looking for dairy beef. He receives $300-$400 for them. "So it's good money," he said.

He estimates it costs $200-$250 to rear them to that age. He said he was happy with the price as he always only ever looked to breakeven on the exercise. D

Calf dehorner takes different approach

Key points

- ✔ Traditional calf disbudding difficult task on family farm
- ✔ Sedating calves makes process easier
- ✔ Allows other animal health procedures to be done

By **Carlene Dowie**

A FORMER professional calf dehorner says a move to a vet-assisted sedated calf disbudding is one of the best decisions she has ever made.

Brooke Evans, who with her husband Justin, milks 200-220 cows on 365 hectares at Greta West in north-east Victoria, started using the new process a couple of years ago.

Before returning to the farm full-time in mid-2012 just before the birth of her first child, Mrs Evans had worked for an artificial breeding services com-

Calves on the Evans farm are sedated ready for disbudding and other treatment. The procedure is done on small groups of calves several times through the calving season.

A calf after a successful procedure to remove the horn buds.

pany and had disbudded calves for farmers.

The process involved restraining calves in a calf crush before using a gas dehorner to cauterise the calf buds and then spraying the wounds with an antiseptic.

"Which is fine and it works," she said. "I have done thousands and thousands and thousands of calves that way."

When she returned to the farm full time, she continued to do their own calves the same way.

"But it was getting increasingly harder to get enough of hand from Justin for us to do the calves," she said. "So they were getting bigger before we had enough time to get them done, and the bigger they get the harder they are to handle and the harder it is on them.

"If you do them too late, it really knocks them, they lose weight, it is painful and it takes longer for them to get over it."

Mrs Evans read on the internet about other farmers who were starting to do sedated calf disbudding and thought it looked like a solution to her problems.

"So I rang our local vet and said I want to do sedated calf dehorning, are you doing it or are you willing to do it," she said.

The vets were not offering that service but were aware of it and were interested but said they lacked experience in disbudding. Mrs Evans offered to teach them how to disbud if they would manage the sedation and administer the pain relief to the calves.

Under the new process, Mrs Evans and the vet disbud animals in groups of eight and do 3-4 groups at a time.

The calves skip their morning feed, as would be done for any animal receiving an anaesthetic. "I usually pop the feeder over and they all come to the front of the pen", which allows the vet to quickly administer the sedative via injection to each animal. This reduces the risk of missing one calf or double dosing another.

"Within five minutes they all lay down on the ground and they are asleep," she said. "At that point, I will go around with clippers and clip the horn buds of the hair, it just makes using the gas burner a lot easier."

At the same time, the vet administers a nerve block to the horn and places a couple of millilitres of long-acting pain relief gel behind the animal's tongue, which provides relief for 4-5 days.

Mrs Evans said she then disbudded the calves, while the vet checked them for and treated other things such as extra teats or hernias. Calves could also be vaccinated or tagged, while stud animals could be tattooed.

"There's a myriad of things you could do — they are sedated for 10-15 minutes, but it takes only a few minutes to do the disbudding," she said.

The calves quickly recover from the procedure and by evening were ready for their next feed.

Mrs Evans said the long-term pain relief made a big difference. "When you do it the traditional way, they are really sore and they won't come up to the feeder because they get bumped by each other," she said. "They don't like being touched or anything."

The new process meant the calves did not lose weight. "You don't get weight gain — you just don't get the weight loss, you don't knock them," she said.

Mrs Evans rears between 70 and 100 calves every year. They run an autumn-calving herd on a dryland pasture system.

The herd is about 50 per cent Holstein and 50 per cent stud Illawarra. All heifers are retained.

They use a Simmental mop-up bull and rear all the beef-cross calves (about 30 a year) to weaning at 12-14 weeks. All the beef-cross animals are also disbudded.

Dairy bull calves are sold at one week of age privately to local farmers to rear — none are sent to slaughter.

Mrs Evans said the disbudding originally cost about $13 a calf but the price had reduced as more farmers used the service and now cost about $9 a calf. That compared with about $2 a calf for the traditional process.

"People might baulk at the price — but seriously once you've done it once there is no other way," Mrs Evans said. "I will never, ever do it any other way."

There were additional benefits in things such as removing spare teats. "If we wanted to have a heifer to go to a show that had a spare teat we would get the vet out to especially do it, but they were then big heifers so it was a big task," she said.

The regular vet visits during the calf-rearing season also allowed the vet to check on calves that might have other issues or any other animals with health issues. D

Understanding calf milk replacers

Key points

- ✔ Different ingredients used in different milk replacers
- ✔ Sources of protein should be listed
- ✔ Always read label and follow directions

MODERN milk replacers can be used to successfully rear healthy calves. Before deciding to use a milk replacer, farmers should weigh up the advantages and disadvantages for their calf-rearing system.

Ease of handling with automated calf feeding systems, high milk prices and minimal waste milk are reasons why milk replacers are favoured on some farms.

Only high-quality reputable products should be used otherwise health problems and poor growth rates may result.

Composition of milk replacers

Clot-forming or non clot-forming

Traditional milk replacers are made from downgraded skim milk powders, and are digested like whole milk, forming a clot in the abomasum.

Early products varied in quality — mostly due to the processing of casein — and sometimes caused scouring.

The majority of milk replacers sold in Australia still contain significant percentages of skim milk powder.

Whey proteins are digested in the small intestine and do not form a clot in the abomasum.

The increasing value of casein and improvements in filtration and purification methods have seen whey-based milk replacers that can produce average daily weight gains and performance comparable to casein-based products.

Modern whey-based milk replacers lead the market in the United States and Europe and are gaining share in New Zealand.

Protein

A newborn calf is better able to digest milk protein than plant protein sources.

Milk proteins are the best sources for growth and development of calves and should provide most of the protein in a milk replacer. With increasing age, calves develop better capacity to digest other proteins and so milk proteins become less important.

Table 1: Suitable protein sources for a milk replacer

Optimum	Acceptable	Questionable/not recommended
Skim milk powder	Chemically modified soy protein	Fish protein concentrate
Buttermilk powder	Soy concentrate	Soy flour
Dried whole whey	Soy isolates	Dried distiller's soluble
Delactosed whey		Dried brewer's yeast
Casein		Oat flour
Milk albumin		Wheat flour

Other protein sources have been used in milk replacers with varying success (see Figure 1).

Soy protein is the most commonly used alternative to milk protein in milk replacers.

Processing of soy protein is required to make it more digestible and remove factors that may inhibit calf growth.

Wheat-based proteins may also support adequate calf growth rates and may mix better than soy proteins.

Crude protein levels in milk replacers commonly range from 18-25 per cent.

High levels of non-milk proteins are often used to compensate for low protein digestibility.

The sources of protein should be listed in the product ingredients, but the actual percentage each contributes to the overall protein content may not be listed.

Fat

Fat can be derived from animal-based products such as tallow, or cheaper sources such as palm or coconut oils, all of which are highly digestible and suitable if properly dispersed into the milk replacer.

Levels between 10 and 20 per cent are suitable for calf growth.

Additives

Vitamin, minerals and animal health medications are commonly added to milk replacers.

Ionophores such as lasalocid and monensin help control coccidiosis, and may also have a growth promotant effect.

The use of cocciostats in calves less than 2-3 weeks is of questionable value, and lasalocid is potentially toxic when given to calves less than 24 hours old.

Mixing of milk replacers

Consistency is the key.

Always read the label and mix according to the manufacturer's directions. Many automated calf feeders are designed to handle powdered milk, making it easier to transport food to the calf shed. D

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This is an edited extract of a Dairy Australia factsheet.

Advantages and disadvantages of milk replacers

Advantages

- Consistency of product (when mixed correctly) — less risk of digestive upsets and scours
- Can be stored and handled more easily than liquid foods
- Easily fortified with additional vitamin, minerals and medicines if necessary
- A potential cost:benefit over saleable whole milk
- Less risk of disease transfer from cow to calf
- Well suited to automated calf feeding systems

Disadvantages

- Cost compared to feeding unsaleable/waste milk
- Labour required to mix
- Need space and facilities for dry storage
- Risk of spoilage by rodents

Tips from large-scale calf rearer

Key points

- ✔ Good quality colostrum fed early reduces mortality rate
- ✔ Simple-to-use facilities
- ✔ Right people for job critical

By **Lesley Irvine**
Tasmanian Institute of Agriculture Dairy Centre

REARING 6000 calves each year, Joanne Leigh has learnt a lot about calf rearing. As one of the guest speakers at the Dairy On PAR calf roadshow in Tasmania last year, Mrs Leigh was able to share a lot of useful tips with the 120 people who came along to one of the four sessions.

Mrs Leigh and her husband Jonathan established their calf-rearing business, Top-Notch Calves, 14 years ago. It is located at Tirau in the Waikato region of New Zealand. They rear calves on a contract basis, from a few days of age typically through to weaning.

At Top-Notch calves, the average mortality rate is less than 2 per cent. But the Leighs have noticed the mortality rate varied a considerable amount between batches of calves obtained from different farms.

Mrs Leigh said when they have investigated the reasons for higher mortality rates in some groups of calves, it was generally found to be due to calves not receiving adequate levels of quality colostrum.

In her presentation in Tasmania, she highlighted the importance of ensuring calves receive enough quality colostrum as soon as possible after birth as a calf's ability to absorb the immunoglobulins from colostrum decreases quickly.

'Calf rearing is made easier if there are simple, repeatable systems in place.'

Mrs Leigh said good facilities for calf rearing were facilities that were simple to use and achieved their purpose. There should be good ventilation but sheds should also should be draught free at calf height.

At Top-Notch calves, they sourced second-hand roofing iron for the panels between the pens, which helped minimise draughts and reduced any pen-to-pen contact of the calves. They have separate hospital pen for sick calves and also have 'slow-drinker' pens.

Despite rearing such large numbers of calves, Mrs Leigh made the point it was important to 'think individual'. "Calves are babies, if they are not hungry something is wrong," she said.

Early identification of problems assists the Leighs achieving their low calf mortality rate.

Having the right person (or people) was critical to the success of a calf-rearing system.

Again, Mrs Leigh highlighted that calves were babies and the people working with them needed to understand this and care for them accordingly.

Calf rearing is made easier if there are simple, repeatable systems in place. The calf-rearing system is reviewed each year to look for improvements that can be made. It was important to listen (and act where possible) on the suggestions made by those involved in calf rearing, Mrs Leigh said.

Mrs Leigh's final bit of advice: have fun as a team.

Article courtesy of Tassie Dairy News

Accelerated calf-rearing research presented

THE results of research into accelerated calf rearing were presented at the Dairy On PAR calf roadshow in Tasmania last year. Calves that are fed ad lib (as much as they want) milk doubled their birthweight in just 42 days compared with 56 days for calves fed four litres of milk per day. This finding was part of a research project conducted at the Tasmanian Institute of Agriculture Dairy Research Facility in 2016-17 that compared three differing accelerated calf-rearing programs.

The ad lib calves also reached weaning weight an average of 10 days earlier than the control group fed four litres of milk.

Researcher with the TIA Dairy Centre Mark Freeman also spoke about the other two accelerated programs studied — fortified milk until weaning and fortified milk for only the first four weeks. Milk is fortified by adding milk powder to the colostrum/fresh milk. Both of these programs also resulted in calves reaching weaning weight earlier than did the control group.

The group of calves fed fortified milk until weaning took an average of 80 days to reach weaning weight (the same as the ad lib group). The calves fed milk fortified for just the first four weeks took an average of 86 days to reach weaning weight. The control group took 90 days.

Extra or fortified milk is an additional cost to a calf rearing system, so it needs to be determined if it is worth it. This answer is yet to be determined.

Research conducted before this project has suggested pre-weaning growth rates account for up to 25 per cent of the variation in first lactation milk production. That is, the faster pre-weaning growth rates, the higher first lactation milk production.

This increased production is thought to be as a result of 'switching-on' genes during the pre-weaning period.

The heifers will continue to be monitored to see if the growth difference achieved in the pre-weaning period is maintained and whether there is a difference in milk yields once they join the herd.

This project was funded by a DairyTas small grant.

Article courtesy of Tassie Dairy News

Detecting sick calves

US researchers tracking sick calves with auto-detectors found they displayed symptoms two days before the condition became apparent.

The scientists from Virginia paired calves with respiratory disease with healthy hutchmates and compared their movement measurements and milk intake. They used an automatic calf feeder and the 30 pre-weaned calves were each fitted with an accelerometer.

The unwell calves were less active before, on the day of, and after respiratory disease diagnosis. They had reduced lying frequencies starting two days before diagnosis, as well as after diagnosis. They also consumed less milk.

"Step activity, lying bouts, and milk intake may prove to be a useful tool in identifying respiratory disease," the researchers reported. "Housing of calves can pose a challenge in identifying respiratory disease; therefore, it is necessary to develop tools that can identify these disease events."

Article courtesy of GippsDairy News

Non-replacement dairy calf usage

Key points

- ✔ Consumers demand higher standards for non-replacement calves
- ✔ Direct and indirect alternatives to slaughter at birth
- ✔ Healthy calves key to developing markets

By **Jeanette Fisher***

IN Australia, the majority of the animal welfare standards within our dairy industry are far superior to those in some other countries.

The one aspect of our industry that does need improving is calf welfare, with special regard to the care given calves not required as dairy replacements.

The global consumer demand for high animal welfare standards in food production animals is driving the dairy industry overseas and in Australia to reassess management practices and to question accepted standards of animal care.

One aspect of dairyfarming that concerns consumers is calf welfare, particularly that of non-replacement calves.

The fact that many surplus dairy calves are slaughtered within the first week of life is not acceptable to many consumers, nor to many dairyfarmers.

The industry must work towards finding sustainable solutions for this issue.

Consumers may demand that baby calves are not slaughtered at birth but for this to happen there has to be a range of economically viable options available to farmers.

Most dairy operations with stable cow numbers rear between 20 and 30 per cent of their heifer calves as replacements for culled cows.

Dairies with excellent calf-raising and herd-health management may rear fewer replacements, while dairies in expansion mode may rear all their heifer calves.

Heifer calves not needed as replacements by their farm of birth are often reared, either on their home farm or by custom rearers, for sale into international or domestic markets.

The global demand for heifers means that a relatively low percentage of heifer calves are euthanased on farm or transported to local abattoirs for slaughter.

Male dairy calves are a different matter. Although increasing numbers of dairies are raising all their male calves, there is still a high proportion of male calves sent for slaughter within the first week of life.

The one aspect of our industry that does need improving is calf welfare, with special regard to the care given calves not required as dairy replacements.

Unfortunately, straight dairy bred animals are perceived by the industry as having carcase qualities less desirable than beef or dairy beef-cross calves. There are certainly some undesirable carcase characteristics of dairy animals but there are also areas where dairy animals perform well.

Alternatives to slaughter at birth

Alternatives are divided into two types — direct and indirect.

The direct alternatives are the various ways in which male calves can be used.

The indirect alternatives are those that reduce the number of male dairy calves or make the male calves more desirable to rearers, thus increasing the number reared.

Possible direct alternative uses, in order of slaughter age, are:

- White or milk-fed veal.
- Pink or milk and grain-fed veal.
- Grain-fed veal/baby beef.
- Bull beef.
- Steers.

Global veal production, which was high in the middle of the last century, plummeted in response to justifiable concerns about poor animal welfare standards.

Paradoxically, in the past 10 years, veal production has started to regain popularity, for the same reasons that it originally lost popularity.

Veal calf welfare used to be poor; now consumers are concerned about the slaughter of neonatal calves and consider well-managed veal production to be an acceptable alternative.

The standards for veal production in the 21st century are much higher than they were 50 years ago and no longer are calves confined in crates, kept in the dark and fed an iron-deficient ration.

Only a small amount of veal is currently grown in Australia but in Europe, veal calves are reared in groups, have their haemoglobin levels checked frequently and are given access to solid feed from a few weeks of age.

Modern veal is a high welfare and high-quality product that commands premium prices; much of the veal produced in Australia is sold to overseas buyers.

Veal

Milk-fed or white veal is produced from calves reared on a primarily milk-based diet.

This is expensive meat to produce and there is almost none grown in Australia.

In Europe, where it is quite common, the legislation requires that calves have access to a specified amount of solid food starting from eight weeks of age.

Meat from these animals is pale, silky in texture, tender and low in fat.

While calves raised for white veal are slaughtered at varying ages (about 8-20 weeks), almost all would have a longer life than the average chicken, duck or rabbit that graces our tables.

Pink veal calves are reared on less milk than white veal but are offered a high-quality grain ration from an early age.

These calves are slaughtered a few weeks later than white veal calves.

The meat is darker in colour and less silky in texture but still tender and has a slightly more robust taste that white veal.

Grain-fed veal/baby beef comes from calves that have been weaned off milk and then grown out on a high-quality diet of grain and forage.

In Australia, the majority of this category of veal calves are grown out on pasture; this significantly alters the taste and texture of the meat.

While the meat is darker and less "melt in the mouth" tender than white or pink veal, it is still a desirable product.

Bull beef

Bull beef is produced from entire male animals reared principally on pasture after weaning. Slaughter age is typically 18-24 months.

Managing groups of entire males does present some challenges but these are not hard to overcome.

Bulls are well suited to intensive rotational-grazing systems, where the animals are moved frequently as this minimises territorial behaviour.

Bull beef is a commodity product, subject to the normal fluctuations of the beef market; the meat is not usually prime quality.

Most of the bull beef produced in Australia is exported as grinding beef to major hamburger chains.

Bulls reared for beef can have their intake restricted in times of low pasture availability but will achieve high average daily gains (ADGs) when pasture is plentiful.

Gross margins on intensively managed bull beef operations can be much higher than cow-calf or fattening operations, mainly due to the aggressive feeding habits and consequent high ADGs of bulls.

I have had significant personal involvement in this industry and consider this to be a viable alternative use of male dairy calves.

Steers

Pasture-raised dairy steers lack the inbuilt hormone-growth promotants that bulls have and as a consequence are much less aggressive grazers, resulting in lower ADGs and later maturity.

On the plus side, they are easier to manage and can be run in conventional set-stocked grazing systems.

Slaughter age is usually 24 to 36 months. Steer beef is also a commodity product, subject to market fluctuations.

Feedlotting steers is another option for the dairy industry.

In the United States., meat is graded on an eight-point scale.

The bottom three grades (6-8) are rarely sold as whole cuts but instead are used for ground beef or processed products.

The next two grades are "budget" grades (4-5) followed by "select" grade (3) with is good quality but somewhat lacking in marbling, juiciness and flavour.

Grade 2 is choice and Grade 1 is premium. Choice is the best grade likely to be found in a supermarket, while premium is usually only sold to restaurants and hotels.

Interestingly, while dairy steers account for about 15 per cent of total beef production something like 40 per cent of beef graded choice or premium grade comes from dairy steers.

In other words, feedlotting dairy steers can produce a high-quality product and could be an economical option, particularly in times of high beef prices.

'Feedlotting dairy steers can produce a high quality product ...'

Holstein beef steers on feedlot rations in the US have a higher maintenance requirement than beef breeds and may require more days on feed than beef animals but have a tendency to marble well and consistently grade well.

The meat is popular in the industry because of its consistency, which is due in part to the limited genetic pool from which the animals are drawn.

Indirect alternatives
Sexed semen

Some people see the use of sexed semen as a solution to the problem of dairy calf slaughter. The use of sexed semen is becoming more common, partly because results are improving, which makes its use more economical.

The use of sexed semen will not, in the long term, provide a solution to the problem of surplus dairy calves because ultimately the global market for heifers will become saturated and demand will slow.

In the short term, though, the use of sexed semen will help reduce the number of male calves born, with the extra heifer calves being used as replacements either domestically or overseas.

One way the use of sexed semen reduces the number of calves slaughtered at birth is by giving farmers the opportunity to breed the number of replacement heifers they need from a smaller number of cows.

Inseminating the best genetic merit cows with sexed semen will increase the chance of them producing heifer calves.

This means that lesser quality cows can be mated to beef bulls, with the resulting calves being sought after by rearers, rather than being consigned to abattoirs.

Dairy breeds

Pure Holsteins (as well as Jersey and Jersey-cross animals) do not have carcase shapes that are as desirable as those of other breeds.

Some progressive dairyfarmers are questioning the exclusive use of Holsteins because of the various disadvantages of the breed; for the purposes of this article, carcase qualities are one of those disadvantages.

There are other dairy breeds, such as Fleckviehs, Montbeliardes, Normandes, British Friesians, MRIs (Dutch red and whites) and some of the red dairy breeds, such as Aussie Reds, that have carcase shapes and yields more suited to beef production, while still holding their own as milk producers.

Crossbreeding with alternative dairy breeds brings not only improved carcase qualities in calves and culled cows but also improvements in fertility, longevity and general heard health.

Therefore, crossbreeding with some of these breeds is one option for reducing the number of male calves slaughtered at birth and one which brings concurrent benefits to the enterprise.

Calf health

If calves are to be sold to rearers, or raised on their farm of birth, they must be given every opportunity to survive.

Male calves for rearing must have had good quality colostrum soon after birth; my suggestion is that buyers blood test purchased calves to check their level of immunity.

This will give buyers firm data about the likely survivability of purchased calves.

Rearers will not continue to purchase calves if they are unable to buy good quality calves; therefore, to ensure that veal or bull beef programs are sustainable, farmers must ensure that sale calves are "of merchantable quality".

There is no easy solution to the problem of bobby calves.

A "one size fits all" solution will never exist because every farm operation is unique and because of the geographic and climatic diversity of our dairy areas.

What is possible in one area may not be possible on the other side of the country. However, options do exist to reduce the number of surplus calves slaughtered at birth and for farmers to add economic value to their male calves. D

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Exploring dairy beef opportunities

Key points

- ✔ Nuffield scholar looks a dairy bull calf use around world
- ✔ Identifies significant opportunity for Australian industry
- ✔ Several factors needed to drive success

WHAT if there was a way the dairy industry could respond to some consumer concerns about the treatment of dairy bull calves, and at the same time improve profitability for farmers? It's a question 2015 Nuffield Scholar Thomas Snare has been researching, looking at ways to market the already expanding dairy industry by rearing bull calves for beef consumption.

Mr Snare is a dairyfarmer near Boat Harbour, Tas, while also working at the Tasmanian Institute of Agriculture Dairy Research Facility for the University of Tasmania.

He hopes the findings of his Nuffield Scholarship help to drive greater improvements on-farm, particularly in terms of utilising dairy bull calves, so as to ensure best practice and welfare standards across the industry.

"Dairy bull calves are currently an underutilised co-product of dairyfarming," Mr Snare said.

"There is a real opportunity to value-add here in Australia, as seen in countries like the United Kingdom and the United States, where dairy-origin beef makes up a significant proportion of total beef production.

"There are a number of factors that will drive greater success, including the need for farmers to produce quality bull calves and utilise beef genetics to increase carcase quality."

Mr Snare's Nuffield Scholarship was supported by Dairy Australia, and enabled him to visit and learn first-hand from industry leaders in New Zealand, Japan, Western and Northern Europe, and the Mid-West US.

He said the experience was unparalleled. "It allowed me to look at the utilisation of dairy bred bull calves and the practicalities of rearing at large-scale, which is most successful when using a contracting-rearing model," Mr Snare said.

"It showed that there is a quality issue with the Jersey and Jersey-cross bull calves currently produced in Australia, which in part can be corrected by better use of beef genetics, post artificial-insemination. It's also important to know that the seasonal nature of dairy production in Australia means lower asset utilisation in comparison to year-round calving systems in other countries.

Thomas Snare with Stephen Connolly of Blade ABP Ireland. Cattle pictured are all of dairy origin.

Thomas Snare at a feedlot with Jerry Wulf from Wulf Cattle, Minnesota with Jersey-Limousin cross cattle.

"Working at all these elements — and keeping a closer eye on the beef market — so to look for opportunities to value add will be beneficial in producing more, with less."

A key aspect of his study program was completing a tour of Toyota in Japan to build a greater understanding of 'lean management', which is a system utilised by the manufacturing business worldwide to drive productivity improvements of up to 20 to 30 per cent.

"You don't often think of applying lean management and agriculture," he said. "But there are some real productivity gains to be made, which at the same time address public concerns around the treatment of young dairy calves.

"Adding value to these animals, such as rearing and finishing at heavier weights, seems like a better solution and needs to continue to gain traction.

"Applying the principles of lean management will require 100 per cent buy-in from management, basic theory education for the farm team and ongo-

ing coaching from an external consultant.

"From the implementation models observed, the Danish and New Zealand approaches seemed most effective, providing basic training before working on gaining rapid improvements in the workplace."

Mr Snare said he was buoyed by the ongoing demand for Australian beef and the opportunity to capitalise upon this in the dairy industry, while contributing to animal welfare outcomes.

"Overall, the medium to long-term demand for Australian beef is positive," he said. "Processors will be prepared to come to the table for beef derived from dairy bulls, provided quality and volume can be guaranteed.

'Dairy bull calves are currently an underutilised co-product of dairyfarming.'

"And if we can achieve that, it will be positive for our animals, our industry and our businesses."

In his study report, Mr Snare said the dairy industry must take responsibility for the quality of the bull calves that it is producing, utilising beef genetics where possible to increase the carcase quality of these animals. "The dairy industry must follow the beef market more closely a look for opportunities to value add," he said.

"Calf rearing should utilise existing facilities where possible to minimise capital outlay while paying attention to the environmental conditions required for optimal animal health. Successful implementation on farm will be best achieved through ongoing coaching from an external adviser." D

Read Mr Snare's full report at <www.nuffieldinternational.org/live/Report/AU/2015/thomas-snare>. Watch a video of Mr Snare's returning scholar presentation at <https://www.youtube.com/watch?v=fK_EXrvlQ1IENDS>.

The demand for dairy beef

THOMAS Snare's Nuffield study identified opportunities for dairy beef.

His report said dairyfarming had an advantage over beef farming in that the bull and heifer calves were co-products of the milk production system. They can either be fed back into the system as replacements for the milking herd, or be processed for beef, as is the opportunity for bull calves.

"Contrast this to conventional beef production system in which the sole purpose of the cow is to produce one calf, which must absorb the financial and environmental costs of feeding itself and mother before returning any profit," the report said.

"Beef from the dairy industry, therefore represents a significant opportunity to contribute to Australia's beef production as a whole, while minimising the environmental footprint."

Mr Snare's report found the medium to long-term demand forecasts for Australian beef were positive.

"With the size of the Australian beef herd currently the lowest for the past 24 years, the main factor limiting growth is on the supply side of the equation," it said.

With strong markets and a good outlook for Australian beef, it is difficult to understand why there is almost no development of dairy-based beef production in Australia.

"One possible explanation for why this may be the case is the relative size of the dairy industry to that of the beef industry," the report said.

"With 25.7 million cows in the Australian beef herd and only 1.74 million cows in the dairy herd, dairy is only ever going to be a very minor contributor to total beef production in Australia.

"On the other hand, dairy-based beef production in New Zealand is well developed, with this being a reflection of the national cattle herd. The New Zealand herd consists of 5.0 million dairy cows and 0.98 million beef cows. This being the case, over 70 percent of the beef produced in New Zealand is of dairy origin.

"This trend is reflected in the majority of countries within the EU, where beef production is in decline and dairy production has been increasing."

Mr Snare's research found that in Australia, beef from the dairy industry was largely limited to cull cows. "The utilisation of bull calves is low, with about 700,000 being processed each year," his report said. "Bull calves that are processed at a young age are utilised for veal, pharmaceutical products, leather and pet food.

"The yield from these small animals is very low and correspondingly is the financial return to dairyfarmers."

Mr Snare said until recently there had been little need for or interest in developing dairy-based beef production in Australia.

But the contraction in the beef herd, which had created incentives, and the increasing public concern about how the industry dealt with male calves had changed that.

His report identified the main barriers to the growth of dairy beef industry were calf quality, rearing costs and markets.

Although meat quality from dairy breeds was generally good, with high intramuscular marbling and associated tenderness, carcase conformation and dressing percentage were not as good as beef breeds.

"A small framed Angus will have, on average, 5 per cent greater dressing percentage in comparison to a Friesian steer," Mr Snare's report found. "In addition to this, the prime cuts are generally smaller and more elongated, particularly in the case of rib-eye in dairy-bred animals."

The cost of rearing calves was also an issue. "Approximately one-third of the lifetime cost of a dairy beef animal is incurred during the first 12 weeks of its life," the report said. "Calf rearing is generally a low margin activity with high capital outlay and moderate risk."

Although the low margins could be addressed by increasing the scale, this created additional management challenges.

Mr Snare's report also found that the market for dairy bred bull calves was not well developed in Australia.

"Finished dairy-bred steers, particularly straight Friesian and beef-cross genetics, fit well into the existing beef markets, although the volume of animals produced is low," it found.

"However, some bull beef production for the 95CL manufacturing market exists, but again, the volumes are low.

"Dairy origin veal production (both white and pink) is limited to a small number of niche producers."

Mr Snare's report said the big limitation was achieving the initial critical mass.

"Processors are prepared to come to the table, provided that volume and quality can be guaranteed," it said.

The report found that internationally, dairy-origin beef was produced and marketed under three main systems, these being veal, bull beef and beef-cross prime steers/heifers.

DairySA Innovation Day 2018

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Bruce Lindsay with the JCB Agri Telehandler, which he says is so versatile and capable that he cannot imagine the business doing without it.

Floods prompt change to feed system

Key points

- Farm on heavy clay soils in northern Victoria
- Planted to annuals, which are harvested for silage and hay, and fed out later in season
- Grain component fed in milking shed

By **Keith den Houting**

KOROOP is a region in northern Victoria within the triangle formed between Koondrook, Cohuna and Kerang. The soils are black heavy clay that develops large cracks when as they dry out in our summer. The soil maps of this region have named one of the soils Koroop clay. It's a good soil for growing annual pastures and certainly benefits from applications of gypsum.

Bruce and Christine Lindsay farm here about seven kilometres from Kerang. Christine works off farm in a jewellery business at Kerang.

Their farm is bordered by the Pyra- ▶

A JCB Agri telehandler is used to mix the feed.

Andrew Lindsay in front of the feed wagon.

◀ mid Creek, which is a natural waterway now used and maintained for irrigation. The top soils adjacent to the creek are excellent in some areas and include patches of better red loam.

Bruce, in partnership with his brother Barry, took over running the farm from his father Geoff more than 20 years ago. In 2015 Bruce took over the dairy business, while Barry runs his own enterprise down the road.

The farm runs 300 spring-calving cows and 150 autumn-calving cows, milked in a 60-unit rotary. This was upgraded from the original 30 units in 2001.

The farm employs Bruce and Christine's, son Andrew, and John Corry and two part-timers to assist with milking.

John has been with Bruce for many years and is familiar with the running of the farm. Andrew likes the work and owns and lives on a block just up the road where a lot of the silage is stored and is at times incorporated into the dairy enterprise.

Bruce's attitude to employed labour is that he would not ask a worker to do anything he would not do himself. He is conscious of his obligations, especially the safety aspect of the work and using machinery. Long hours are the norm though, especially when irrigating virtually nonstop for 60 days.

The nature of the enterprise has been much decided by events outside the management's influence. In January 2011, central Victoria received more than 400 millimetres of rain and the resultant floodwaters in the Kerang floodplain district inundated Bruce's and other district farms. The house and dairy were saved with levee banks but the cows were all parked away.

All summer permanent pasture was lost and the decision to not resow was made. Bruce instead decided on all annual pasture.

The farm is 500 hectares with 1050 megalitres water allocation. Hence the decision to harvest and store feed from spring surplus growth and feed this out later in the season.

Quality hay is also bought in. The efficiency lies within the costs and quality of feed grown and bought, harvested and stored, conversion by the cows and ultimately the price received for the milk. The latter is always an issue.

Bruce aims for 650 kilograms of milk solids per cow and will probably achieve that this season. Last year was difficult as the hay season was wet and quality suffered. To offset this, the temporary water price was low at the end of the season and has benefitted the enterprise this year with a good quantity of carryover water obtained.

However, the business is still reliant on the temporary water market and

there will still be a need to purchase some extra towards the end of this season.

Irrigation starts February 20 and the sowing mix includes 5kg/ha of millet. Bruce said this millet shades the new annual pasture plants, especially if there is a hot spell. The milkers are budgeted to graze the new green feed at the start of April.

In 2003 Bruce decided to purchase a 20-tonne Schuitenmaker feed wagon. It is towed and operated with a 90 kilowatt Case IH tractor.

Both hay and pit silage is used to make a mixed ration. The grain component is not mixed in the wagon but fed in the milking shed.

The principle of the feeding is to provide an 18 per cent protein grain ration and involves a commercial mix, which is varied and adjusted monthly. The energy requirements vary with the mixer feed available and the stage of lactation. This is guided by the individual cow collars and the computer controlled bail feeding.

"We monitor the feed and quality constantly as it is easy to get carried away and lose sight of the costing," Bruce said. The metabolisable energy, protein and bypass protein levels are considered each month and the aim is to fully feed the cows. The ration is wheat/barley based and lupins, corn and canola oil are used to adjust the energy.

The cows are big and nice dairy types with weights to 800kg. The herd is in good condition and Bruce uses Peter Williams, from Geelong, for his joining strategy. "We need to start reconsidering the breeding strategy as the size of the cows is becoming excessive," Bruce said. "They have trouble fitting on the milking platform.

"When we built the new 60-unit shed, this was the same problem then, the cows had gotten too big for the old platform."

The cows are monitored for production, somatic cell counts and fertility. Herd testing is done every six weeks and cows are culled in priority with in-calf, mastitis and production. Temperament does not play such a big part anymore as the breeding is taking care of that. However, any cow that plays up is sold immediately.

All calves are kept and reared off- ▶

The cows are milked in a 60-unit rotary dairy.

The cows are big and nice dairy types with weights to 800kg.

The feed wagon distributes the ration into the trough in the feedout area.

The Lindsays' cows are large. They are reconsidering their breeding strategy to bring back the size of the cows.

The telehandler is used to fill the wagon.

farm on Andrew's block and fed milk, hay and grain till weaning. The 100 annual heifer replacements are targeted to be 600kg at calving and prioritised for production and any not big enough are held over until the next joining period.

All heifers are synchronised and joined by artificial insemination to Holsteins with beef bulls picking up the stragglers. The heifers are depastured on turn out blocks or agisted depending on the feed availability. The springers are fed a lead feed and hay ration.

Bruce admits that the feeding area is not ideal. When it is wet the area is moved to sacrifice paddocks, which can be renovated in autumn.

The feed area was initially built up to assist with surface drainage but at times Bruce reckons it is conducive to mastitis problems, especially during wet periods. He has long-term consideration of a better area and surface as well as an upgrade of the feedout wagon.

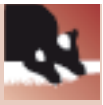
The last five years has given the enterprise a different perspective without permanent pasture and with irrigation water changes. However, capital costs at this stage are kept to a minimum and the emphasis is to get the processes right and then do the capital improvements.

One excellent investment has been a JCB Agri telehandler. Bruce said this machine was so versatile and capable that he could not imagine the business doing without it. It assists greatly with hay handling and preparing and loading the feed the wagon.

Effluent disposal from the dairy and yards is all diverted to a large ponding area, which is cleaned when required and the solids stored till manageable and then spread widely around the farm. The feedout area is also cleaned by excavator and also distributed around the farm.

Bruce and Christine can be justly proud of their good working farm with careful management of invested capital and emphasis on cow condition, production, feeding and young stock.

Basics of bedding for dairy cows



Key points

- Variety of bedding systems available for housed facilities
- All need to provide comfortable, soft lying surface for cows
- System used depends on type of housing facility

By **Dr Sarah Chaplin and Dr Yvette Williams**

BEDDING — on the surface, it seems quite a straightforward subject: if a farmer is going to put cows in a housing facility they need to provide something to make the cows' resting time comfortable and to soak up the manure. However, once one digs below the surface it gets a bit messy and there are many things that need to be considered.

So step back off the bedding pack and have a look at the purpose of bedding, what materials are used, and the types of bedding systems.

Purpose of bedding

There are three main purposes for bedding:

- To provide a comfortable, soft lying surface for the cows.
- To absorb moisture.
- To assist with hygiene in the cow housing facility by minimising bacterial growth.

Bedding also helps with providing traction on the housing surface allowing cows to safely move about the facility.

A freestall system with mattresses top dressed with sand.

Lactating cows spend 10-12 hours per day lying, but they are picky about their lying surface.

If cows do not like the bedding surface or do not feel they have enough space to lie down comfortably, they will reduce the amount of time they spend lying, which can lead to reduced milk production and health issues such as lameness.

The ideal bedding provides ample cushioning, has a dry surface so cows are kept clean and provides enough grip so they can stand up and lie down confidently.

Bedding materials

Organic material options for bedding include straw, sawdust, woodchips, rice hulls, shredded paper and composted manure solids. Inorganic options include sand, crushed limestone and man-made materials such as rubber, plastic and other products.

The base for bedded areas in any cow housing facility can be compressed earth, clay, gravel or concrete. It may also include a mat, which can be made of hard rubber or plastic, carpeting materials, or other com- ▶

◀ pressed products. The housing base alone, with or without a mat, does not provide sufficient cushioning for cows to lie on for any length of time.

There are several bedding systems commonly used for dairy cattle in Australia, and the system used depends on the type of housing facility.

• Freestall bedding systems. In a freestall facility, bedding will usually be a deep bed system or a mattress-based system. For a deep bed system, bedding material is placed in each stall on the housing base to a depth of at least 15 centimetres (25cm for sand). Soiled or wet patches of bedding need to be removed daily and the bedding surface thoroughly raked or 'groomed'.

Holes need to be filled in to ensure cows can use the stalls safely and the bed needs to be levelled so the effective lying area in the stall is not reduced by bedding banking up at the edges. Additional bedding material is added as required to maintain adequate depth. The frequency of complete replacement varies with the material.

Mattresses for free stalls consist of a tough fabric material, such as heavy weight polypropylene, that is stuffed with a filling such as shredded rubber, water or gel. A mattress is fitted in each stall and then top-dressed with additional bedding material to absorb moisture. Soiled top-dress bedding material needs to be removed daily and replaced with new material. Mattresses also need to be scraped or hosed off regularly.

• Bedding systems for loose housing. In a loose housing facility the bedding is usually operated as a deep litter (straw yard) system or a compost pack. Large amounts of bedding are required. While deep litter and compost pack systems can look similar, the management principles are quite different between them.

A freshly aerated compost pack bed in a loose housing facility.

In a deep litter bedding system, a large amount of organic bedding material is placed on the housing base and is then continuously topped up to maintain a clean, comfortable surface. A deep litter system acts as a manure storage with the entire bedding material scraped out and replaced only once or twice a year.

In a compost pack system, the aim is to use the natural composting process in situ to maintain a comfortable bedded area. The combination of carbon from the bedding material, nitrogen from the manure and urine, and the right moisture level and aeration results in microbial breakdown of organic matter, i.e. composting, in the bottom 10-20cm of the pack.

The biological activity of the composting process generates heat, which helps dry the upper portion of the bedding pack.

The bedded pack requires aerating two or three times a day to maintain the composting activity and refresh the bedding surface. Fresh bedding is added to the pack when it becomes too wet.

Particular attention needs to be paid to cow density and ventilation in the housing so moisture levels do not get too high. A compost pack may operate for several years until it is removed and replaced.

• Composted manure as bedding. The use of composted manure (also known as dried or recycled manure solids) as a bedding surface has been gaining popularity as it is a relatively cheap product, and in plentiful supply. Manure is separated from the effluent stream, composted and then spread into the housing area. It is important to be clear that composted manure bedding is not the same as a compost pack bedding system.

So there you have it. More options than a stroll through a Forty Winks store really. But regardless of housing system and bedding choice, the goal is always to make sure cows have somewhere clean, dry and comfortable to lie down. D

Contact: Dr Sarah Chaplin, phone 0439 275 896, email <sarah.chaplin@ecodev.vic.gov.au>.

**Dr Sarah Chaplin is a development specialist animal performance with Agriculture Victoria and Dr Yvette Williams is a research scientist — dairy nutrition with Agriculture Victoria.*

Infrastructure reduces feed wastage

Key points

- Farm invests in infrastructure to cut feed wastage
- Commodity shed should deliver payback in six years
- Feedpad troughs prevent cows dropping feed onto floor

By **Steve Little**

THE McInnes Partnership farm at Harrisville in south-east Queensland milks 550 cows producing 4.2 million litres annually, with a rolling herd average of 7600 litres.

The McInneses have invested in some key infrastructure that minimises feed wastage.

Commodity Shed

The McInneses feed a number of by-products and meals. These include brewers grains, canola meal and whole cottonseed.

Early in 2016, they invested in a commodity storage shed to minimise wastage due to soil contamination of feedstuffs, spoilage due to rainfall, and heating from sunlight.

The commodity storage shed minimises wastage due to soil contamination of feedstuffs, spoilage due to rainfall, and heating from sunlight.

The shed cost $75,000 (ex GST), with an expected lifespan of 25 years. ▶

Feed Wastage practice audit

This checklist compared feed wastage rate to the relevant target for each feed-out method used.

FEED-OUT METHOD USED	TARGET*	OBSERVED / MEASURED	CHANGE?		THINGS TO CONSIDER
			4	Check (?)	
a In the dairy shed at milking	1%				Feeding system is not dispensing accurately and consistently into each bail Feed freshness, palatability and quality Build-up of stale feed in bails Bails are being over-filled Cows not hungry eg recently fed other feed Sick cows in herd eg acidosis
b In grazing paddock, on pasture	5%				Wet conditions Pasture too long Hay/silage chopped too long PMR over or under processed Feed freshness, palatability and quality Cows not hungry eg recently fed other feed Sick cows in herd eg acidosis
c Using temporary feedout area, feeding on bare ground, in ring feeders, old tractor tyres or under fence line	5%				Wet conditions Hay/silage chopped too long PMR over or under processed Feed freshness, palatability and quality Build-up of stale feed in feeders Feeders are being over-filled Indadequate feeder space per cow Poor feeder design Cows not hungry eg recently fed other feed Sick cows in herd eg acidosis
d Using semi-permanent feed-out facility with a compacted surface and low-cost feed troughing	5%				Wet conditions Hay/silage chopped too long PMR/TMR over or under processed Feed freshness, palatability and quality Build-up of stale feed in troughs Troughs are being over-filled Indadequate trough space per cow Poor trough design Cows not hungry eg recently fed other feed Sick cows in herd eg acidosis
e Using permanent feedpad with a compacted surface and purpose-build feed troughing	2%				As per d)
f Using permanent, fully developed feedpad with concrete surfaces	1%				As per d)

Ross McInnes feeds out in the farm's shaded feedpad that features a unique trough design.

◀ Moving from their previous on-ground storage to the new shed has meant a reduction of feed wastage from an estimated 5 per cent to less than 1 per cent.

Given that they feed about $300,000 ex GST a year in byproducts, this represents a saving of $12,000, with a payback of about six years.

Feedpad

In 2003, the business built a shaded feedpad and introduced a partial mixed ration to their feeding program.

'A unique aspect of this feedpad was the dimension and height of the troughs.'

A unique aspect of this feedpad was the dimension and height of the troughs.

These troughs are about 1.2 metres (internal) across and allow cow access from both sides. There is an electric wire that runs down the middle of the trough to manage cow behaviour.

In terms of feed wastage, the trough design has advantages in terms of limiting cows dropping feed onto the feedpad floor while chewing, with spillage remaining in the trough.

The troughs are also built 35 centimetres above ground level. This leads to an ease of feeding and saliva flow. D

Article courtesy of Subtropical Dairy newsletter Northern Horizons.

Researchers sequence rumen bug

Key points

- Rumen bugs genomically sequenced
- Could lead to development of vaccines to reduce methane
- Useful in developing products to increase feed conversion efficiency

IN an effort to figure out how to stop cows belching so much methane, a team of researchers has unearthed the bugs that live in the first of a cow's four stomachs. The group sequenced the genomes of more than 400 bacteria and archaea that live in the rumen, which they think is about three-quarters of all the microbes that inhabit the cow's microbiome.

About 130 were the same as those found in the human gut.

The researchers hope to find how the different microbes interact to see if they can safely eliminate those that pump out methane.

The global scientific project, led by New Zealand researchers, has generated a reference set of genome sequences of microbes found in the stomachs of sheep and cattle, and has been published in the respected international scientific journal *Nature Biotechnology*.

Authors Dr William Kelly and Dr Sinead Leahy from NZAGRC. Photo courtesy of NZAGRC.

The project, called the Hungate1000, was led by former AgResearch scientist Dr Bill Kelly and AgResearch scientist Dr Sinead Leahy.

The pair brought together nearly 60 scientists from 14 research organisa-

tions across nine countries, who collaborated to generate a reference catalogue of 501 rumen microbial genomes. Before Hungate1000, just 15 rumen microbial genomes were available to the scientific community.

Dr Kelly said the project was named after Bob Hungate, an American scientist who trained the first generation of New Zealand rumen microbiologists in the 1960s and 1970s.

"Bob Hungate developed the pioneering technique of growing anaerobic bacteria — that technique of culturing the microbes that then have their genomes sequenced has been the cornerstone of our project," he said.

Dr Kelly said the project gave a new understanding of what exactly was taking place inside a rumen.

"Hungate1000 means we can now start to reveal the intricacies of how the rumen microbial community functions, and provides a roadmap for where to take the science next," he said.

"This data can be translated into interventions that are useful, such as identifying targets for vaccines and inhibitors to reduce methane emissions and improve productivity, among other things."

Dr Leahy, who is currently seconded to the New Zealand Agricultural Greenhouse Gas Research Centre (NZAGRC) as its international capability and training co-ordinator, said the project represented a major scientific advancement in the field of rumen microbiology, an area of science that up until recently had largely been unexplored.

"These microbes in the stomachs of ruminants are crucially important — they convert grass and other dietary components into smaller compounds that the sheep or cow uses to make meat and milk," she said.

"The data we've made available with Hungate1000 will underpin the development of technologies to target these microbes and aid productivity or reduce greenhouse gas emissions — you need to know what you're targeting to make a specific impact on the rumen microbiome environment."

The NZAGRC's deputy director (international) Dr Andy Reisinger said Hungate1000 was central to the work that the NZAGRC was managing. "Hungate1000 shows what a powerhouse the rumen is in converting digestible plant material to energy, and gives us a much better understanding of how we might be able to use science to influence that process," he said.

"This will help us find ways not only to enhance productivity but also to achieve emissions reductions and deliver solutions to farmers — such as inhibitors and vaccines — that don't affect their bottom lines."

'Hungate1000 means we can now start to reveal the intricacies of how the rumen microbial community functions.'

The Hungate1000 data is available as a community resource on the United States Department of Energy's Joint Genome Institute website. "We had an open release policy, which meant the data was made available as soon as we generated it," Dr Leahy said.

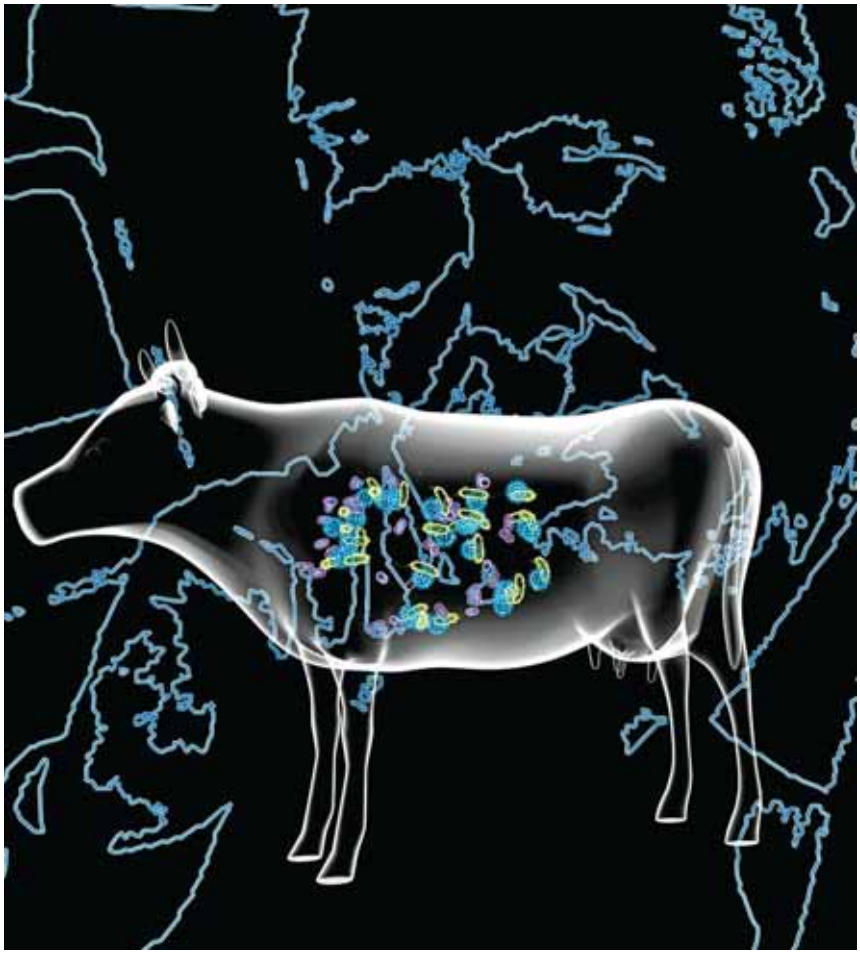
"That aligns with the GRA's ethos of science for the greater good — Hungate1000 is about coming together to advance global knowledge."

The Hungate1000 was funded by the New Zealand Government through the Ministry for Primary Industries in support of the Livestock Research Group of the Global Research Alliance on Agricultural Greenhouse Gases (GRA), which is administered by the NZAGRC.

The genome sequencing and analysis component of the project was supported by the United States Department of Energy's Joint Genome Institute (JGI), via its Community Science Program.

Dr Harry Clark, the director of the NZAGRC who also co-chairs the GRA's Livestock Research Group, said Hungate1000 would not have come about without the financial support of the New Zealand government. "The investment by MPI to support good science delivers multiple benefits, not just to New Zealand but globally too," he said.

"This project shows the power of international collaboration — we've been able to bring scientists together from around the world to create this resource that can benefit all countries, and New Zealand can be proud that we made it happen."



Researchers have sequenced the genomes of more than 400 bacteria and archaea that live in the rumen, which they think is about three-quarters of all the microbes that inhabit the cow's microbiome. Diagram courtesy of Rekha Seshadri (Joint Genome Institute) and Zosia Rostomian (Berkeley Lab Creative Services).

Be inspired at DairySA's Innovation Day

Key points

- ✔ What: DairySA Innovation Day 2018
- ✔ When: Thursday, June 7, from 9.30am
- ✔ Where: The Barn, Mt Gambier, SA

THE 16th annual DairySA Innovation Day to be held at Mt Gambier, South Australia, in June promises a relevant and motivating line-up of speakers who are set to offer insights into the latest advancements in people practices, innovative projects in plant and animal genetics and new approaches to managing agronomy and nutrition.

A key feature of this year's conference will be the inclusion of two panels comprised of dairy industry peers, each of whom have been selected for their unique dairy journey experiences.

'... it's important that dairyfarmers keep up to date with the latest advances in their industry.'

According to DairySA's Bec Walmsley, the DairySA Innovation Day — this year around a focus of 'People, Pastures, Pathways' — is the result of a collaborative approach between DairySA and south east South Australian dairyfarmers.

"Like all agricultural industries, it's important that dairyfarmers keep up to date with the latest advances in their industry," Ms Walmsley said.

"Whether it's the latest innovations in breeding and pasture and their effect on profitability at the farm gate, managing people — our greatest asset — in our dairy businesses, or looking at opportunities for life beyond dairy, this conference will give delegates the opportunity to hear new ideas, observations and pathways for their dairy future," she said.

Two conference sessions will see panellists share their observations and practical tips on managing the challenges that come with today's dairy business and the pathways within and beyond the industry.

"We often get comments from farmers that one of the most valuable insights to be gained from this conference is hearing from their peers and their insights into the challenges they've faced — whether it be around people, building equity, changing farm ownership structures, or life after farming," Ms Walmsley said.

The relaxed conference dinner will this year be hosted by the passionate SA Young Dairy Network, and provides the space for delegates to strengthen their thoughts from the day's presentations through conversations with friends, farmers and the broader industry.

"We encourage everyone in the dairy industry to immerse themselves in this conference, be challenged, and draw inspiration from their peers," Ms Walmsley said.

The DairySA Innovation Day 2018 will be held on Thursday, June 7, from 9.30am at The Barn, Mt Gambier.

To register head to Eventbrite <https://2018-dsa-innovationday.eventbrite.com.au/>.

May 20-23 Lexington, Kentucky, US	**Alltech One 18 Conference** Website: <http://one.alltech.com/>
May 22 Smithton, Tas	**Euthanase Livestock Course** Website: <https://www.dairyaustralia.com.au>
May 29 Cowra, NSW	**Dairy Farm Business Analysis (Day 1 of 3)** Phone: 0488 277 133 Email: <sheena.carter@dairyaustralia.com.au> Website: <https://www.dairyaustralia.com.au>
June 5-7 Toowoomba, Qld	**Farmfest** Contact: Rural Press Events Phone: (02) 6768 5800 Email: <farmfest@fairfaxmedia.com.au> Website: <http://www.farmfest.com.au/>
June 7 Mt Gambier, SA	**DairySA Innovation Day** Contact: Bec Walmsley Phone: 0418 951 324 Email: < rebecca@dairysa.com.au > Website: <http://www.dairysa.com.au/>
June 13-16 Hamilton, NZ	**New Zealand National Agricultural Fieldays** Phone: +64 7 843 4499 Website: <www.fieldays.co.nz>
June 13-15 Sydney, NSW	**Irrigation Australia 2018 Conference** Phone: (02) 8335 4000 Email: <info@irrigation.org.au> Website: <www.irrigationaustralia.com.au>
June 14-16 Casino, NSW	**Primex** Phone: (02) 6768 5800 Email: <primex@fairfaxmedia.com.au> Website: <www.primex.net.au>
July 4-5 Bendigo, Vic	**Victorian Winter Fair** Contact: Clare Modra Phone: (03) 5487 1127 Email: <victorianwinterfair@gmail.com> Website: <www.facebook.com/victorianwinterfair/>
July 17-18 Camden, NSW	**Dairy Research Foundation Symposium** Phone: (02) 4655 0631 Email: <michelle.heward@sydney.edu.au> Website: <http://sydney.edu.au/vetscience/foundations/drf/symposium/>
July 26 Bussellton, WA	**WA Farmers dairy section conference** Contact: WA Farmers Phone: (08) 9486 2100 Website: <www.wafarmers.org.au>
July 29-31 Adelaide, SA	**Australian National Fodder Conference** Phone: (03) 9670 0523 Website: <www.afia.org.au/>
August 10-19 Brisbane, Qld	**Ekka** Phone: (07) 3852 3900 Email: <enquiries@ekka.com.au> Website: <www.ekka.com.au>
September 11-12 Melbourne, Vic	**Australian Institute of Food Science and Technology convention** Phone: (02) 9394 8650 Website: <https://www.aifst.asn.au>

Latest dairy-irrigation technology at 2018 Irrigation

IRRIGATION efficiencies in dairyfarming, driven by the latest technological developments, will be among the areas featured at the 2018 Irrigation Australia International Conference and Exhibition.

And with increasing efficiencies key to productivity, the free-to-attend exhibition and workshops give irrigating dairy producers the opportunity to see, ask about and buy the latest from more than 165 exhibitors.

The biennial event, held from June 13-15, includes the southern hemisphere's largest irrigation conference, with more than 80 local and international speakers.

Among the speakers are Peter Smith presenting on 'Achieving improved profitability on irrigated dairy farms', Dr Alison McCarthy talking about 'Automated cloud-based irrigation for centre pivot irrigated dairy pasture', and Dr James Hills, presenting on 'Irrigation scheduling and the 'green drought' phenomena in Tasmanian dairy pastures'.

Irrigation Australia's CEO Bryan Ward said: "The theme this year is 'Addressing the Big Issues'.

"Among the key areas the conference will focus on are new technologies in agriculture, how the sectors are dealing with wastewater and reclaimed water, drought and salinity management, water rights, transfers and mitigation, and site-specific irrigation and precision farming.

"It will also look at broad issues for Australia that also affect dairy irrigators, such as the Murray-Darling Basin Plan, National Water Infrastructure Development, developing northern Australia and Tasmania-specific issues.

"Future planning will look at issues surrounding supply and demand, energy affordability, sustainability and education and training; while in international matters, speakers will cover case studies, plus some research and the latest in innovative projects.

"The event is a unique opportunity for dairy irrigators to see live demonstrations of advanced technologies and product launches of the latest solutions, and talk with key suppliers.

"It's also where they can learn about global innovations and how they are allowing irrigators to increase results and decrease operating costs."

Mr Ward said a series of free-to-attend workshops would also be on offer.

"These will cover a broad range of areas and are an excellent way for irrigators to keep themselves informed of issues," he said.

Registrations are now open for both the conference and free exhibition.

To register or for more information, please visit <http://iaice.com.au>.

Preventing and treating pain important

By **Sherri Jaques***

Key points

- ✔ Pain relief lifts rate of healing
- ✔ Range of different options available
- ✔ Vets best placed to provide advice

IN the past two decades, there has been an increased understanding of how pain is transmitted and perceived in the pain centres of the brain. The effects of anticipating and pretreating pain prior to surgery and the effects of pain on growth, healing, and food intake have been better defined.

While pain does have a physiological role in the acute accident setting of encouraging the injured to rest the injured area, continued pain and unnecessary pain can result in increased time to healing, the release of steroids (cortisol), which leads to a catabolic state (this means the body is using more energy and using up its reserves), and decreased production. If pain causes cows to walk less, then they graze less, which means they grow less, produce less milk or both.

Signs of pain in cattle can include:

- Turning to the painful area, limping.
- Dopey and listless, moving and eating less.
- Agitated, restless.
- High heart rate and breathing rate.
- Licking, stamping feet, kicking.
- Vocalising, grinding teeth.
- Weight loss (chronic).
- Decreased milk production.
- High cortisol levels.

In 2015 a study was undertaken to determine how best to recognise pain in cattle (Gleerup etal, Applied Animal Behavior Science, vol 171, Oct 2015 p25-32). This study found that behaviour and body position was the best measure of the intensity of pain. They found that cattle show specific pain behaviours, that these pain behaviours are altered by analgesia (pain relief) and summarised these behaviours into a pain score (see Table 1).

There is a common belief that younger animals 'feel' less pain. This has been based on studies that have measured cortisol. However, young animals are believed to have all the same pain receptors and neural pain pathways as adults.

It has also been argued that younger cattle with smaller less developed testicles (for example) would have smaller surgical cuts or surgical damage at castration. This may indicate that undertaking routine procedures on the young has the advantage of less tissue being 'damaged' compared with when fully grown and that it may well be less painful. In my view, this does not indicate that they don't feel pain or that pain relief (analgesia) shouldn't be provided.

'...it appears that treating pain decreases the time to healing and minimises decreases in production.'

There are various different mechanisms that the classes of analgesics work by, and studies have shown that the best results are seen if more than one mode of analgesia is used preemptively. Less analgesia is required in total if it is given prior to injury/surgery compared with using the same drug for post-operative pain alone. Prevention of pain receptors sending the pain via the nerves to the brain, appears to be better than trying to 'cure' the pain post-operatively.

Analgesics available include the following classes, which all work via different mechanisms:

- 1. local anaesthetics (lignocaine and Bupivicaine).
- 2. Opiates (morphine, butorpahnol, buprenorphine, fentanyl).
- 3. Non-Steroidal Anti-Inflammatories NSAIDs (meloxicam, flunixin, ketoprofen).
- 4. Ketamine — a dissociative anaesthetic with brain analgesic activity.
- 5. GABA antagonists, GABA is a neurotransmitter in the brain important in the pain process — many of these eg gabapentin have not yet been used in cattle to my knowledge.
- 6. Alpha 2 agonists (xylazil, metdetomidine, detomidine).

In the past two decades, increased classes of analgesics have been used and farmers may have noticed their vet using a local anaesthetic (lignocaine or bupivicaine) mixed with alpha 2 agonists (xylazine) or opiates when they give an epidural. This can lead to beneficial systemic effects — such as sedation — but also results in pain relief lasting longer or being more profound.

There are many common ways of providing analgesia including:

- Injectable opiates and NSAIDs.
- Local anesthetic in the tissue involved, intravenously or as local nerve blocks. Local nerve blocks work well and can be used for surgery of the eye, the horns/buds, paralumbar (vertebral blocks).
- Intravenous regional blocks are often used for the distal foot.
- Epidurals (some of which can be used for standing paralumbar surgeries such as bloat stab repairs).
- Constant rate infusions during anaesthesia. Many of the drugs have been found to be effective if used during anaesthesia as a constant rate intravenous infusion, for example, lignocaine and/or ketamine, where low doses are effective at controlling pain during surgery.

Please note that the milk and meat withholding times vary greatly even within the same class of analgesic and a veterinarian is the best one to advise farmers on relevant withholding times when they dispense them. NSAIDs, for example, includes flunixin and ketoprofen (both relatively short milk withholds if used IV); meloxicam — longer milk withhold, however, one injection last three days for analgesia; and phenylbutazone — no longer used in cattle as the meat withholds can be up to three years and milk up to six months depending on how it has been given and for how long.

In summary:

- Increasingly it appears that treating pain decreases the time to healing and minimises decreases in production, while healing occurs.
- Using a mix of modes of analgesia appears to work best.

Table 1: The Cow Pain Scale including the pain specific behaviours

Score	0	1	2
Attention towards the surroundings	Active and attentive The cow is active: eating, ruminating, grooming etc. The cow is attentive and/or attention seeking/curious	Quiet/depressed The cow is not active, avoiding eye contact, may move away from the observer	
Head position	High/level of withers The cow is active, eating, ruminating or is contact seeking/curious	Level of withers The cow is not active, not eating, ruminating, grooming or sleeping	Low The cow is not active, not eating, ruminating, grooming or sleeping; may lie down quickly after getting up
Ear position	Both ears forward or one ear forward or back and the other listening	Ears back/asymmetric ear movements Both ears back or moving in different directions (not forward or back)	Lambs' ears Both ears to the sides and lower than usual; the pinna facing slightly down
Facial expression	Attentive/neutral look The cow is attentive, focused on a task (eating, ruminating) or sleeping	Tense expression/strained appearance The cow has a worried or strained look, furrows above the eyes and puckers above the nostrils	
Response to approach	Look at observer, head up, ears forward or occupied with activity (grooming, ruminating)	Look at observer, ears not forward, leave when approached	May/may not look at observer, head low, ears not forward, may leave slowly
Back position	Normal	Slightly arched back	Arched back

Source: Gleerupl Anderden, Munksgaard and Forkman, Applied Animal Behavior Science, vol 171, Oct 2015 p25-32.

• Using analgesia before and during surgery greatly decreases the discomfort noted post surgery, and requires less analgesics, compared with trying to treat pain after surgery only.

The options available to veterinarians have grown, and are expected to continue to grow.

Ask them about current options as they change regularly. There are also many different options that achieve the same goal — there is no 'one' way to achieve analgesia but many ways and there are pros and cons for each method/mix.

One of my favourite older farmers (now deceased), when I asked him if I could use an intravenous analgesic line in a calf during a large hernia repair under anaesthesia said "of course". This was 20 years ago when I first graduated. He then further commented: '"If I look after the cows then they'll look after me." Sometimes the new wisdom is not as new as we think. D

**Sherri Jaques is a practising veterinarian and reproduction adviser in the West Gippsland region of Victoria. All comments and information discussed in this article are intended to be of a general nature only. Please consult a veterinarian for herd health advice, protocols and/or treatments that are tailored to a herd's particular needs.*

Correction

IN the article on page 100 of the March-April 2018 edition of the *Australian Dairyfarmer* about treating blowfly strike, an error was made in the second paragraph. The article pertains to flystrike caused by native blowflies only and the screwworm fly was mistakenly listed as being a cause of flystrike in Australia.

This is an error. The screwworm fly is exotic to Australia and the subject of an extensive monitoring program in northern Australia to ensure that it does not enter. For further information regarding surveillance programs and general information about the exotic screwworm fly visit the Animal Health Australia website <www.animalhealthaustralia.com.au>.

The photograph attached to the file was one from the magazine's archives and was included erroneously by the editor. The editor and I apologise for any confusion these errors have caused.

DataGene
Solutions for Herd Development

Genetic gain speeds up

Key points

- ✔ Rate of genetic gain doubled in under 10 years
- ✔ Genomics plays key part
- ✔ New breeding indexes and Good Bulls strategy contribute

A RECENT analysis of genetic trends in the Australian dairy herd shows that the rate of genetic gain has accelerated in the past decade.

DataGene's genetic evaluation manager Michelle Axford analysed the rate of genetic gain for Balanced Performance Index (BPI) based on the sires of cows (see Figure 1).

"When we look at the rate of genetic gain across five-year time blocks, it's very clear that the rate has sped up dramatically in the past decade," Mrs Axford said.

"The average rate of genetic gain since 2005 was about $15.80/year (green line in the graph), but the current rate is more than $20, which almost double that of in 2005-2009 ($10)," Mrs Axford said.

She said a number of initiatives had contributed to the acceleration in genetic gain, including the introduction of the Good Bulls Strategy in 2010, genomics in 2011 and dairy's three new indices in 2015.

"There's no doubt that genomics has increased the rate of genetic gain in dairy herds around the world," Mrs Axford said.

Genomics speeds up genetic gain by providing reliable predictions of genetic potential of animals from a very young age, long before performance data becomes available for traditional genetic evaluation methods.

"In Australian dairy herds, the rate of genetic gain has had the added boost from the Good Bulls Strategy and new breeding indices," she said.

Introduced in 2010, the Good Bulls strategy gives Australian dairyfarmers a simple tool to identify bulls that will contribute to increased herd profitability.

"Bulls that carry the Good Bulls logo meet the minimum criteria for Balanced Performance Index, availability and reliability," Mrs Axford said.

"There is a wide range of Good Bulls, giving farmers plenty of choice for Good Bulls that meet their priorities for specific traits, budget and company preferences."

Good Bulls
Bull choices made easy

By using bulls that carry the Good Bulls icon, dairyfarmers can be confident they will improve their herd's genetic potential for profit.

The latest list of Good Bulls is published three times a year in the Good Bulls Guide and app, available from the DataGene website.

"Encouraging farmers to use a Good Bulls straw to breed every replacement is a collective effort," she said. "Bull companies, AI service providers, farmers, researchers and industry have all had an important role to play."

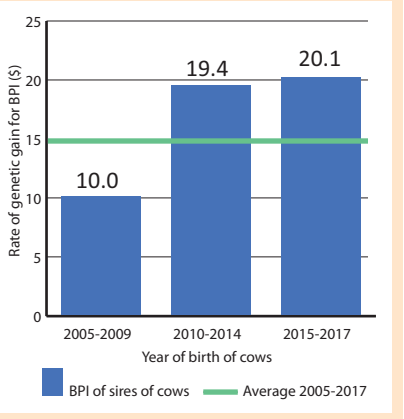
'When we look at the rate of genetic gain across five-year time blocks, it's very clear that the rate has sped up dramatically in the past decade.'

Mrs Axford said there had been rapid acceptance of the three dairy breeding indexes introduced in 2015.

The Balanced Performance Index (BPI) is an economic index that blends production, type and health traits for maximum profit. The Health Weighted index (HWI) gives greater emphasis to fertility, mastitis resistance and feed saved. The Type Weighted Index places more weighting on type traits.

"While the Health and Type-weighted indices have a following of farmers seeking to fast-track specific traits, the BPI rapidly became a widely-accepted tool for selecting bulls," she said. "The BPI is used by farmers, breeding advisers and in semen catalogues."

Figure 1: Rates of genetic gain for BPI in Australian Holsteins in different time periods



Within 18 months of the launch of the three new indices, 65 per cent of farmers surveyed were aware of the BPI, and almost 80 per cent of those said the BPI influenced their bull selection decisions.

Younger farmers were the most likely to be aware of the BPI as were large, extra-large and xx-large herds.

Mrs Axford said there were several reasons for the wide acceptance of the BPI. "The development of the three new indices was based on genuine and deep consultation with a broad range of dairyfarmers," she said.

"This meant the new indices were aligned to their breeding priorities. Having three indices recognised that not everyone has the same priorities.

"Extension activities have helped farmers more clearly define their breeding objectives, select their preferred index and use Good Bulls to build the herd they are looking for. The indices are backed by the strong science that is needed to have confidence in the results." D

Contact: DataGene, phone (03) 9032 7191 or email <abv@datagene.com.au>.

Karen Low keeps a copy of *Rearing Healthy Calves* handy to help when making changes to calf rearing.

Rearing Healthy Calves makes difference

Key points

- ✔ Rearing Health Calves course and manual invaluable
- ✔ Improved management of colostrum feeding
- ✔ Refers to manual when planning calf-rearing changes

FOR Karen Low, Rearing Healthy Calves is all about the 'one-per-centers' that make the difference between average farm practices and high-quality performance in growing young stock.

The Trafalgar South, Vic, dairy-farmer attended a Healthy Calves course in 2017 and, ever since, has referred to the *Rearing Healthy Calves* manual whenever a significant decision has to be made.

"If Dairy Australia are going to offer us this information, we need to go in and soak it up," she said. "Even though you might think you know everything, there is always something new to learn."

With her husband Robert, Mrs Low has helped transform calf-rearing practices by making small improvements to a number of key areas.

Colostrum management on their central Gippsland farm is one facet of calf rearing that has improved significantly since she attended the course.

"I got some new information on colostrum that was really helpful," she said.

"It made me aware of the quality of colostrum and how time sensitive it is. It's just understanding different aspects of how a calf's body works.

"Understanding that as soon as the calf is born its ability to absorb colostrum starts to decline — after 24 hours it stops completely. Things like that are important to understand."

'I got some new information on colostrum that was really helpful.'

Since doing the Healthy Calves course, the Lows have bought a Brix refractometer to assess colostrum quality and to make sure their calves are getting the best start in life.

"We knew (colostrum dosing) had to be done quickly, but when you are dosing quickly you don't often have a lot of colostrum, so you just use what you have," she said.

"But if we have oodles of colostrum, then I test it and only use the highest quality."

Mrs Low said she referred to the *Rearing Healthy Calves* manual whenever a significant change was made to their management of calves.

"We always have the book there and we refer to it when taking into account the size of pens and things like that," she said. "All the details are in the book so we can just refer to it whenever we need to.

"I often look through the books and keep notes in there. You have a reference that you can look up and see what the correct thing to do is."

Mrs Low encouraged other farmers to attend a Healthy Calves course, even if they believed they were already good calf rearers.

"I really loved the course because, as I said, you might think you know everything but you learn that you can do it so much better," she said.

Rearing Healthy Calves was first published in 2011 and has proven extremely popular with farmers and calf rearers, with about 12,000 copies of the original publication circulated.

The manual offers farmers ideas on how to enhance the way they manage calves. Farmers, animals and consumers all benefit from stronger, healthier calves. D

Hard copies of *Rearing Healthy Calves* can be ordered for free from <www.dairyaustralia.com.au/healthycalves>.

Dairy Australia
Your Levy at Work

Trees put dollars in farmers' pockets

Key points

- ✔ Tree plantations provide benefits on farm
- ✔ Provide shelter for animals from extremes
- ✔ Shelter pasture from drying winds

MONEY may not grow on trees, but planting them can help put dollars in the pockets of dairyfarmers.

Establishing shelterbelts is a proven way to maintain production levels in extreme weather, with both cows and pastures performing better where trees have been planted.

Dairy Australia has created a series of short videos telling the stories of farmers who are reaping the benefits of shelterbelts and explaining how to plan, plant and maintain treed areas.

United Dairyfarmers of Victoria president Adam Jenkins said tree planting had helped him grow better pastures and boost herd productivity at his dairy farm at South Purrumbete in western Victoria. "In retrospect, we would have loved to have put them in earlier," Mr Jenkins said.

'The loss of production from that area being planted with trees is more than compensated by the benefits ...'

"Preventing exposure to that cold south-west wind in winter means the cows are using less energy. It means less feed cost and input costs are lower because the cows are well catered for in the wind."

Yarram, Vic, farmer Damian Moore echoed Adam's observations, pointing towards improved performance in both summer and winter to justify the effort and expense in planting out shade and shelterbelts.

"In winter it has created a bit of a microclimate up to 40 or 50 metres out from the shelter belt," he said.

"We've definitely experienced less wind which has helped with earlier pasture growth. As we move into the summer months, you can see that the same area has died out later than other pasture."

Mandy and Andrew Pacitti plant trees on the family farm at Myponga, South Australia

In the brutal summer months, Stony Creek, Vic, farmer Darryl Sinclair said his decision to sacrifice a small percentage of his pasture for trees paid an obvious dividend.

"In a heatwave a few years ago, we had 40 degree days for a few days in a row, but I was able to keep up my rotations because each paddock had a row of trees in it where the cows could get in the shade in the afternoon," he said.

The balance between lost paddock area and the benefits of greater shade and shelter is one that West Gippsland Catchment Management Authority's Matt Bowler often talks about with farmers.

His conclusion is that the cost/benefit analysis falls the way of planting trees every time.

"The loss of production from that area being planted with trees is more than compensated by the benefits to pasture, animal shelter, water quality, pest insects being eaten by birds and just the aesthetics of having trees on your farm," he said.

For more information on how shade and shelter planting can help farm performance go to <www.dairyclimatetoolkit.com.au/videos>. Topics covered in the videos include:

- Economic benefits of shelterbelts in dairy.
- Direct seeding shelterbelts.
- Locating and designing shelterbelts.
- Planting and maintaining shelterbelts.
- Benefits of shelterbelts.

Graeme and Jenny Cope, GippsDairy workforce co-ordinator Leah Maslen and Murray Goulburn field services officer Jol Dutton talk about the Farm Safety Manual developed for the Cope farm.

Transforming farm safety culture

Key points

- ✔ Process helps farms develop safety manual
- ✔ Helped farm change safety culture
- ✔ Quad bike policy produced instant results

A NEW Dairy Australia initiative to prevent deaths and injuries on dairy farms is set to position the industry as a leader in workplace safety.

Developed after a tragic 2016 saw six lives lost on Australian dairy farms, the program has already been credited with transforming the safety culture on a number of farms since a pilot began late last year.

A Farm Safety Starter Kit and workshops across all eight dairy regions have been designed to help farmers complete a quick safety scan of their property before guiding them through the development of a comprehensive safety program.

At the end of the process, farmers will have introduced practical safety measures around their farms and be operating with a tailored *Farm Safety Manual* in place.

The manual outlines policies and practices to prevent serious injuries across 14 key areas, including quad bike safety, working with livestock, confined spaces and children in the workplace.

Graeme and Jenny Cope employ up to six people at their farm at Fish Creek in Victoria.

Through their involvement in the Focus Farm project, the pair had identified creating a safer work environment as a major priority.

For Mrs Cope, improving quad bike safety was at the top of the list.

"At the start of it all, there were no helmets worn, no rollover protection, they just jumped on and got going and that's what was scaring me," she said. "They were going way too fast and I thought someone is going to get hurt here."

After being introduced to the Farm Safety Starter Kit at a GippsDairy Farm Safety Day, the couple enlisted the help of their field services officer to do a safety scan of their property and came up with an action plan.

They then worked with their employees and GippsDairy workforce co-ordinator Leah Maslen to develop safety policies, including a quad bike policy that Mrs Cope said changed the farm's safety culture overnight.

"We fitted three bikes with rollover protection and they all have helmets," she said. "So if you get on the bike, you've got a helmet or you're in strife."

Dairy Australia farm safety project manager William Youl said the resources enabled farmers to take a staged approach to creating a safe work environment.

"Once they have done their risk assessment and developed an action plan with the Starter Kit, the Farm Safety Manual resource walks them through the process of addressing areas of risk one-by-one," Mr Youl said.

The resources were developed with heavy involvement from the safe work authorities in each state.

The Farm Safety Starter Kit is already available to all dairyfarmers while the Farm Safety Manual will be available later this year. D

To find out more, contact a field officer or local RDP (contact details are on the inside back cover of this edition of the *Australian Dairyfarmer*).

A Feeding Pastures for Profit course has helped young South Australian dairyfarmer Haydn Pocock improve his skills.

Profiting from pasture

Key points

- ✔ Feeding Pastures for Profit course develops skills
- ✔ Assess the amount of homegrown feed allocated to herd to directly graze
- ✔ Then calculate the amount of supplement to be offered

HAYDN Pocock only needs to look at his paddocks in spring to see the impact of Feeding Pastures for Profit (FPFP).

The dryland dairyfarmer from South Australia's Adelaide Hills said that since doing the Dairy Australia course recently, he had seen improvement in his pasture, cow performance and balance sheet.

"We reckon we can see the difference in the pasture already," Haydn said. "We've fed two kilograms of grain per day less this season compared to the previous. Our components are better and production is up."

Hadyn returned to the dairy industry a few years ago to farm with father Kym on their Echunga property.

Hungry for the latest farming information, he enrolled in FPFP.

'The major change was holding off on the pasture and not grazing it too early.'

While he reckons his father has been practising most of the FPFP teachings for years, Haydn believes the simple science presented in the course made understanding the fundamentals of quality pasture production easier.

FPFP helps farmers increase the use of home-grown feed by growing more grass, promoting the profitable use of pasture and crops and the efficient use of supplements by using simple and practical tools.

Dairy Australia's Cath Lescun said FPFP gave farmers the concepts and tools to help with daily pasture allocation and the amount of supplement to feed to optimise profit.

"Feeding Pastures for Profit is a very successful program developed by DEDJTR (Department of Economic Development, Jobs, Transport and Resources) Agriculture Victoria and Dairy Australia, and is highly regarded with more than 1500 farmers having completed it," she said.

"It gives farmers the skills and confidence they need to make decisions about their feed, which is vital for profitable farming.

"The first part of the program is all about getting the rotation right using the 'Rotation Right' tool.

"The second part of the program is learning about effective supplement use and how feeding more sup-

plements than is necessary reduces farm profit."

Hayden said it was a methodical way of going about it.

"There's a system you can follow with the Rotation Right tool," he said.

"We have it on paper, but I also have it on Excel on the computer, so occasionally I will go and tweak it and change the rotation lengths or take areas in or out of the rotations."

Since completing the course, Hadyn and Kym have been reassessing their grazing methods. "The major change was holding off on the pasture and not grazing it too early," Hadyn said.

"That meaty part of the curve is when you graze as late in the third leaf stage as you can, but still before closure. Canopy closure was something that was spoken about a lot, especially the importance of getting sunlight down to the tillers.

"We're also thinking that we have potentially been working the farm a little bit hard and were running numbers a bit high for a while.

"So now we are focusing on pasture — that's where we see us getting the biggest benefits from."

Improving pasture management through courses such as FPFP is a no-brainer for a farm business where having enough grass in the paddock or silage in the pit is vital to balancing the books.

"Purchased feed is our biggest expense, so the more homegrown feed we can produce, the better the bottom line for us," Hadyn said.

- FPFP aims to provide participants with the underpinning knowledge, skills and practical tools to better manage their pastures and make two major profit driving decisions:
- 1. How much homegrown feed do I allocate to the herd to directly graze today?
- 2. What amount of supplement do I need to offer the herd to be feeding 'in the profit zone'?

The course consists of two classroom days, five seasonal farm sessions and one individual farm visit to support the implementation of the concepts.

For more information go to <www.dairyaustralia.com.au> or contact a Regional Development Program (see contact details inside the back cover of this edition of the magzine).

Table 1: Haydn Pocock, Adelaide Hills, SA, farm details

Dairy Region	South Australia Central
Milking area (ha)	85
Cows milked	150 mainly Holsteins (yearly average of 135)
Milk production (kg milk solids)	78,100
Milk production (kg milk solids/cow)	580
Home grown feed (tonnes/dry matter/ milking ha)	n/a
Purchased feed (t DM/cow) Concentrate Hay/silage	 2.22 1.05
Cows/full time employee	65

Irrigation systems checks essential

IT'S a great time to tackle irrigation system maintenance. Irrigation problems are not always apparent during the cooler times of year, but once summer heat arrives, the system will be providing a lifeline to pastures and crops. The Smarter Irrigation for Profit project conducted "catch can" tests on three centre pivots during the 2015/16 irrigation season finding that two of the older pivots tested weren't performing to industry standards and as a result were wasting water and potentially limiting pasture production.

Before irrigation begins for the upcoming growing season, ensure the centre pivot irrigation system is functioning properly. Take the time to service power units and before starting up, check electrical systems, pumps, piping and intakes, pivot gearboxes and drivelines. It also pays to inspect the anchor bolts and grease the pivot point.

Next, operate the power unit and pumping system to fill pipes and bring centre pivot up to operating pressure. Check pressures at the pump, pivot point, and end of pivot. Always check pressure with pivot parked in same spot.

With pivot fully operational, check the system flow rate and compare with the design flow rate on the sprinkler chart. Verify flow meter is working properly. Walk the pivot looking for malfunctioning sprinklers, including clogs, worn impact plates, missing sprinklers, etc. If possible, verify each sprinkler matches the sprinkler specified in the sprinkler chart. Consider performing a "catch can" test to evaluate water application uniformity. Visually verify regulators are working properly. Replace missing or malfunctioning regulators. Take note of any leaks anywhere in the system and repair. Verify centre pivot operates with towers in proper alignment. Test safety circuits to verify proper performance. Check tyres for wear, cracking, low pressure, etc. Make sure all lugs are tight. Test the control panel settings for autostop, autoreverse and end gun coverage areas. Make sure end gun watering angles are set properly.

Losses from a pivot that is not working correctly can mount up quickly. Tim Powell from Integrated Irrigation estimates that a 40-hectare pivot operating at a Distribution Uniformity (DU) of 51 per cent and a Coefficient of Uniformity of 86 per cent (the field performance target for pasture is DU greater than 90 per cent and CU greater than 85 per cent) could potentially lose $11,000 per year on a dairy pasture if growth was inhibited by 25 per cent due to under or over watering.

If struggling for time remember that an irrigation supplier can conduct system checks and catch can tests for the farmer.

For further information on the Smarter Irrigation project, contact Monique White, phone 0400 972 206 or email <monique2@internode.on.net>.

The Smarter Irrigation for Profit project is supported by funding from the Australian Government Department of Agriculture and Water Resources as part of its Rural Research and Development for Profit Programme, and Dairy Australia.

Dairy Australia
Your Levy at Work

Business in focus through tough times

Key points

- ✔ Focus Farm through milk price crash period
- ✔ Opportunity to reexamine every facet of business
- ✔ Better understanding of cost of production

GIPPSLAND dairyfarmers Paul and Lisa Mumford have ridden the Focus Farm rollercoaster through one of the toughest periods in recent memory.

The milk price crash in 2016 hit the Won Wron couple hard — as it did for so many other farming families — with tough decisions needed to keep the business in solid shape.

With a history in banking, Mr Mumford knows that numbers don't lie and he was comfortable opening his books throughout the Focus Farm period.

They haven't always made good reading in the past two years, but the Mumfords have soaked up the input of their hand-picked Focus Farm support group during that time.

"They are quite ruthless to us, which probably concerns Lisa more than myself, so it can be a challenge," Mr Mumford said.

"But we have to make sure we are totally open and honest with our numbers. While we were struggling a bit in 2016, we think we have turned the corner and the numbers are backing that up."

The Mumford family have improved their business focus during a difficult time in the industry.

Being Focus Farmers during a tough period has forced the Mumfords to reexamine every aspect of their business and helped them to make a number of small adjustments that have added up to a big improvement in business performance.

"Business-wise, it's been turned on its head," Mr Mumford said.

"The Focus Farm has asked us about our margins, cost structures,

Tracking real decisions on real farms

INFORMATION about Dairy Australia's Focus Farm project can be found at <www.focusfarms.com.au> and Regional Development Program websites (see details inside the back cover of this edition of *Australian Dairyfarmer*).

The tracking of real decisions on real farms under real conditions for a two-year period provides visibility into the impact of those decisions on the bottom line.

In addition, Focus Farms allow consideration and discussion about the factors impacting decisions at any point in time, including seasonal and market conditions.

Dairy Australia's Neil Webster said Focus Farms were part of an overall strategy from Dairy Australia to build farm business management skills across the industry.

"This is an exciting program for farmers to be involved in, either as a Focus Farmer, support group member, keen follower or by attending open days and events," he said.

"Focus Farms are real farms, making real decisions under real conditions which makes them very relevant to other farmers.

"Our evaluation also shows that being involved with a Focus Farm does improve people's farm management skills and knowledge."

The Focus Farm model develops business profitability options by closely monitoring farm activities and decisions on a commercial dairy farm.

Focus Farm farmers are supported by a facilitator who works with them to establish the goals of their farm. The main goals for farmers usually relate to increased profitability, progressing their farming career or more efficient ways to manage the farm.

The facilitator and farmer also put in place a Support Group made up of farmers and service providers who the host farmer is comfortable with because lots of the farm's information is shared in the next two years.

At regular meetings, the Support Group revisits the farm goals and progress made towards them and any barriers that have popped up.

They also discuss the timely technical issues, for example, fertiliser application, rotation length, cell count, feed options, pasture renovation, etc.

The Focus Farm process is flexible in approach and is tailored to help achieve the aspirations of the Focus Farm farmers involved by:

- Focus Farmers setting their business and family goals.
- The preparation of farm production and financial budgets in a simple form that everyone, including the wider dairy community, can follow.
- The input to key decisions provided by the support group members.
- Focus Farmers ultimately making the decisions for their farm business.

Table 1: Paul and Lisa Mumford, Won Wron, Vic, farm details	
Dairy Region	Gippsland
Milking area (ha)	193
Dairy	50 stand rotary
Herd numbers	390 cows
Annual stocking rate (cows/milking ha)	2.0
Milk Production (Kg Milk Solids)	186,717
Homegrown feed (t/DM/total Area ha)	7.1
Homegrown feed in diet	73%
Cows/labour unit FTE	99

'So we've questioned cost structures in many parts of the business.'

economics of decisions that we have previously made.

"It has really made us think about what is the cost of production, not only in dollar value, but also the effects on the cash book, the farm itself and the animals.

"So we've questioned cost structures in many parts of the business."

Mr Mumford cites a better understanding of production costs as the single most significant change that has come about through the Focus Farm period.

"We know what the physical cost of production on a cow level — practically on every day — is," he said.

"It's making us evaluate the profitability of the business, on any one day throughout the year, to allow us to make decisions moving forward.

"We know our business better on a financial basis.

"I don't think we were bad prior, but it has honed our skills and quantified what we are thinking."

Dairy Australia delivers valued information, resources and services that create opportunities and support dairyfarmers to run successful dairyfarming businesses.

Table 2: Example of a GippsDairy Focus Farms Report	
Farm Location:	Won Wron Date: 6 March 2018
Milking Area:	193 Hectares
Production:	
Cow numbers	274 in vat (+1 mastitis)
kg milk solids/cow/day	1.53
Litres/cow/day	17.3
Fat %	5.2
Protein %	3.82
BMCC	145,000
Grazing and Supplement Feeding:	**kgDM/cow/day**
Wheat @ $290/t or 32.22cents/kgDM	5.04
Balancer Pellet @ $540/t or 60 cents/kgDM Silage (pit) @ $120/t or 12 cents/kgDM	1.35 6.5
Pasture kg DM approx. (based on 11MJ/kgDM)	2.7
Rotation Length	30 days
Grazing area (per 24 hours) Area out of rotation	5.5 ha 40 ha
Daily Income over Supplementary Feed Costs (IOSFC)	
March Milk Price ($6.30/kgMS)#	$6.10
Income/cow	$9.64
Supplementary Feed Cost/cow	$3.21
IOSFC/cow## IOSFC/ha	$6.43 $9.13
IOSFC/day (herd)	$1,762

Milk price is current announced total package and is inclusive of productivity and quality [includes additional $0.40/kgMS and step up]

Cost of pasture has not been included. This will range from 10–20c/kgDM during the year

Comments:

Pasture cover is low across the 153ha in rotation — still a slight pick with the harvest around 130-150kgDM/ha. Paddocks are well set up for the autumn sowing. The herd are being supplemented with wheat and balancer pellets with the ration equivalent price at $352/tonne (including $10/tonne crushing). Balancer pellets are 33 per cent wheat, 15 per cent barley, 17 per cent canola and 17 per cent lupins. The specs are 17 per cent protein, 13 megajoules and 15 per cent Neutral Detergent Fibre (NDF). The farm has been involved in the Dairy Australia Fert$mart program – an on-farm investigation has shown sulphur levels across the farm are low and require attention. A blanket application of single super may be applied in the next few weeks to address shortfall in sulphur and phosphorous, depending on the Support Group's thoughts and budget implications. To find out more about the Fert$mart program please call Gipps-Dariy 5624 3900 or email <donna@gippsdairy.com.au>.

The Focus Farm model has been replicated across regions to develop a network of farms that have a clear focus on whole farm systems, profitability and decision making on real farms under real conditions.

Through its Regional Development Programs (RDPs), Dairy Australia provides regional group extension networks to give farmers and participants increased benefits and value.

To find out what's available in any region contact the RDP. Details can be found inside the back cover of this and every edition of the *Australian Dairyfarmer.*

Dairy Australia
Your Levy at Work

What's happening in your region?

Contact your Regional Development Program

Dairy NSW
Ph: 02 9351 1737
dairynsw.com.au

Murray Dairy
Ph: 03 5833 5312
murraydairy.com.au

DairySA
Ph: 08 8766 0127
dairysa.com.au

Subtropical Dairy
Ph: 0431 197 479
dairyinfo.biz

DairyTas
Ph: 03 6432 2233
dairytas.com.au

Western Dairy
Ph: 0418 931 938
westerndairy.com.au

GippsDairy
Ph: 03 5624 3900
gippsdairy.com.au

WestVic Dairy
Ph: 03 55571000
westvicdairy.com.au

To find out more about Dairy Australia visit **dairyaustralia.com.au**

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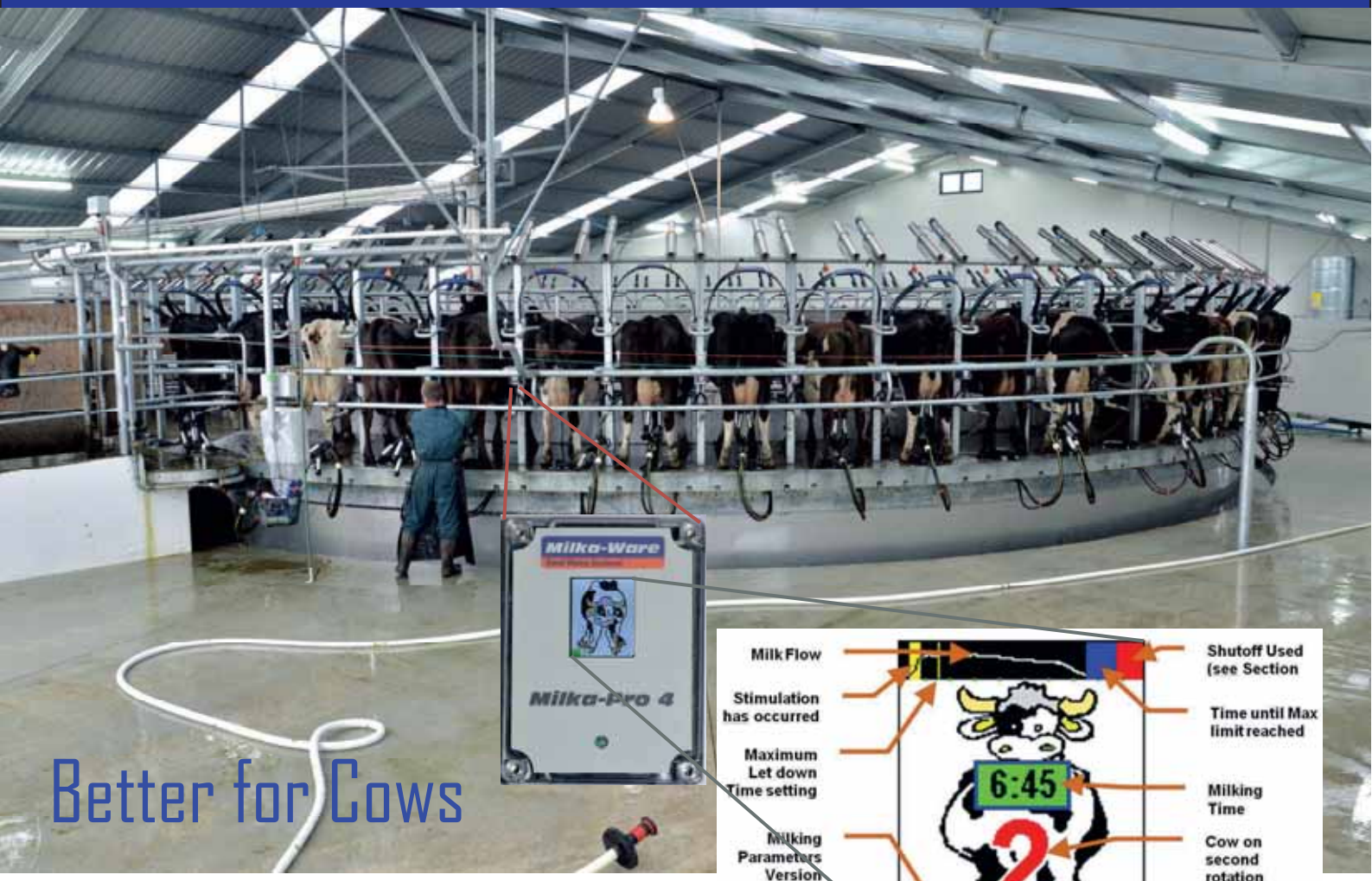
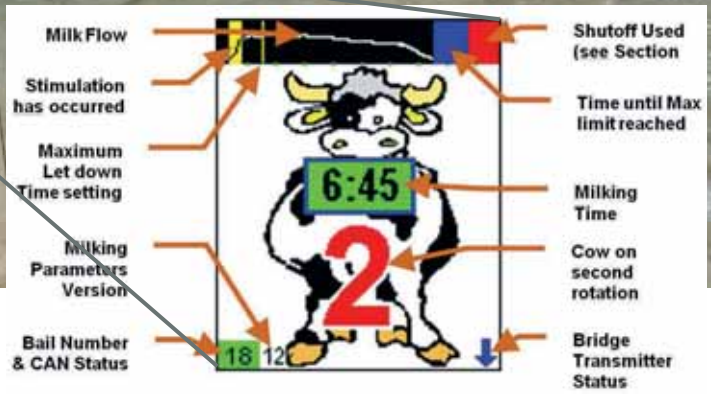


Better for Cows



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