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The Australian Dairyfarmer

Vol 28, No. 6 November-December 2013

OUR COVER

Irish farmer George Bingham has grown his farm using the latest technology and feeding practices. See story page 21. Picture by Penelope Arthur

NEWS

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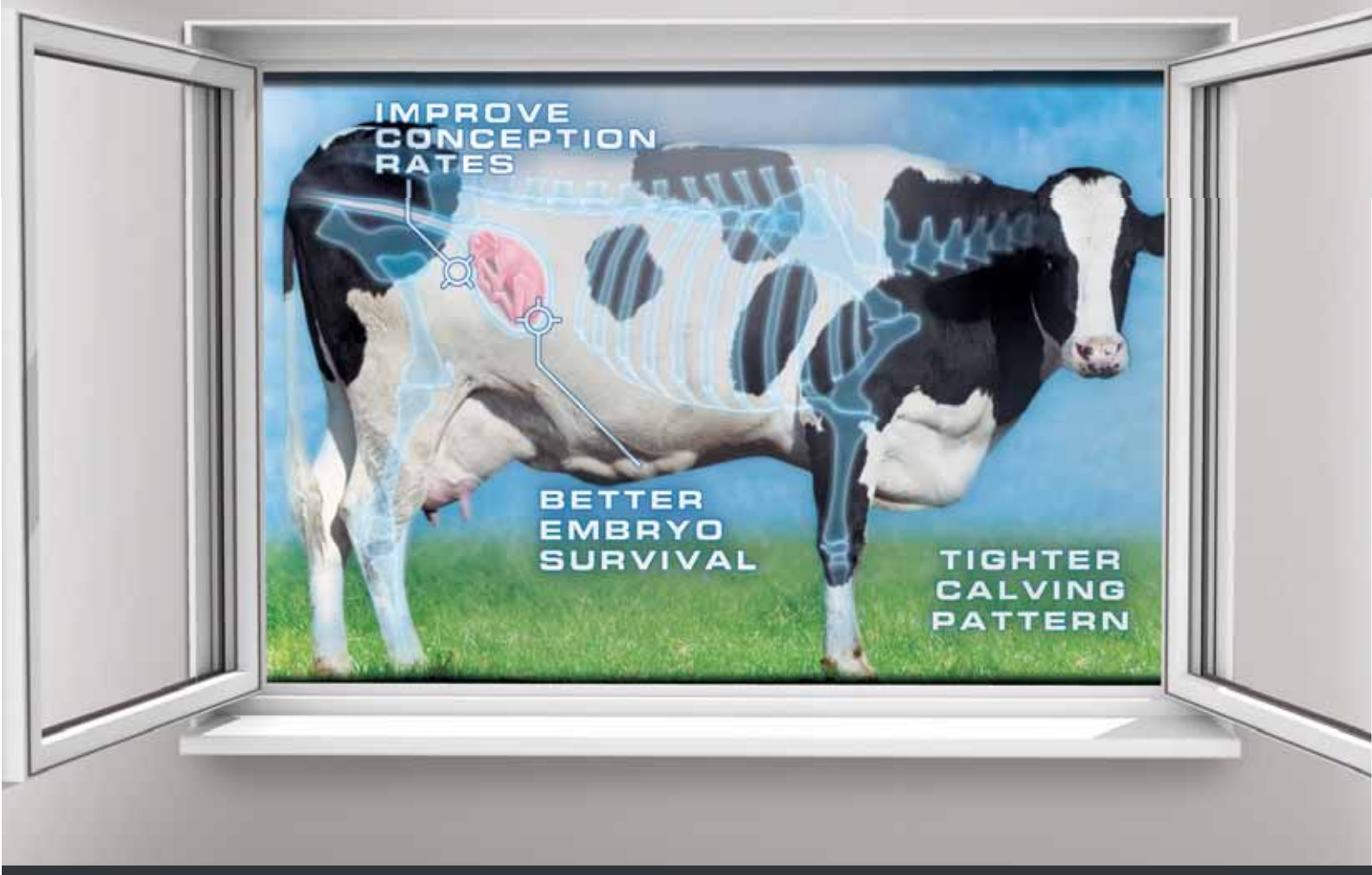

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Realising dairy potential

THE spirited bidding war for the ownership of one of Australia's major dairy processors Warrnambool Cheese and Butter shows the promise many see in the Australian dairy industry.

The interest from a large international player in Canadian processor Saputo shows that this goes beyond our shores. Saputo said Australia's proximity to growing Asian markets made WCB an attractive proposition.

I was told that at a recent conference in Asia, one of the speakers from a European capital firm, said the case for investment in the Australian dairy industry was compelling.

A recent Rabobank report again highlighted the opportunities available in China. China is importing a fifth of its dairy requirements and needs to rely on more external supplies for at least the next two years.

It's a story that we've been hearing for a number of years. But it has not translated into widespread profitability — nor confidence — at the farmgate level. In the past decade Australian milk production has stagnated.

We've slipped from being the third biggest player in world dairy export trade to the fourth biggest.

Part of this has been driven by climatic uncertainty. Drought and/or floods have had an impact in most dairying areas.

Part of it has been driven by market uncertainty with volatile pricing created by world markets leading to a less certain picture for farmers who have been less willing to bank on the future.

But these circumstances are not unique to Australia. New Zealand farmers have also faced some difficult seasons and are just as exposed to the world market fluctuations.

The challenge for the Australian industry is to unlock profitability at the farmgate. The New Zealand industry has been successful in developing a culture around being business focused.

It also means that our processing sector needs to be focused on the long-term game, as well as short-term returns. It needs to recognise that growing milk supply needs farmers to be looking two or three years ahead at a minimum. Farmers need to make decisions about retaining heifers now if they plan to grow the herd in two years' time.

But it is difficult for a farmer to make that decision if they are taking a gamble on future prices.

The rhetoric is there, but farmers need to see the money.

The other challenge is for the Australian Government to step up its efforts to get free trade agreements with key markets.

A recently released Dairy Australia report highlighted just how costly trade barriers are to the industry. It revealed that Australian dairy exporters pay more than $200 million each year in direct tariff charges. And that's money coming straight out of farmer's pockets.

If the industry can unlock profitability for a bigger group of farmers, growth will follow. And if we can get growth, we will have a more assured place in the world market, which will create more wealth for everyone to share.

Winners

A big thank you to all our readers who completed our reader survey, which was included with the last issue. We are now busy collating the results to bring you more of what you want to see in the magazine.

Congratulations also to the winners of the prize packs. The winners of our prize packs of a $100 semen voucher from Genetics Australia, a pair of Skellerup socks from Daviesway, an *Australian Dairyfarmer* baseball cap, an *Australian Dairyfarmer* beanie and an *Australian Dairyfarmer* barbecue apron were: Wes Hurrell, Yankalilla, South Australia; BA Smith, North Codrington, New South Wales; Darren Haywood, Burnie, Tasmania; Phillip Harris, Larpent, Victoria; H Miles, Mitiamo, Vic; and Travis Risstrom, Alberton, Vic.

The winners of our bonus Legendairy packs for those who completed the survey online were: Mark Saddington, Maffra, Vic; David Poustie, Boorcan, Vic; Mathew Walsh, Woolomin, NSW; David Urry, Nurioopta, SA; Donald Peters, Arawata, Vic; and Scott Arnold, Smithton, Tas.

Associate editor

Carlene Dowie

Follow me on Twitter @DowieDairyEd

The Australian Dairyfarmer

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ADF calls for prompt action on priorities

THE election of the new Federal Government is showing positive signs already for dairy, with the Coalition signalling its clear intention to return agriculture to the forefront of Australia's economy.

Australian Dairy Farmers (ADF) has welcomed the new government and now calls on it to fulfil its key election commitments.

ADF enjoyed a constructive relationship with the Coalition in Opposition and looked forward to continuing to work constructively with it in government, ADF president Noel Campbell said.

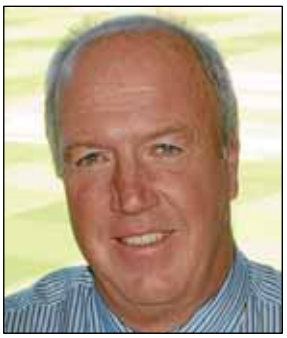
"The Coalition's agriculture plan, while not completely aligning with all of ADF's policy priorities, signals the new Government's intention to give agriculture the focus it deserves," Mr Campbell said.

"The government has moved to adopt several of ADF's key policy priorities and we look forward to working with it to achieve our goals."

Mr Campbell said the government had pledged to "fast-track" free trade agreements (FTAs) with China, Japan and South Korea and lift the blanket ban on investor-state dispute-settlement (ISDS) mechanisms.

Trade is vital to the long-term growth of the dairy industry, and this is a policy priority for ADF. The dairy industry is a significant export industry, with exports valued at almost $3 billion in 2011-12.

"The industry needs FTAs with key market partners to remain competitive in the global marketplace," Mr Campbell said. "We lag behind New Zealand, the European Union and the United States in dairy exports, representing just 7% of global dairy trade. This is well behind our biggest competitor, NZ, which holds a 37% share.



Noel Campbell: welcomed government's promise to invest $100 million in agricultural innovation.

"The government's promise to invest $100 million in agricultural innovation and RD&E will also help the dairy industry grow and compete internationally. ADF welcomes this proposed investment by the Government."

He said ADF looked forward to the prompt commencement of the Government's promised "root and branch review" of Australia's competition laws and would continue to lobby for the introduction of a mandatory code of conduct to balance the excessive market power of the major retailers and for the appointment of a Supermarket Ombudsman to provide oversight to the sector.

"While the proposed review of the Competition and Consumer Act is a step in the right direction, it falls short of the mark," Mr Campbell said.

"Farming families are currently at the whim of the excessive market power of the major supermarkets. The former Government was more forthright in its commitment to address this power imbalance and we hope that the new Coalition government will also recognise the effect this power imbalance has on our industry."

ADF has sought meetings with key Ministers, including the Minister for Agriculture and the Minister for Trade and Investment, to press home the urgency of the industry's issues.

"We look forward to building on our strong relationships with the new government and to working with it to help achieve a more profitable and sustainable dairy industry," Mr Campbell said.

What does the new government mean for the dairy industry?

✔ Australian Dairy Farmers (ADF) has consistently called for the finalisation of free trade agreements (FTAs) with key trading partners including China, Japan and South Korea, and also for the removal of the blanket ban on investor-state dispute-settlement (ISDS) mechanisms, which has hindered progress in some negotiations. The new government's stated ambition to finalise these FTAs within their first term highlights its commitment to trade liberalisation, and its pledge to consider the inclusion of ISDS mechanisms on a country-by-country basis is welcomed.

✔ ADF called for a renewed commitment to the Roads to Recovery and Black Spot Funding programs. These programs assist local government in maintaining and upgrading their local road networks — essential for the efficient passage of milk tankers to the farmgate. ADF is pleased the new government has recommitted this vital funding.

✔ ADF advocated strongly for a boost in biosecurity funding, particularly for emergency disease response preparedness. The government's $20 million pledge for a Biosecurity Flying Squad and the creation of a first-response biosecurity containment fund will help uphold Australia's reputation as a safe and reliable source of dairy products.

✔ ADF called for a boost to research, development and extension funding, to which the government has pledged a $100 million increase across four years. This will encourage innovation and support productivity and adaptability to ensure profitable farms.

ADIC trade report launched

A NEW report focusing on trade and the dairy industry was launched at the Australian Dairy Industry Council (ADIC) Business Breakfast in August.

Commissioned by ADIC and prepared by Dairy Australia (DA), *Trade and the Australian Dairy Industry* highlights the importance of international trade as well as some of the key opportunities and challenges faced by the dairy industry.

The report reveals that although the industry is well positioned to expand into international markets, work remains to be done in overcoming a number of obstacles to free trade, the most significant of which is Australia's lack of free trade agreements (FTAs) with key trading partners such as China, Japan and South Korea.

New Zealand enjoys more than one third of the global share of dairy trade. Australia is well behind with just a 7% share of global dairy trade.

The report was launched by ADIC chairman Noel Campbell and presented by DA group manager of trade and industry strategy Charlie McElhone. Grant Crothers of Burra Foods, John Williams of Warrnambool Cheese and Butter and ADF chief executive officer Natalie Collard joined Mr Campbell and Mr McElhone for a panel discussion on trade opportunities for the dairy industry.

"Dairy exports to our top 10 markets are worth more than $2 billion to the Australian economy," Mr Campbell said. "However, in recent years our slice of the pie has been shrinking.

"As key trade rivals like NZ and the United Sates take a lead on free trade and consequently increase their export volume, so we have lagged behind."

Mr Campbell said the report showed there was a positive perception of Australian dairy as being of high quality and safe, but a lack of FTAs was hindering the sector's chances of competing fairly in international markets.

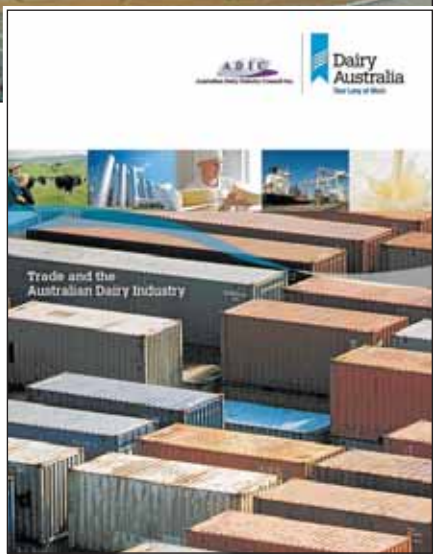
Dairy exports to our top 10 markets are worth more than $2 billion to the Australian economy.

"Demand for dairy is growing in China, South-East Asia and the Middle East as the local milk supply cannot keep pace with consumer demand," he said.

"These burgeoning markets are being targeted by dairy producers from across the world with the US, NZ and the European Union rapidly moving into traditional Australian markets.

"With this in mind, the Australian dairy industry is operating with one hand tied behind its back, meaning our farmers are unable to capitalise on the many available export opportunities.

"This report further supports our case that if Australia is to be able to fairly compete on the world stage, then we must sign-up to FTAs with our key trading partners as a matter of urgency."



The newly released report highlighting the importance of free trade to the Australian dairy industry.

An electronic copy of the trade report can be accessed on the ADF website <http://www.australiandairyfarmers.com.au/media-corner/australian-dairy-industry-well-placed-to-seize-international-opportunities>.

• **See Report puts case for why free trade is vital, page 11.**

Tas win in Farmer of Year

The Frampton family from Gawler, Tasmania, was named Australian Dairy Farmer of the Year at an awards ceremony in September. The awards, jointly hosted by the Kondinin Group and ABC Rural, recognise farmers in several different categories.

The awards are designed to promote a positive image of Australian farmers and farming families, inspire and encourage career choices and investment interest in Australian agriculture.

The Framptons won the award ahead of other finalists Greg Dennis, from Tamrookum, Queensland, and Kym and Kate Bartlett, from Woods Point, South Australia.

The Frampton dairy farm is located in a cropping area. But this didn't stop its owners showing they have what it takes to succeed.

Sixth-generation farmer Rob Frampton manages the family farm, working with his parents Lesley and Norm.

The farm has always been a dairy farm, but in the early 1990s, when Rob returned from completing his studies at Glenormiston College in Victoria, he put forward the idea to stop growing potatoes, peas and various other crops and shift the focus to cows.

"We had a small dairy and needed to build a dairy to suit," Rob said. "If you're doing cropping, you're really doing two things. If you have to get up and milk, you may as well milk more and then you don't have to worry about the cropping."

When Rob returned to the family farm they were milking 120 cows. Through gradual expansion, last year the farm ran 450 cows and milked them through a 40-unit rotary dairy, which was built in 1998.

Rob Frampton on his family's dairy farm at Gawler, north-west Tasmania.

The property has a milking area of about 155 hectares and 60ha of irrigated area. The farm supplies its milk to Cadbury.

"For Norm and I, it has been really nice for Rob to come back to the farm and take it on and expand it like we have," Lesley said. ''A lot of generational farmers go along with what has been done in the past, but we have been prepared to listen to Rob.

"Change is not always easy for generational farmers and I think, in our case, it has worked quite well because it's been done gradually."

Dairy vet wins rural award

A young dairy vet who is researching how to improve parasite control in young stock on dairy farms has been named this year's Victorian Agricultural Shows (VAS) 2013 Rural Ambassador Award winner. Stephanie Bullen of Maffra and District Agricultural, Pastoral and Horticultural Society was announced the winner at an event in September.

Presented by VAS, this year's awards showcased outstanding candidates dedicated to the local community.

Ms Bullen is passionate about the Australian dairy industry. She has a double degree in veterinary biology and veterinary science and is currently conducting a research project to improve parasite control in young stock on local dairy farms. She and her partner live on a 340-cow Holstein dairy farm.

Sponsored by the Royal Agricultural Society of Victoria (RASV), the 2013 Rural Ambassador Awards aim to highlight and reward the talent, creativity and ingenuity of young rural Victorians who are making a significant contribution to their local communities.

The Rural Ambassador Awards provide the winner with a $3000 financial contribution to their career development.

This year's Victorian Rural Ambassador Award winner Stephanie Bullen.

Dairy helps Aussies in need

MOST Australians express surprise and disbelief when told that more than two million people — half of whom are children — in urban and rural communities across the country experience hunger at some time each year.

Victorian State Minister for Agriculture and Food Security Peter Walsh hosted a function at Foodbank's Victorian Distribution Centre in September to acknowledge support of six of Australia's leading dairy companies that are aware of this shocking statistic and are determined to do something about it.

For the past two years these companies, in collaboration with the Federal Government, packaging companies and other corporate supporters, have donated more than 3.5 million litres of fresh and UHT milk to Foodbank.

This milk has been distributed to 2600 charities and community groups to help feed struggling Australians.

"The dairy industry makes a significant contribution to Victoria's economy, and competition between dairy companies is very strong," Mr Walsh said.

"It is terrific to see six companies put business interests aside and work together on a project like Foodbank to help ensure our most vulnerable don't miss out on the nutrition benefits that dairy products provide."

Robert Poole (Murray Goulburn), Minister for Agriculture and Food Security, Peter Walsh, John Webster (Foodbank), Peter Jones (Fonterra), Anita Russell (Flight Centre Foundation) and Rick Cross (Bega Cheese) with some of the dairy products donated to the Foodbank program.

Foodbank Australia chief executive, John Webster, said: "Foodbank collects and distributes 25,000 tonnes of food, enough for 32 million meals each year.

"Milk and dairy products are highly valued because they are healthy, nutrient dense and versatile foods."

According to Mr Webster, many assumed hunger was an urban issue, but 35% of the food donated or rescued by Foodbank was distributed to rural and regional locations.

Judy Gleeson co-ordinates the food relief program in the small rural community of Neerim South, 110 kilometres east of Melbourne.

"Our town of 1500 people is a vibrant and bustling dairy community and yet many families are struggling," she said. "Our small team packs and distributes between 70 and 100 food parcels per week."

Dairy companies collaborating in this program include Bega Cheese, Fonterra Australia, Lion, Parmalat Australia, Murray Goulburn and Warrnambool Cheese & Butter. Other stakeholders include the Australian Government, Brickwood Holdings, the Flight Centre Foundation, the Gardiner Foundation, Labelmakers, Tetra Pak and Visy.

Dairyfarmers win Green Agriculture Innovation Awards

TWO dairyfarmers have won 2013 Green Agriculture Innovation Awards (GAIA) recognising their achievements in their own farm environments and their mentoring of following generations of farmers.

The 2013 GAIA award winners are New South Wales South Coast farmer and Dairy Youth Australia founder Lynne Strong and passionate Gippsland, Victoria, dairy networker Tanya Allan Privitera.

Mrs Strong said it was an absolute honour to win the award for her focus on soil health and her work with young farmers. She said she would continue to lobby for Australian government support for more research and information sharing about the importance of soil health in milk production.

This year was the first time awards had been won by dairyfarmers. Mrs Strong said this was an indication of the value of the soil care and environmental protection being carried out by many Australian dairyfarmers. More information on her work with young farmers is at website <art4agriculture.com.au>.

Victorian dairy networker and 2013 Green Agriculture Innovation Awards winner Tanya Allan Privitera and her husband pose with a special Jersey cow on their wedding day.

Award winner Lynne Strong.

Mrs Allan Privitera is a fourth-generation dairyfarmer who in 2001 was a Victorian Rural Ambassador studying dairying in the United States. She is a passionate Jersey breeder who had a garlanded Jersey in her wedding photos. She works in many youth and women in dairying groups. She likes to use social media to improve links between farmers and between the dairy community and non-farmers.

Mrs Allan Privitera is also a passionate advocate of the benefits of small farms who says good farming starts with healthy soils.

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Report puts case for why free trade is vital

By CARLENE DOWIE

AUSTRALIAN dairy exporters pay more than $200 million each year in direct tariff charges, according to a new report. The report, *Trade and the Australian Dairy Industry*, commissioned by the Australian Dairy Industry Council (ADIC) and prepared by Dairy Australia, said the tariffs charges had a direct impact on revenue and profitability for Australian farmers.

It put the case for why free trade agreements were so important to the future viability of the Australian industry.

"Australian dairy farms currently produce around 9.5 billion litres of raw milk per year," it said. "About 40% is exported in a range of product formats.

"Export markets provide an alternative to the domestic market. It will be crucial that Australia has access to international markets to ensure it remains highly competitive.

"Regional examples, such as Queensland and Western Australia, illustrate that when a dairy region loses export manufacturing and capacity over time, pressure on farm and manufacturing margins and profitability can develop as the industry becomes overexposed to the domestic fresh milk market and supermarket or retail chains."

Australia's dairy manufacturers have backed the report's findings.

In the lead-up to the Federal election Australia's biggest dairy exporter, Murray Goulburn Co-operative (MG), said free trade agreements (FTAs) rather than foreign investment controls were needed if the agriculture sector was to capitalise on surging demand in Asia.

"The biggest thing the government can do for dairy, which is a high growth sector among most agribusinesses, is to learn from the New Zealand Government and get on to FTAs with China, Taiwan, Korea and Japan," MG managing director Gary Helou said.

Bega Cheese executive chairman Barry Irvin also put FTAs towards the top of his wishlist. "There's no doubt that Australian dairy can continue to grow but the observation I would make is that NZ has an entire government focused strongly on investing in farms and FTAs," he said. "We're a long way behind.

"While the Australian political parties talk about the importance of agriculture, what you have to see is genuine action. The government used to have Department of Agriculture field offices all across the countryside and you've seen it just constantly cut.

"Have a look at the amount of research, development and innovation put into making sure NZ is globally competitive."

Norco's chief executive Brett Kelly said he would love to see an FTA with China in place.

It has taken more than a year for the Lismore-based dairy co-operative to clear the administrative and logistical hurdles to allow it to send a trial shipment of product to China. And it will probably be another year before it starts sending commercial shipments.

Mr Kelly said achieving access to China's fast-growing middle class was worth the hassle as Norco looked to reduce its reliance on the big supermarket chains at home.

Opportunities

The DA report said global dairy demand was growing, driven by increased demand in developing dairy markets including China, South East Asia and the Middle East. This was an opportunity because Australia was already established in these markets.

Australia was seen as a supplier of high-quality, clean and safe dairy products, and had a positive international reputation.

The report said Australia had not experienced the types of animal welfare and contamination issues that had arisen around the world as farming and processing had intensified.

"We should emphasise the clean, natural environment in which we rear our animals, our pasture-based feeding systems and the rigorous quality and safety standards that are maintained by our farmers and processors and enforced by our government bodies to help ensure the supply of the safest dairy products to international markets," the report said.

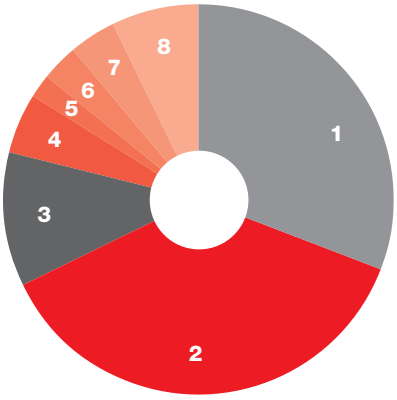
Australia also had an advantage over some of the other major players in the international market in the variety of processing companies, factory sizes and broad product range that could be produced. Some competitors — such as NZ — are more aligned to large-volume commodity business.

"These factors can allow our processors to supply more value-added dairy products that can better meet customer needs in terms of specifications, logistics, innovations and support," it said.

But it faced some major obstacles — not the least of which was its decreasing relevance in the export market.

"As Australian production and export volumes have stagnated in recent years, we have lost ground in our percentage share of global dairy trade, significance and relevance as a dairy supplier," the report said. "Many competitors are increasing both their production and export focus."

Figure 1: 2012 world trade share



1	European Union	31%
2	New Zealand	37%
3	United States	11%
4	Argentina	5%
5	Ukraine	2%
6	Uruguay	3%
7	Other	4%
8	Australia	8%

Australia had slipped from being the third-biggest dairy exporter 10 years ago with 15% of the trade to the fourth-biggest last year with 7% of the trade.

Some international customers are concerned about the Australian industry's capacity to maintain a consistent product supply due to drought, environmental factors, competing land use and a need for investment.

Free trade agreements

The report said Australia competed in the global dairy market with NZ, the European Union and the United States, as well as with smaller players such as Argentina, Ukraine and Uruguay.

Australia has embraced an open market approach but not all countries have been as progressive in eliminating tariffs and reducing trade barriers, subsidies and support mechanisms for dairy. "In attempting to capture the opportunity that international demand growth represents, the Australian dairy industry must continue to push for the liberalisation of the global dairy trading environment while reinforcing the compelling industry and product characteristics that define our industry."

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The Korteweg family on the banks of the Clutha river.

Award winners questioned over farming practice

Dear Editors,
I read the magazine avidly and have done for many years.

This one caught my attention though. Page 23 by Rob Tipa on the supreme winners of NZ Dairy Business of the Year.

Do I see right, is the feed area (pad) of the Korteweg family's herd right on the banks of the Clutha River? Inside the flood banks as a matter of fact?

If so I'd like to find out how they cope with runoff from rain and flood waters, when the river spills its banks. Does that then enter the river?

Surely there is some sort of regulation against that?

The NZ rivers were much clearer and cleaner than our Australian ones when we visited NZ. They are of course much shorter and faster flowing. Won't stay that way if I see right in the photos in the article.

We are part of a North Central Catchment Management Authority (NCCMA) plan to upgrade the health of the Loddon River here at Kerang. We have fenced off our 1.5 kilometre frontage to the river, planted more than 3000 trees and have allowed and encouraged natural revegetation by excluding grazing. It is a very rewarding project and we are very proud of the way that area now looks.

I'd love to know how the Kortewegs manage their project.

Keith den Houting
Kerang,Vic.

Editor's reply

The story was supplied by our sister publication in New Zealand, *The Dairyman*. Its Otago reporter Rob Tips, who took the photograph in question, responds: "The photograph is quite deceptive because of the lens used and the angle of the shot, which was taken to illustrate the property's name, The Crescent, on the banks of the Clutha River.

"The Kortewegs' cows were grazed during early spring on a dry river terrace several metres above the river and separated from it by an ungrazed berm of vegetation and willow trees.

"From the angle the photograph was taken, the riverbank, fence and ungrazed vegetation are not visible.

"One-third of their cows were grazed off-farm during the winter, and the remaining two-thirds were housed in Herd Homes inside the stop bank. The cows pictured were only turned out from the Herd Homes on to the river terrace in the second week of August, to clean up prior to going on to a calving pad."

Stephen Korteweg said their farm management fully complied with New Zealand dairy industry standards covering fencing and distance cows could be grazed from waterways.

He said the family had nothing to hide in terms of its environmental practices and had put their farm forward for inspection and judging by dairy industry experts on several occasions in recent years. The farm was entered in the Kiwi Farmer on the Year competition in 2001, won an Otago Ballance Farm Environment Awards in 2009, and was judged the supreme winner in the national Dairy Business of the Year award this year.

"But we don't claim to have all the answers," Mr Korteweg said. "We welcome new ideas and feedback on how we can improve our farming business."

He invited anyone interested in the management of the property to attend a field day on site on December 3.

SA farmers launch own milk brand

THE South Australian Dairyfarmers' Association (SADA) has launched its own brand of milk — SADA Fresh. The milk is being processed and packaged under a special licensing agreement by dairy foods company Parmalat at its Clarence Gardens facility and sold exclusively through Coles supermarkets across the state.

Forty cents of the proceeds from every two-litre container sold will go to a new fund to finance projects that will help secure the future viability of the South Australian dairy industry.

"Our dairyfarmers are often asked by people what they can do to support the industry, which has been going through some pretty tough times because of low prices, poor seasons and rising production costs," SADA president David Basham said.

"Now consumers can show their support in a tangible way by purchasing SADA Fresh. It will help to safeguard an industry that is vital to the state and make sure they have the choice in the future of buying quality, fresh local dairy produce."

While quite a few privately-owned, farm-based enterprises have begun marketing their own products in recent years, this is the first time in Australia that a dairy industry association has launched its own label.

"SADA believes this approach could prove to be a model for other agricultural industries looking for ways to fund research and development, and that it will certainly encourage innovation and value adding in South Australia's dairy sector, leading to new products and new markets, both domestic and export," Mr Basham said.

Coles chief operating officer John Durkan congratulated SADA on its initiative. "SADA approached us with the suggestion of creating a regional milk brand in South Australia and now — after a significant amount of work by SADA, Parmalat and our buying team to finalise the sourcing, licensing, processing and packaging — we are delighted to sell SADA Fresh milk in more than 50 stores across the state," Mr Durkan said.

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Dairy Farm Monitor reflects tight year

THE 2012-13 Dairy Farm Monitor Project report, now in its seventh year, is funded by levy funds through Dairy Australia (DA) and the Victorian Department of Environment and Primary Industries and is now available on the DA website. The report provides a detailed description of the physical and financial performance of dairy farms in Victoria plus valuable descriptions of longer-term trends in profitability.

There are 75 farms in the project this year across three regions of Victoria: northern Victoria, South West Victoria and Gippsland.

"The survey provides a really good measure of dairy financial performance and the results are reported at an individual farm level," DA program manager Helen Quinn said.

"It confirms the tight market and seasonal conditions in 2012-13, with a decline in average return on assets across Victoria from 5.0% in 2011-12 to 0.7% in 2012-13. The range was -11.5% to 10.2%.

"Northern Victoria fared the best of the three regions with a return on assets of 2.2% and an average loss of $2000.

"In Gippsland, farms that participated in the survey recorded an average return on assets of -0.2% and an average loss of more than $57,000.

"South West dairy farms recorded a return on assets of 0.2% and an average loss of $91,000.

"The 2013-14 year is looking more positive, with increased milk price and reductions in both concentrate price and purchased fodder requirements.

"With spring rainfall looking good, farms should have the opportunity to conserve more fodder. This, combined with an increase in milk price and a lower concentrate price, should result in a growth in profit for the 2013-14 year."

The full DFMP report and interactive versions of the appendix tables are available at <www.dairyaustralia.com.au/dairy farmmonitor>.

Legendairy hits the road

As part of the Legendairy campaign, a suite of three outdoor advertisements was placed in 63 sites across dairyfarming regions in October.

One of the three Legendairy outdoor advertisements, seen from the Pacific Highway near Grafton, NSW.

The ads deliver messages on the multi-skilled nature of dairyfarmers, the $13 billion that dairy contributes to the Australian economy and the 10 essential nutrients in milk that make it "nature's multivitamin".

Constitutional review welcomed

The independent review of Dairy Australia's (DA) constitution has now reached the final stage, with the DA board having received and reviewed the constitutional review panel report.

The report, prepared by the four-member review panel, includes consideration of 45 submissions from dairy-related groups and individual levy payers as well as a number of face-to-face meetings and forums.

"The board of DA welcomes the report from the constitutional review panel," DA chair Max Roberts said. "There were a range of comments and recommendations focused on diverse areas such as length of director tenure and board composition.

"The report identifies some issues that require further discussion with industry, including the levy poll. There will be an announcement regarding this process at the forthcoming DA annual general meeting (AGM)."

DA members will have the opportunity to vote on proposed changes to the constitution at the AGM. All changes will be explained in the notice of meeting. Any proposed amendments will need to be approved by a 75% majority vote and then by the Federal Minister for Agriculture.

"On behalf of the DA board, I'd like to acknowledge the professionalism of the constitutional review panel in the conduct of this extensive, independent review and to thank all participants in the process who have provided valuable input," Mr Roberts said.

The full report, submissions and recommendations are now publicly available via the constitutional review website <www.DAconstitutionalreview.com.au>.

"Any constitutional change involves complexity," Mr Roberts said. "It is important that the changes are read in context by viewing the material on the website."

Fert$mart: best fertiliser info all in one place

Dairyfarmers and their advisers now ▶

have access to top-quality information about soils and fertilisers specific to their region on the recently launched Fert$mart website.

"Fert$mart brings together all the relevant information and guidelines with useful tips about planning and fertiliser decisions such as making the most of effluent, soil testing, nutrients and plant needs and much more," national resource program manager at Dairy Australia (DA) Cathy Phelps said.

Based on the best available science and research, Fert$mart provides straightforward advice and easy-to-follow planning steps to guide farmers and advisers in their decision-making.

"The goal of the website is to help farmers and advisers to make profitable choices by focusing on nutrient management, planning and analysis," she said. "Industry nutrient management programs demonstrate that when a strategic approach to nutrient management is adopted, significant savings in fertiliser costs can be made."

Case studies describing the Fert$mart approach in action are presented on the website, and Fert$mart planning explains how and when to use the industry's toolbox, including in feed budgeting, soil and pasture assessment, soil and plant tissue testing, nutrient budgeting, record-keeping and more.

A key feature of the site is the updated *Dairy Soils & Fertiliser* manual, which contains the latest information on all aspects of soil management, including application of nitrogen, plant tissue testing and recommended nutrient levels for various soil types using lime.

"Fert$mart project manager Rick Kowitz has done a terrific job over the past year working with farmers and advisers across the country to build the website," Ms Phelps said.

The project was funded by DA and the Australian Government through the Caring for our Country program.

Visit website <www.fertsmart.dairyfortomorrow.com.au>.

Get the low-down on cockchafers

Levy funding has supported development of a new resource to help dairyfarmers tackle important pasture pests such as redheaded and blackheaded cockchafers and African black beetle.

A pocket-sized booklet developed by GippsDairy in collaboration with universities, the Department of Environment and Primary Industries (DEPI) and dairyfarmers reveals the key differences that can help farmers correctly identify and appropriately treat the insects.

The redheaded and blackheaded cockchafers as well as the African black beetle cause damage to Australian dairy pastures every year but the way to tackle these different species is different.

DEPI lead researcher for the project Dr Kevin Powell said correctly identifying the pests would help farmers by saving money and time and reduce the need for spraying.

"Blackheaded cockchafers, for instance, can be dealt with by spraying, but that is ineffective against redheaded cockchafer," Dr Powell said.

For a copy of the booklet contact GippsDairy, phone (03) 5624 3900.

Dairy Australia AGM

Dairy Australia's (DA) 2013 annual general meeting (AGM) will be held on Friday, November 29, at Flemington Racecourse, Flemington, Melbourne, starting at 10.30am. DA members are invited to attend the AGM, which will include the election of three directors to the DA board and consideration of changes to the company's constitution following an extensive review this year.

DA chair Max Roberts will retire at the conclusion of the AGM after 10 years with the company. The board will appoint a new chair following the meeting.

Members should have received a formal invitation to the AGM (including the notice of meeting and voting proxy form) in the mail.

For further information contact the DA memberline on 1800 004 377.

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NO. 163

Measure it = manage it

By CAROL MILLAR

HEAT detection is one of the most important jobs on any dairy farm. If a cow is not observed on heat, the chances are it will not be inseminated at the right time for fertilisation to occur.

The best time to artificially inseminate (AI) cows is 4-12 hours after the onset of standing heat — that is, that the cow stands to allow other cows to mount it. The observation of standing heat is one of the best methods of ensuring that cows are inseminated at the optimal time during their cycle.

Many dairy farms these days are employing extra staff at busy times; sometimes these workers will not necessarily have any knowledge about heat detection and why it is important.

Check out this training video

The National Herd Improvement Association of Australia (NHIA) has collaborated with Dairy Australia (DA) and Zoetis to make a video about heat-detection strategies for Australian farmers.

This short instructional video is freely available on YouTube for anyone to see. It is just nine minutes in length but gives a comprehensive introduction to heat detection, why it is important and the best way to do this on Australian dairy farms.

This short film is an excellent method of training new employees about heat detection.

It is simple: all that is necessary is to sit them down in front of a computer connected to the internet, access the YouTube website and type "heat detection Australia" into the search box.

Alternatively, access the video through the DA or NHIA website.

It will be the most valuable nine minutes any farmer will spend this joining season.

A video about heat detection strategies for Australian farmers is available on YouTube.

Measuring your progress

There is an old saying "You can't manage what you don't measure". This is especially true for fertility in dairy herds.

Farmers should be measuring the effectiveness of their breeding programs so it becomes clear where the problems might lie.

Our Kiwi friends often do a much better job of measuring submission rates than we do in Australia — and submission rates are one of the primary drivers of success (or failure) in any breeding program.

Measuring submission rates will tell two things:

- whether there is an issue with non-cycling cows in the herd; and
- how good the heat detection program is in reality.

Low submission rates sound the first alarm bell if herd fertility is below par. The best farmers will achieve more than 90% submission rates in the first three weeks of mating. If there is more than one inseminator on the farm, it is important to compare how well each inseminator is travelling in their technique. The best way to do this is through the non return rate (NRR). NRR measures how many cows each inseminator inseminated and how many came back into heat three weeks later.

The point about comparing NRR is to give each inseminator a measure of how they are tracking so that if they need to do a refresher AI course or get some technical assistance, this can be done.

Finally, farmers should always do early pregnancy tests so that they can work out accurate conception rates.

Early pregnancy tests are tests done before cows are 16 weeks pregnant. Farmers have a range of options these days, from rectal palpation to ultrasound to testing milk samples. A number of herd improvement service providers have recently implemented new technologies for pregnancy testing via the milk samples provided for herd test. This is an accurate and trouble-free way of doing this important job.

Remember, you can't manage it if you don't measure it.

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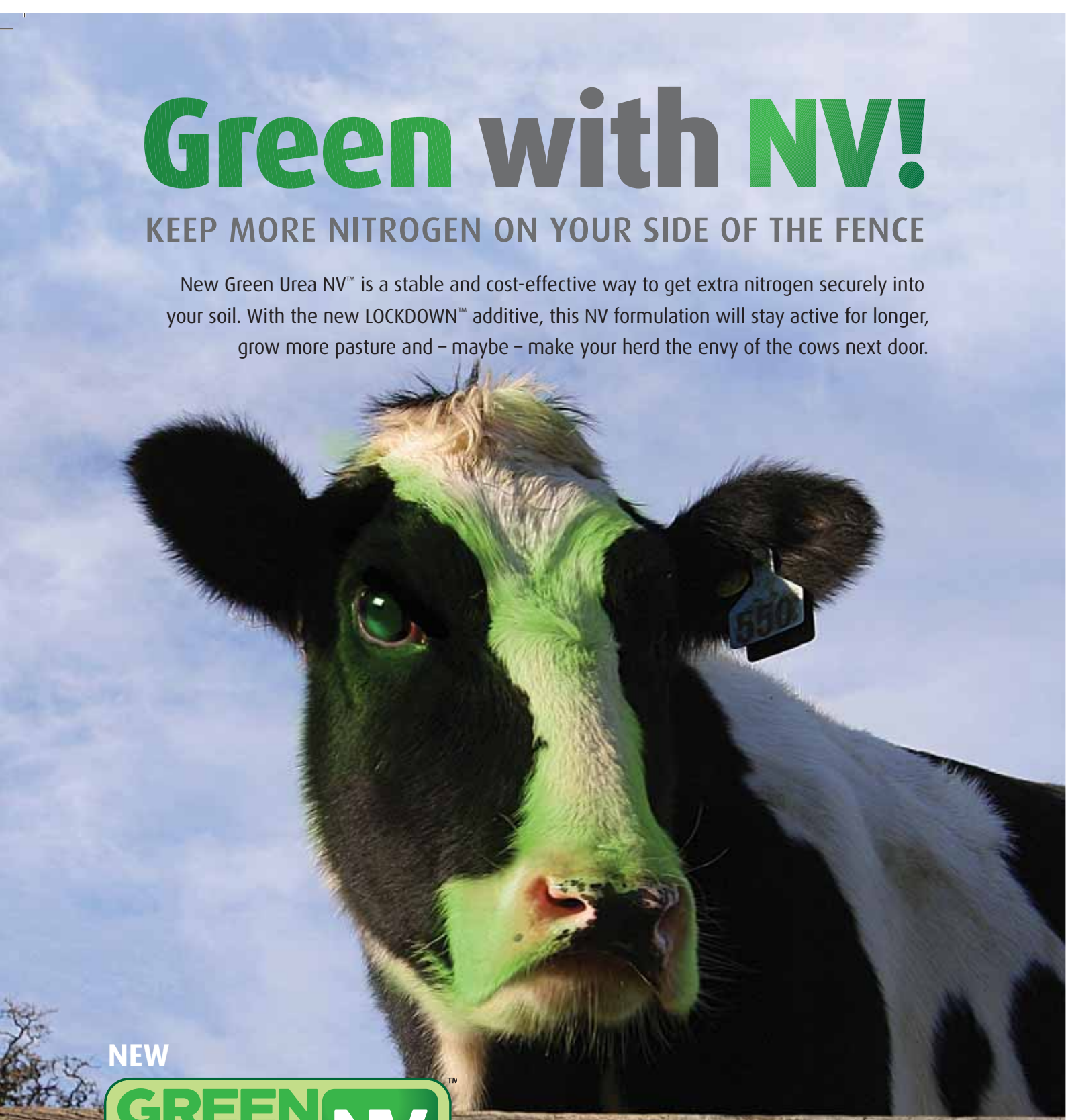

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Irish farming in spotlight

FAIRFAX Agricultural Media journalist Penelope Arthur was invited to the Alltech Global 500 conference in Ireland in October.

The conference provided the opportunity for her to travel around the east coast of Ireland visiting dairy farms and cultural sights.

Her tour group included 16 dairyfarmers from the United States, Canada, New Zealand, Malaysia and Germany. They visited three dairies: two in County Louth in the Republic of Ireland and one just outside Belfast in Northern Ireland.

Ms Arthur said clearly the biggest issue facing dairies in the Republic of Ireland was the European Union quota system, which had severely restricted dairy expansion in the south in recent years.

Under the current rules, farmers who exceed their quota face severe financial penalties if Ireland as a nation also breaches its quota. Once the country exceeds quota, individual farmers who are over quota must pay 27 eurocents per litre for every litre they are over. If an individual farmer exceeds quota but Ireland remains within quota there is no penalty for the farmer.

The first farmer visited on the tour, Michael McDonnell, Cannontown Farm, Termonfecklin, County Louth, said the quota system had cost him more than €1 million.

"It's been devastating at times so we are looking forward to 2015 when the quota system will be gone and we can start investing in our dairy again," he said.

Pat Callan and his son Aaron milk 140 Montbeliardes at Phillipstown in County Louth but are hoping to increase to 200 cows after the abolition of the quota. "We would love to have had more cows over the past 10 years but we couldn't go down that road because of the quota," he said.

There are no such quota issues in Northern Ireland, where farmers have been able to take advantage of low dairy production across other parts of the United Kingdom.

George Bingham milks 550 Holstein cows outside Belfast and said farmers in Northern Ireland had been able to continue expanding because of free access to quota not used elsewhere in the UK.

George Bingham on his farm outside Belfast.

Skill, not luck, key to Irish success

By PENELOPE ARTHUR*

UNLIKE their counterparts in the Republic of Ireland, dairyfarmers in Northern Ireland have enjoyed unrestricted access to the European Union (EU) market for their milk in recent years.

With low production in other areas of the United Kingdom (UK) such as England and Scotland, dairyfarmers in Northern Ireland like George Bingham have had the lion's share of the UK EU quota.

"The UK is massively under quota so we can produce as much milk as we like," Mr Bingham said.

"That has really driven the expansion of our herd in recent years. When I was a boy we used to milk 70 to 100 cows. Now we have a herd of 550 cows."

Working in partnership with his father, Robin, Mr Bingham operates Taylormaid Holsteins just outside the city of Belfast.

In addition to their herd of 500 pedigree cows, the Binghams run 550 head of young stock on the farm, including replacement heifers and young calves.

The cows calve all year round with heifers averaging their first calf at 27-29 months.

The herd is currently averaging 8500 litres with 3.2% average protein and 3.9% average butterfat.

The land is a heavy soil type and is almost entirely dedicated to grass growing, although the Binghams have dedicated 10 hectares to forage maize and another 10ha to cereal production.

The cows are divided into high-yielding, medium-yielding and low-yielding groups.

Another example of the innovation on the Binghams' farm. This automated machine helps minimise manure on the floorboards in the shed. Slurry tanks are located under the boards and the manure is spread across the grass paddocks twice a year.

Ventilation is paramount. Here young stock feed with a view.

The low-yielding cows are primarily fed freshly cut grass and a concentrate blend while the high-yielders are fed a combination of freshly cut grass, cereal whole crops, grass silage and concentrate blend. ▶

The Binghams use sawdust and lime for bedding in the free stalls. George Bingham demonstrates the application of the bedding in this photo.

The cows receive a footbath in a solution of formaldehyde and copper sulphate twice a week to help combat foot soreness.

Bull calves are kept until they reach eight weeks of age, at which point they are sold.

"There is no real money in the bull calves at this stage but we don't consider shooting calves at birth an option so we raise them in small groups until they about eight weeks old," he said.

The Bingham family have invested heavily in their housing and dairy infrastructure in recent years, installing a new rotary dairy four years ago.

Three people operating the 35-unit dairy can milk 300 cows an hour but, due to labour restrictions, milking is generally done by two employees who milk about 250 cows an hour.

Land is at a premium in the area and the Binghams have traditionally operated under a zero-grazing system from early May to late September (when the cows are housed in the shed).

"We are starting to review that now because it appears to be more economical to cut fresh grass every day and feed them in the stalls, even when its warmer," George Bingham said.

"The cows are currently receiving 80-100 kilograms of fresh grass a day. That means we are cutting about seven acres (2.8ha) a day.

The Binghams' farm has plenty of innovation, including this automated device that pushes hay and silage back to the feeding cows along the length of the shed. For ease of cleaning, the feed is not fed in bunks, and this device makes keeping the shed tidy even easier.

"Ideally we would like to buy more land as much of our land is rented and it's stressful not knowing if we are going to have access to that land the following year.

"Purchasing more land would allow us to expand the dairy even further." D

**Penelope Arthur was in Ireland as a guest of Alltech for the Alltech Global 500 beef and dairy conference.*

Irish breeding values and fertility

A MOVE by the Irish to place greater emphasis on fertility in their overall breeding value — the Economic Breeding Index — has generated a lot of interest around the world.

At the time of going to press, Donagh Berry, from the Irish research institute Teagasc, was scheduled to visit Australia at the end of October to talk with Australian advisers and farmers about the Irish experience.

Mr Berry told a conference in Ireland earlier this year that Ireland would have the most fertile Holstein Friesians in the world if current trends continued. "The huge focus on fertility over the past decade means that the herd will only be getting back to the same fertility levels that it had in 1980," he said. "But because we have put so much work into this, I believe that we will have the most fertile Holstein Friesian cows in the world by 2020."

The next issue of *The Australian Dairyfarmer* will contain a full report on the Australian Breeding Value 'Discovery Day', including details on the Irish experience.

It will also look at how indexes from around the world can be compared and report on the review of Australia's national breeding objective (Australian Profit Ranking Australian Breeding Value) and how farmers can get involved.

Irish dairy rebuilds after 'mad cow' disaster

By PENELOPE ARTHUR*

KEY POINTS

RECOVERY FROM DISEASE DISASTER

- ✔ Herd destroyed by BSE outbreak
- ✔ Recovery now complete
- ✔ Looking to end of quotas to expand

WHEN a Bovine Spongiform Encephalitis (BSE or Mad Cow Disease) outbreak forced Pat Callan to destock his entire Holstein herd in 2004, the Irish dairyfarmer wasn't sure he'd ever be able to rebuild.

The Callan family left home for the few days it took Irish authorities to take their 400-head herd away.

"We couldn't face seeing them go and then waking up in the morning and having no milking to do," Mr Callan said. "We'd been milking some of those cows for years.

"We had to stay out of dairying for six months. It was a devastating time but we have rebuilt and we are very happy with our new herd."

Situated on the east coast of Ireland at Phillipstown in County Louth, the Callan family have restocked with a pedigree Montbeliarde herd.

They initially bought 105 Montbelairde calves from France and are now milking 140 cows.

Like most dairy farms in Ireland, the Callans operate under a grass-based system with the cows largely grazing outside during the warmer months and housed in free stalls in enclosed barns during winter.

Although they own only 36 hectares, the Callans farm 162ha, utilising 12ha for maize production, 50ha for growing cereal crops and 90ha for grass.

Pat Callan and his son Aaron milk 140 Montbelliarde cows at Phillipstown in County Louth but are hoping to increase production to 200 cows after the abolition of the current European Union quota system.

Most of the cows were in late lactation when *The Australian Dairyfarmer* visited recently and were receiving most of their dietary requirements from grazing the native perennial pastures.

Mr Callan said the family used an intensive rotational grazing system across 32 1.5ha paddocks.

"The milking cows spend 24 hours in each paddock before they are moved to the next," he said.

"We are just starting to come towards the end of the grass season and are starting to supplement the cows."

In winter the cows are fed grass silage, straw, alkaline treated grain, molasses, soya bean meal and a range of vitamins and minerals.

The cows are milked twice a day in a 14-a-side dairy that features a Dairy Master air-operated bale lift. Milking generally takes two staff about 90 minutes.

The cows yield an average of 7500 litres with an average protein of 3.5% and average butterfat of 4%. The milk is supplied to Glanbia.

Mr Callan's son Aaron often works alongside his father in the dairy. Aaron said the family were currently receiving 39 euro cents per litre for their milk.

The cows are milked twice a day in a 14-a-side dairy that features a Dairy Master air-operated bale lift.

"It is as good a price as it's ever been," he said. "Back three years ago it was down to 21 eurocents/litre, which was a disaster."

With prices looking favourable, the Callan family are hoping to increase production when the European Union quota system is abolished in 2015.

Under the current rules, farmers who exceed their quota face severe financial penalties if Ireland, as an EU nation, also breaches its quota.

Once the country exceeds its quota, individual farmers who are over quota must pay 27 eurocents/litre for every litre they are over. If a farmer exceeds quota but Ireland remains within quota there is no penalty for the farmer.

Mr Callan said the family would like to increase production to 200 cows after the abolition of the quota.

"We would love to have had more cows over the past 10 years but we couldn't go down that road because of the quota," Mr Callan said. "It has really restricted the expansion of a lot of dairies in Ireland.

"With the quota going, we will see more lads going into dairying, but I would say the price won't be as good."

The Callans also have a good market for the bull calves, which spend two days on their mothers before being raised in groups of 8-10 calves inside a shed. They are fed milk and a ration and are weaned at eight weeks of age.

The bulls spend their first summer on grass but are finished in the shed in their second summer. They are sold direct to slaughter at 20 months for about 1600 euros each.

The Callans also sell 15-20 pedigree bulls for breeding each year. D

**Penelope Arthur toured dairy farms in Ireland as part of the Global 500 and as a guest of Alltech.*

Sights set on dairy

AT 23 years of age, Aaron Callan, would dearly love to return to his family's dairy farm in Ireland.

But like many young Australian farmers, Mr Callan feels his place on the family farm is less than secure.

He's recently completed a degree in agricultural science at university in Dublin and is working five days a week as an agronomist in his home county, Louth.

"I'd love to come home but things are a bit unsure and there isn't really room for me yet," he said.

"I work five days a week as an agronomist and help out with the milking during the week when I can as well as on the weekends."

Mr Callan's passion for the dairy industry is clear as he leads a touring group of farmers around the dairy.

"It's hard work but if you have grown up with it you love it," he said.

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Is selenium-enriched milk the next big thing?

By PENELOPE ARTHUR*

KEY POINTS

SELENIUM MILK

- ✔ Selenium added to stock feed
- ✔ Improved herd health and fertility
- ✔ New range of milk developed

THE sheer body of research now going on behind lab doors to quantify the health benefits of milk is astounding for any visitor to Northern Ireland.

Most of the second day of the Alltech Global 500 conference was spent in the dairy hall, where nutritionists and scientists spoke about a range of research projects focused on the health benefits of milk and dairy products.

One speaker who caught the group's attention was Andrew Henderson, who had just launched the world's first selenium-enriched milk, NEMi.

Selenium is recognised as an essential mineral but in the past 100 years the level of selenium in soils has been declining, leading to selenium deficiencies in human diets across many parts of the globe.

Mr Henderson said that in his home country, the United Kingdom, the current daily intake was only 30-40 micrograms per day compared with the recommended 55 micrograms/day. Research had proven a clear correlation between low selenium levels and the development of some cancers, heart disease, dementia and some auto-immune diseases, he said.

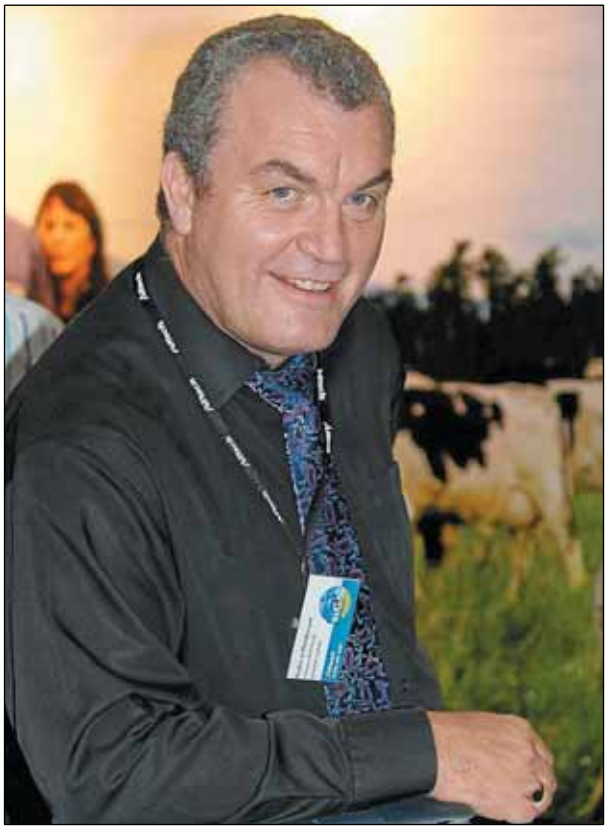
A decade ago, Mr Henderson was running a livestock feed business in the UK when his local Alltech rep alerted him to selenium deficiencies in dairy cows and the impact on cow health and fertility.

After 18 years of research, Alltech had developed Sel-Plex — an organic form of selenium yeast manufactured to boost selenium levels in domestic animals such as dairy cows to improve fertility and milk production.

The product is also administered to cattle, poultry, pigs, horses, companion animals, goats and sheep, used in aquaculture, used in toxicity and safety studies, and added to create selenium-enriched food products.

Mr Henderson said he added the product to his entire feed range and the feedback from his clients was impressive.

"I added Sel-Plex to our feeds across the board and quickly noticed that dairyfarmers were reporting improved cell counts and more milk because the cows were getting back in calf quickly and fertility was improving. It was a product that really worked," he said.



Andrew Henderson has launched the world's first selenium-enriched milk, NEMi.

The experience led Mr Henderson to begin researching the impact of selenium deficiency on human health and ultimately prompted the launch of Naturally Enriched Milk innovations Ltd (NEMi) in 2011.

After recently negotiating market access into the European Union, NEMi has become the first company in the world to market selenium-enriched milk.

Mr Henderson said the success of the business relied on an ability to prove that NEMi milk consistently had selenium levels 30% higher than "average" milk.

"We have developed a program where we can guarantee enrichment and that involves using Sel-Plex in our dairy cow feeding program," he said.

"We blood-test the cows every three months to determine exactly how much Sel-Plex each cow needs and we also test the milk coming from each farm every month to ensure its selenium levels are at least 30% above normal levels.

"It's been interesting, because we started at 40% enriched and now we are about 60% enriched because normal milk is becoming more deficient every year."

Only three farmers, milking about 2000 cows, are currently supplying the NEMi range but Mr Henderson said there was scope to increase production as the market grew.

Although passionate about the health benefits of NEMi milk, he said he was wary of promoting it as a health product.

"Because of the extra proteins in the milk, it actually keeps longer and is very fresh tasting, and in all the taste testing we have done people have said it tastes like real milk," he said.

"We are actually doing a semi-skimmed product so it's low fat but it does taste fantastic, and that's why we want people to buy it first and foremost, and then they get the added benefit of the increased selenium." D

**Penelope Arthur attended the Global 500 in Dublin as a guest of Alltech.*

Farmers from around the world

Fairfax Media's PENELOPE ARTHUR recently attended the Alltech Global 500 conference in Ireland. Following the conference in Dublin, Ms Arthur joined 16 dairyfarmers from New Zealand, the United States, Canada, Malaysia and Germany for a two-day tour of dairy farms on the east coast of Ireland. She has put together this snapshot of some of the production systems represented on the tour.

Dan & Kami Beukers

Location: Buhl, Idaho, US
Herd size: 1200 Holstein Friesian cows
Milk production: Cows milking 78lb (7.7kg). Milking three times a day
Housing: Cows penned in dry lots under shade structures
Feed: Lucerne hay, corn silage, ground corn, canola meal, cotton seed, molasses, whey
Bull calves: Bull calves sold as day-old calves for an average of $70/calf
Comments: Situated is a low-rainfall region of the state of Idaho (average annual rainfall of 250mm), the Beukers have little farming land. They buy in all their feed from local farmers who rely on the Idaho canal system for irrigation.

Silvio & Annette Reimann

Location: Thuringen, Germany
Herd size: 2300 Holstein cows
Milk production: Milked twice a day
Housing: Cows shedded all year round in free stalls. Young stock and dry cows graze on pastures from May to October
Land size: 5000ha
Feed: 2000ha of grassland, 1500ha grain, 550ha maize, 300ha canola and 300ha lucerne production
Comments: Silvio and Annette Reimann manage a large farming operation called Milk-Land Gmbh Veilsdorf. The farm also supports 450 head of beef cattle, 800 pigs and 600 Merino sheep. The farm is located in a region with an average precipitation (snow and rain) of 700-900mm annually. The farm comprises hundreds of small blocks of land that were reclaimed by the owners after the fall of communism. The business pays an annual land rent to each owner. Milk-Land Gmbh Veilsdorf is owned by its 100 employees.
Alltech products: Optigen, Sel-Plex, Bioplex, Yea-Saac

Michael McDonnell

Location: Cannontown Farm, County Louth, Ireland
Herd size: 400 Holstein Friesian cows
Land size: 491ha. Majority of land is rented
Milk production: Current herd average on a 305-day lactation is 9500 litres
Housing: Zero grazing. Cows housed all year round in free stalls
Feed: Grass silage, maize silage, freshly cut grass, alkaline treated grain
Calves: All calves raised in "hutches" until seven weeks of age. 100 heifers kept for the dairy each year. About 100 heifers grown out and sold as breeding stock, fetching up to 2300 euros/head. Bull calves sold direct to slaughter at 14-18 months
Alltech products: Sel-Plex and Yea-Saac
Comments: Michael McDonnell is currently supplying his milk to the Premier Dairies/Glanbia Co-op. He has invested heavily in recent years to improve cow comfort, slurry storage and ease of management of the herd. He grows all his own feed with 80ha of maize production, 255ha of grass and 134ha of cereal crops. The McDonnell family also grow 134ha of potatoes.

Zakaria Abd Rahman

Location: Malaysia
Herd size: 200 Jersey cows, originally imported from Australia
Housing: Cows shedded all year round
Feed: Lucerne hay imported from US, palm kernel and soya bean meal
Alltech products: Bioplex and Sel-Plex
Comments: Zakaria Abd Rahman operates the second-largest dairy on the Malaysian peninsula. He started dairying in 2007 and would like to see Malaysia "catch up to the rest of the world" in terms of dairy production. For Malaysia's population of about 30 million, the vast bulk of the country's fresh milk supply is imported. "We drink about 1.2 billion litres a year but only produce about 40-50 million litres," he said. "We get a very high price because supply is so low — about US$0.80 a litre. My aim is to double production by the end of the year."

Sandra & Jim Cooper

Name: Sandra and Jim Cooper
Location: Winton, Southland, NZ
Herd size: 1800 Holstein-Kiwi cows
Milk production: Averaging 28 litres/cow/day. Milking twice a day
Housing: Cows shedded in free stalls
Land size: 790ha
Feed: Grass silage, barley and wheat silage, sugar beet
Bull calves: Sold at four days old, often direct to slaughter
Comments: The Coopers have been dairying in New Zealand for the past 24 years and supply Fonterra.
Alltech products: Optigen, Mycosorb, Bioplex

Milk margin budget helps identify profit

By IAN WEBB*

THIS article first looks at the day-to-day practicalities of planning and understanding the financial impact of the feed ration being used, and also suggests that it is easy and useful to assess yearly "margin" milk history.

It also looks at what is involved in planning for and monitoring a yearly margin milk budget.

The system has been used to analyse the production and financial figures of a highly successful western Victorian farm for about eight years.

Traditional margin-over-feed-cost analysis typically takes the monthly milk price, sometimes assumes a cost for home-grown feed and gives a dollars/cow/day figure. The feed companies all use it.

But what does it tell anyone? Is the figure good or bad? It isn't a meaningful measuring stick.

At the simplest level, this usual margin-over-feed-costs approach can be changed to something easier to assess — **potentially profitable litres or solids** (that is, that milk not directly paid for as brought-in feed).

To calculate potentially profitable litres:

1. Calculate the margin, as usual, but use only the costs of brought-in supplements. (Nitrogen can be used as a substitute for feed, particularly for irrigators, but this approach assumes that farmers utilise as much home-grown feed as they cost-effectively can and nitrogen is part of that grass cost.)

2. Use the current monthly milk price (and include a conservative estimate of a step-up or two if desired) to get a price per litre and/or per kilogram of solids. Using solids as the benchmark is clearly the ideal, but most people are still more comfortable assessing a litre/day figure. (The accurate way to do this is to use the solids price and the current solids percentages to calculate a price/litre.)

3. Divide that into the margin over feed costs. The answer is the number of litres that have a chance of being profitable — if other costs are under control. Any other litres produced have paid for the feed that has been bought in.

A farmer can then look at that figure and decide if it is okay for the farm at that time of year. This is a practical figure a farmer with experience of his property should be able to assess. Those litres are the only ones with any chance of making a profit; the rest have come in on the back of a truck.

Margin spreadsheet

A thorough way to better manage the daily/weekly ration decisions is to have a feed-company-type spreadsheet, modified to show potentially profitable litres or solids for different rations and some benchmark litre expectation based on the farmer's experience of what is okay for that time of year/stage of lactation.

If a farmer divides their yearly brought-in feed cost by the milk price, they have the volume of milk that had no way of directly making a dollar. Some of this expenditure would have been essential to get through feed gaps and to encourage the cows into the shed.

The farmer can then have a hard look at the remaining yearly solids or litres produced per cow. It can be compared with previous years or with other farms in the area to see if it is reasonable. The figure will be influenced to some extent by whether more or less of the previous year's conserved fodder was used and by both the milk and supplement prices, but it is still a useful marker. It is accepted that a key profit driver is high utilisation of grass and that supplementary feeding can help if it produces more milk than it costs.

Margin milk figures measure how much home-grown grass or conserved feed/hectare, augmented by economically worthwhile supplementary feeding (or reduced by uneconomic supplementary feeding), has been converted to milk. They are a good proxy for the grass/supplement feed regime effectiveness — about as close as it's possible to get to a useful measurement.

Margin budgets

Avoid flying blind. Understanding margin milk at the ration level is a good start but budgeting for it is better.

The farm this approach was developed on has always used a budget and actuals spreadsheet that caters, month by month, for production and financial figures, calculates all the usual margins and unit costs, and predicts the monthly bank balances for the year. But in recent years the focus in preparing this budget has been on high but realistic margin milk targets — per cow and per hectare, but with emphasis first and foremost on the per-cow figures. This approach, and the farmer's ability to keep non-supplement unit costs under control while setting and largely meeting challenging targets, has helped optimise performance and contributed to consistently good financial results, including last year. (This farm, fortunately, dodged the worst of the weather tribulations that made it hard for so many.)

The author has analysed a large set of publicly available data and found that high margin milk producers (per cow and per hectare) who also had their non-feed costs under control all had good financial results.

Many farmers know through experience how to optimise their system but it is possible to model (a fancy name for a spreadsheet) a reasonably optimal plan, be able to monitor progress and understand when it is necessary to adjust as the year unfolds.

If a farm has some historical data to work from, it can establish a realistic margin milk solids target.

Likely monthly figures for number of milkers, litres, fat and protein percentages, anticipated kilograms of brought-in feed/cow/day and an estimated price/tonne can all be entered into an otherwise-normal financial budget and actuals spreadsheet. From this the brought-in feed budget can be calculated in the spreadsheet.

The published factory milk price can be entered for each month, with any other incentive-type milk payments and maybe a conservative step-up estimate. From this the spreadsheet can be made to calculate prospective income and work out the likely final monthly milk price and hence the margin milk solids for each month and for the year.

Just like a financial budget, this has to be worked around until a realistic and acceptable plan is settled upon.

In the lower milk price months, it may be worth feeding up to a point where there is almost no extra margin milk (that is, cost-neutral supplements) so that cows do not drop-off before higher-milk-price months, but anyone doing this really needs to understand their numbers.

These approaches are not an argument for high-input systems. They are about understanding and monitoring the financial effectiveness of any level of supplementary feeding.

*Ian Webb has been modeling and analysing the production and financial figures of his daughter and son-in-law's Macarthur, Vic, farm for17 years. He can be contacted at email <iwebb@alphalink.com.au>.

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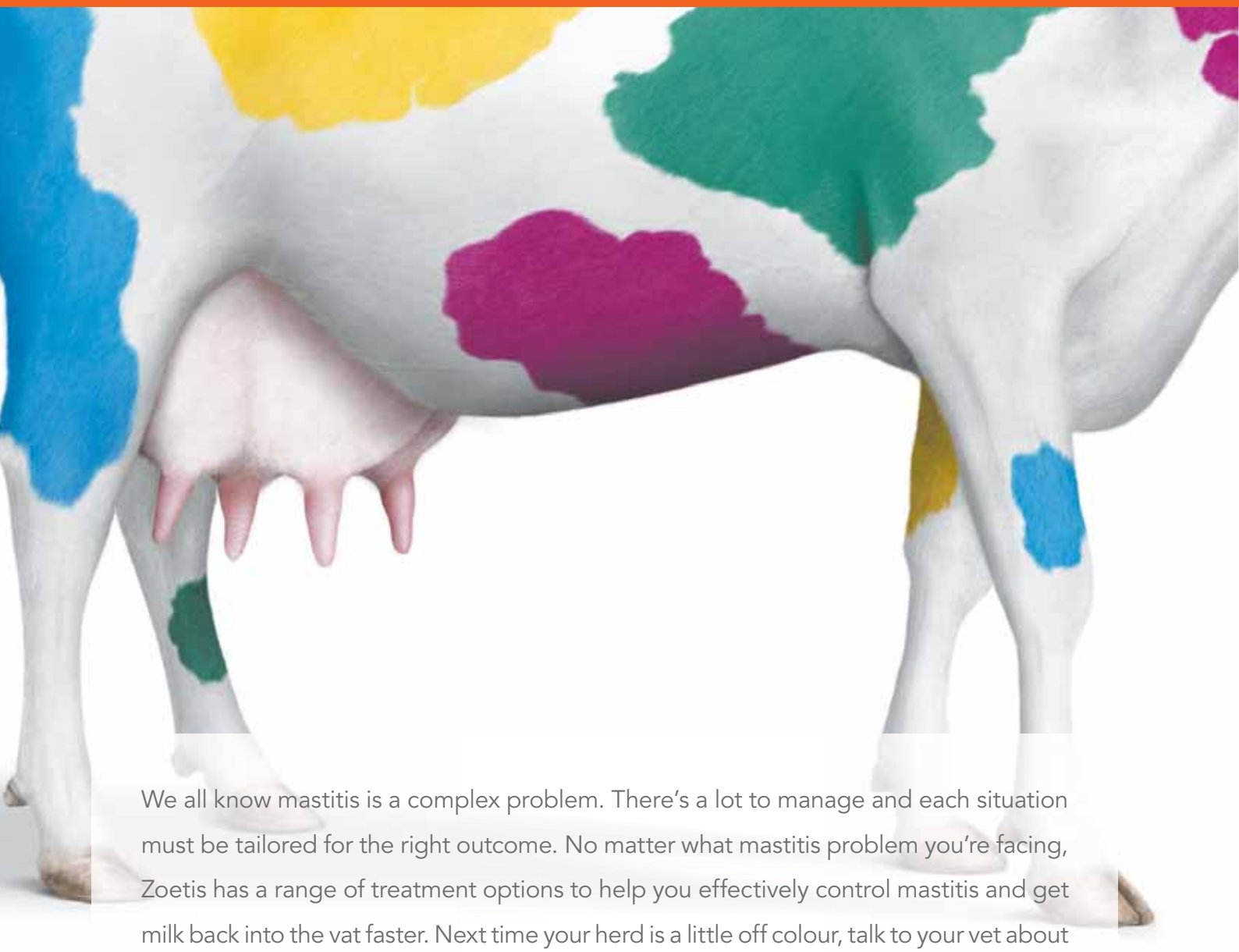

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Dairyfarmers drive employment initiative

DAIRY Australia (DA) launched the first trial of the Employment Starter Kit initiative — or ESKi — on September 19.

Research shows that one of the key issues in attracting and retaining people on dairy farms are the employment practices being used.

In response, workforce planning and action steering committees were formed at WestVic Dairy and DairyTas, with a primary focus on developing actions and supporting the dairy industry to attract the skilled people it requires.

ESKi is the first action to be delivered by the committees and was developed with direct input from farmers.

"ESKi is a user-friendly employer kit that details all of the mandatory requirements for dairy businesses that employ staff, plus has some great ideas for improving the employment experience on-farm," DA program manager of industry workforce planning and action Bill Youl said.

The WestVic Dairy Workforce Planning and Action Steering Committee: Gavan Mathieson, Oonagh Kilpatrick, Karen Hart, Jocelyn Bevin, Bill Youl, Chris Hibburt and John Dalton.

"The kit has been built from The People in Dairy website, which has easy-to-access 'people management' information and resources."

A draft of ESKi was piloted by more than 30 farmers and, following positive feedback, it has now been launched at WestVic Dairy, where it has been well-received, with more than 80 people in attendance at the trial launch.

Further ESKi launches will take place in Gippsland and Tasmania.

To access Dairy Australia's people management resources visit website <www.thepeopleindairy.org.au>.

Scholarships for new graduates with dairy passion

APPLICATIONS are now open for Dairy Australia's (DA) 2014 Manufacturing Scholarship Program.

The program offers four to six passionate new graduates and diploma holders an opportunity to be trained in relevant aspects of dairy manufacturing.

The program, which is to take place during February and April 2014, will provide graduates with a generous living allowance and include all costs of training, travel and accommodation covered by DA.

Scholars will learn about dairy science foundation studies, practical cheesemaking, milk powder theory and practice, market milk and milk fat products through the National Centre of Dairy Education Australia (NCDEA).

The program is also strongly sup-

Scholar to broaden farm management studies

PAUL Niven has been awarded a prestigious Nuffield Scholarship, supported by Dairy Australia (DA).

Mr Niven, a Van Diemen's Land (VDL) Company dairy business manager, was one of 21 people from across the nation to be awarded a scholarship.

The award is a 16-week program consisting of both a group and an independent study trip, where scholars can study a topic of their choice.

The scholarship will give Mr Niven the opportunity to visit New Zealand, the United States, Brazil, Ireland, China and Saudi Arabia to complete research into his chosen field of integrated farm management systems.

"I'd like to see how to integrate commodity pricing into our management system and research environmental recording and monitoring, grazing management as well as stock information and management," he said.

"Presently we use a combination of programs to bring together stock and farm information to manage the business. There are numerous better systems that embrace smartphone and cloud-based systems, which can add considerable benefit to the business."

DA's industry people and capability manager Shane Hellwege said supporting farmers such as Mr Niven had a positive flow-on effect to the whole dairy industry. "The research Paul undertakes will broaden the understanding of all dairyfarmers," Mr Hellwege said.

DA partnered with Nuffield Australia to offer this opportunity to a dairyfarmer.

The scholarship is open to people in agriculture across Australia. More information can be found at website <www.nuffield.com.au>.

Nuffield Scholarship recipient Paul Niven.

ported by many dairy manufacturers, which provide three-to-five-day placements at their factories to cover the commercial aspects of dairy manufacturing.

To be eligible for the program, applicants must have a science-based qualification such as engineering, agriculture, nutrition or science at degree or diploma level, previous work experience in a food or related industry and a passion for the dairy industry.

While there is no guarantee of a job at the end of the scholarship training, nearly 80% of trained graduates have found positions with dairy food manufacturing companies within a few months of completing the training.

Applications will close at 5pm EST on Monday, December 2.

Applying for the scholarship is simple through an online application form. Further information and applications are available through website <www.dairyaustralia.com.au/dairy-manufacturingscholarship>.

Intending applicants are reminded to read the scholarship flyer, frequently asked questions and terms and conditions before applying.

Hands-on approach brings dairy success

By ALEXANDRA DE BLAS

DAIRYFARMER, Bega Cheese chairman and Gardiner Foundation director Barry Irvin says his hands-on involvement in dairying is integral to his success in the industry. "Dealing with issues as a farmer allows me to keep that instinct for what is going on more broadly," Mr Irvin said.

"If I have a big decision to make about Bega Cheese or the dairy industry, when I'm down there milking cows in the cold and the wet — really feeling it — it helps me to reflect on 'the right thing to do for the dairyfarmer or the industry'.

"It is part of my value system to want to do it and it makes business sense, but from the perspective of my broader role in the industry, keeping those links with the very beginning of the supply chain keeps me focused."

Mr Irvin describes his lifestyle as "hectic" but most of us would see it as "impossible".

He travels extensively. In an average week he flies from Sydney to his farm at Bega on Sunday evening. Monday morning he milks at 4am, then meets with his farm manager and team at 6.30am for the weekly catch-up. Work for the day at Bega Cheese begins at 8.30am. He spends that night on the farm, followed by another 4am milking, then catches the plane to Melbourne for a couple of days. He may then head north, or stay in the city for meetings before returning on Thursday to Sydney, where Bega Cheese's corporate and legal team is headquartered. On Friday afternoon he moves into his role as chairman of Giant Steps, a not-for-profit organisation to support and educate children with autism — inspired by his son Matthew's disability and need. The weekends he spends with his wife and children. On Sunday it starts again.

Mr Irvin's incredible drive is underpinned by the personal mantra he tries to live by: "If you can help, you should."

It is a commitment that evolved over time. "When my father died and I left a career in banking and returned to the farm, I was unsure whether dairyfarming was what I wanted to do," he said. "But I was very affected by the quiet and dignified way older dairyfarmers came to me and offered their advice — out of respect for my father."

Before that, "growing up with a disabled sister, I observed my mother always doing her best — sometimes in a fairly lonely way — which instilled in me the importance of helping others", he said. "Ironically, it makes you feel much better about yourself."

Translating that to the industry, Mr Irvin said, "You should always be prepared to put yourself forward to make a difference — and that difference should be a positive one."

The Irvins milk 460 cows in a 50-stand rotary on 400 hectares of both dry and irrigated pasture. They have just upgraded their irrigation system to improve water and power use efficiency. All replacement stock are bred on-farm so when the beef herd is included they run 1200 head on 1011ha. Mr Irvin is a great advocate of pasture and says he believes in "keeping the business simple".

Barry Irvin feeds the calves on his farm before another busy day in the office at Bega Cheese.

Gardiner Foundation

Mr Irvin has just re-nominated for a second three-year term on the board of the Geoffrey Gardiner Dairy Foundation.

He sees the foundation as a unique entity in Victoria — one that is extraordinarily valuable to both dairyfarmers and industry. "The foundation can take a long-term and strategic view," he said. "Not having the imperative to generate immediate outcomes enables it to take risks in order to improve the lot of the industry. It also provides support to dairy communities."

GARDINER FOUNDATION

Despite his busy schedule, Barry Irvin tries to milk on his farm every week and says it helps put decisions he makes into perspective.

Mr Irvin said that in the past couple of years board chairman Mike Taylor had energised the foundation, and bringing Mary Harney in as chief executive about a year ago gave it a further boost. Ms Harney has a breadth of knowledge about science, research and development and taking products to market and was previously chief operating officer and director of The Office of Cancer Research at the Peter MacCallum Cancer Centre in Melbourne — the largest cancer research institute in Australia.

Ms Harney initiated a strategic review which Mr Irvin said had "focused Gardiner on being more targeted, directing funds to fewer projects with greater impact while increasing the opportunity to partner with others".

As chairman of the community and people committee of Gardiner's board, Mr Irvin (together with the chief executive) is focused on growing leadership within the industry: "building supports and alumni around our future leaders to allow them to grow uninterrupted".

His advice to young dairyfarmers is "it is very hard to achieve things in isolation; you achieve things far more easily if you collaborate, share ideas and seek the knowledge of others". He said the common denominator for those who succeeded was that "they look at things in a practical way, they seek advice, they are willing to change and they have been willing to invest themselves in the industry".

Victorian Minister for Agriculture and Food Security Peter Walsh established a taskforce for the Government's 'Food into Asia initiative', with Mr Irvin as a member. It has a goal to double food and fibre production by 2030.

"It is a very worthwhile goal, and we need to set goals," Mr Irvin said. "Successful dairying takes place in many environments around the world and there is no reason the industry shouldn't be able to adapt to climate change here in Australia. You need a community licence to operate, because the community won't keep operating unless the industry is sustainable."

As executive chairman of Bega Cheese, Mr Irvin has seen the company climb from small beginnings in Bega on the Far South Coast of New South Wales to become the largest cheese cutting and packaging company in Australasia. Sales in financial year 2013 exceeded $1 billion. It operates five factories across NSW and Victoria and exports to 40 countries.

Investing in dairy's future

THE Geoffrey Gardiner Dairy Foundation is a proactive investor in projects that have significant impact for the Victorian dairy industry and its communities.

The Geoffrey Gardiner Dairy Foundation was established by the Victorian Government in partnership with the organisation representing the majority of Victorian dairyfarmers, the United Dairyfarmers of Victoria (UDV) and Victoria processors and manufacturers.

It was named in recognition of the late Geoffrey Gardiner and created under the Victorian Dairy Act 2000 with its initial funding, the corpus, principally coming from the sale of milk brands as part of deregulation of the industry.

Headquartered in the Melbourne CBD, the foundation is structured as a company limited by guarantee and led by a well-networked, multi-skilled board of six industry leaders.

The foundation employs a small team of people who are extensively networked across the dairy industry and is delighted to have as its patron Alex Chernov AO QC, Governor of Victoria.

Since its inception the Gardiner Foundation has contributed nearly $50 million toward 664 projects. With partner co-funding, this represents $155 million in new investment across the dairy value chain.

The foundation continues to maintain the real value of its corpus and currently invests about $5 million per year in project funding in partnership with other parties to improve the performance of the dairy industry and assist its communities.

Gardiner Foundation chief executive officer Mary Harney.

Small can be beautiful

ALEXIS PEREZ*

KEY POINTS

SMALL FARM

- ✔ Farm milking 180 cows supporting two families
- ✔ Achieves return on asset of 6.5%
- ✔ High levels pasture utilisation, calves four times a year

Mark and Debbie Twose have been successful on a small farm by calving four times a year.

RECENT studies have found that small dairy farms with fewer than 200 cows are at a disadvantage compared with farms with larger herds.

Figure 1 shows that for the five years to 2012, small farms that participated in the Tasmanian dairy benchmarking program had a lower average return on assets than larger farms. The small horizontal lines at the top and bottom of the vertical lines in Figure 1 show there was a wide range in return on assets within each herd size category.

The variation in returns on assets within each herd category was greater than the variation in average return of 4.3% to 7.7% across the herd size categories.

The high returns achieved on some small dairy farms suggest good management of small dairy farms can overcome the disadvantages caused by a small scale of operation.

The 79-hectare dairy farm (50ha as a milking area and 29ha as runoff) share-farmed by Mark and Debbie Twose, at Forest in Circular Head, Tasmania, is one example of a well-managed small dairy farm milking 180 cows year-round that is able to achieve a high return on assets while supporting two farm families.

Mr Twose is originally from New Zealand and moved to Tasmania in 1994, having done his three-year dairy traineeship at the Lincoln Research Station in NZ, where he learned how to monitor pasture growth and grazing management. Mrs Twose is Tasmanian.

The couple had a number of dairy jobs managing and share-farming large herds for the Van Diemen's Land Company.

In 2010 they took on a 20% share-farming position on a new dairy conversion for ex-NZ farm owners Brian McNab and Bev Swale.

The unusual feature of this small farm is that there are four calvings each year in February, May, August and November and the cows are in milk for 380 days each lactation.

In 2012-13 the farm provided a 6.5% return on assets for the farm owners using a land value of $23,000/ha.

As share-farmers, the Twoses received a 20% share of the income from the 117,000 kilograms of milk solids (MS) and a high milk price because of the year-round calving.

The return on assets for this farm was more than double the 3.1% average return for Tasmanian dairy farms in the ABARES 2012-13 farm survey for the same year.

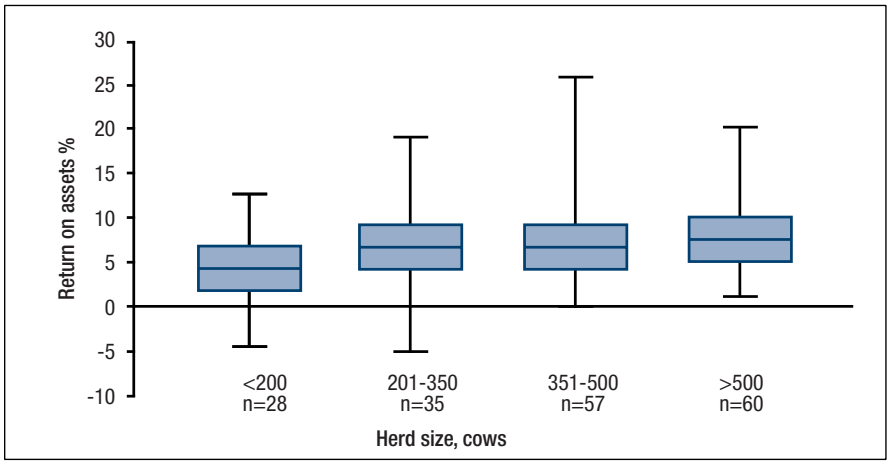
The keys to the Twoses' success in the past 3.5 years are:

- **High production and income per hectare:** 2349kg MS/milking hectare and $8379 income/ha achieved by calving four times a year, feeding 1.8 tonnes of grain per cow and a stocking rate of 4.2 cows/ha (includes dry and milking cows run in the milking platform).
- **High pasture utilisation:** They utilised 16t DM/ha and grew 18.8t DM/ha in 2012-13 with 54% of the effective milking area being irrigated. Mr Twose's skills monitoring pasture growth and managing pastures have helped him achieve the highest pasture utilisation recorded in Tasmania through the benchmarking program. Mr Twose sodseeds more than 50% of the farm each year with ryegrass, which contributes to the high pasture grown and utilisation.
- **Medium level of cost of production:** The cost of production on the farm was kept to $4.42/kg MS in 2012-13, which is close to the industry average cost despite the high production per cow and per hectare.

Through the combination of an innovative calving pattern to optimise milk production, milk price and income and Mr Twose's skills in achieving both high pasture utilisation and high pasture intake by the cows, the share-farmers and farm owners have offset the disadvantages of their small scale to develop a farming system that is both profitable and sustainable.

Alexis Perez is senior industry development and extension officer with the Tasmanian Institute of Agriculture

Figure 1: Return on assets versus herd size for dairy farms in the Tasmanian dairy benchmarking program over the five years to 2012.



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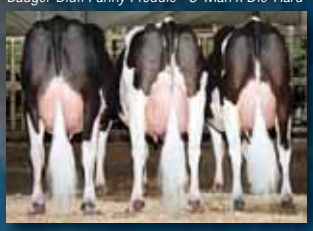

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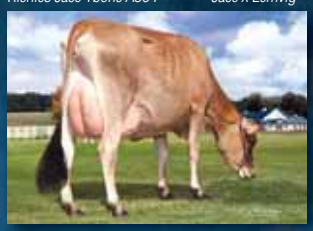

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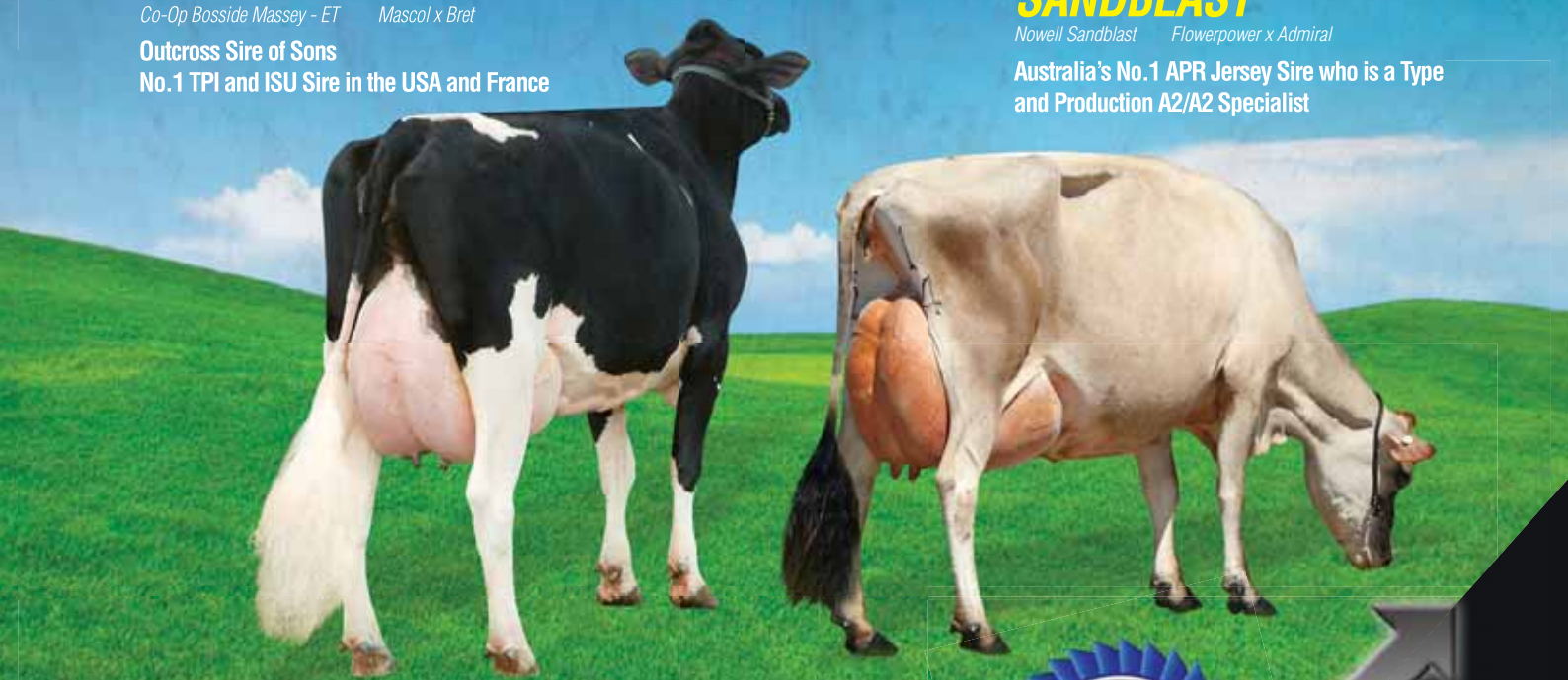

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Keeping control of costs to lift profits

By JEANETTE SEVERS

DAIRY EXPO FORUM

KEY POINTS

- ✔ Farmers focus on maintaining tight cost control
- ✔ Poor season and low prices created problems last year
- ✔ Plan capital expenditure carefully

Panel members at the South Gippsland Dairy Expo: Hans van Wees, Tinamba, Vic; on-farm consultant Matt Harms; Toby Leppin, Bena, Vic; Trent Crawford, Binginwarri, Vic, with his daughter Charlotte; Russell Mann, Leongatha branch manager of Rabobank Australia; and Paul and Louise Sherar, Loch, Vic, with their sons, Zach and Blake. Mr Harms was dressed as a leprechaun while facilitating the session and gave the participants three wishes. The overwhelming wish was for an improvement in seasonal conditions to allow the cutting of silage and restoration of fodder supplies.

THE tight margins of the past financial year have taught many dairyfarmers to operate their businesses as if every year was a tight year and benefit from the profits. That was one of the conclusions of a forum at the South Gippsland Dairy Expo.

The two-day South Gippsland Dairy Expo, in its 15th year, was held at Korumburra, Vic.

Other outcomes of the producers' forum indicated a lot of optimism in the dairy industry, the need for lifestyle to be a focus of the business plan — including family holidays and looking after workers — and the risk of being unable to crop silage, in particular, and hay.

The annual forum, a panel of dairyfarmers speaking about their businesses and their philosophies, is a major part of the dairy expo. It was facilitated by Matt Harms, from OnFarm Consulting, and was titled 'Let's take a look at profit'.

Paul and Louise Sherar, of Loch, Vic; Trent Crawford of Binginwarri, Vic; Toby Leppin, of Bena, Vic; and Hans van Wees, of Tinamba, Vic, were the dairyfarmers on the panel. Rabobank Australia Leongatha branch manager Russell Mann provided a banker's perspective.

Mr and Mrs Sherar sharefarm on a 60/40 agreement and manage split calving over autumn/winter. To specifically address shortfalls in fodder and pasture last year, they have leased a second dairy farm at Korumburra. Their focus is on building their herd rather than owning land.

Mr Crawford milks 144 cows on his own dairy farm, aiming for a stable herd of 140 head. Calving begins 10 days after the end of the school holidays in July as a lifestyle choice. Mr Crawford also relies on growing his own silage and hay supplies.

Mr van Wees is a share-farmer and milks 700 cows on irrigated land. He begins calving on August 10 and dries off his cows from July 25. His focus is on building his land ownership. In the past year, Mr van Wees coped with a flood inundating the farm for two days, a fire that burnt pasture and hay supplies, and disease in his herd.

Mr Leppin is in partnership with his wife, Lynn, and son, Nicholas. Together they milk 350-400 cows. Calving is for eight weeks from July 5. Cows are dried off for four weeks. Mr Leppin also crops silage and hay supplies from his land.

Most producers rated the previous financial year poorly, from 1/10 to 3/10. Mr Crawford, who runs a lean operation, rated it as 5/10.

Mr Mann said that last year some farms in the region showed some profit while others had losses. "It was a tight year — I'd not like to see another year like it," he said.

"Last year became a matter of containing damage as much as possible. The more profitable farms stopped capital investment early on and had a large supply of fodder to tap into."

Mr Sherar agreed the past year was affected by tight margins. "For us, last financial year was affected by having too many cattle and no fodder and having to buy grain," he said.

He explained what he had learned from the past year and the changes they decided to instigate.

"Winter-calving cows were costing us, eating fodder," he said. "Combined with a too-high stocking rate and therefore high pasture consumption, we didn't have the stores to see us through, so we had to risk buying feed.

"Our focus is building cow numbers so we decided to lease this other farm where we can put the heifers and the calving cows. I'm aiming to build fodder stocks off the extra land and utilise its pasture as much as possible too."

Mr Leppin agreed that although his business broke even, there was significant risk in buying grain as fodder stores ran out.

"Right at the start of the year, with a wet year, the writing was on the wall," he said. "I locked up paddocks as much as possible and sold any stock that were not performing.

"Selling those cows gave us the money to pay for more grain. I also had to source fodder from the north and it was in short supply.

"This year I'm aiming to conserve fodder and return to normal stocks.

"I'm not changing production. If we do everything the same as last year, if we're just as careful and just as tight about spending, with a good milk price we should make profit."

The lack of pasture feed and reliance on fodder stores also affected Mr van Wees. "We had good-quality fodder on hand at the start of the financial year so fed that through lactating," Mr van Wees said.

"Then we were hit with a lower irrigation right, which meant less pasture was avail-

able and more fodder needed to be bought."

He has since reduced his workforce by one and aims to boost production to $1200/cow profit with the current staff.

Lowering costs of production in the past financial year was also an issue for Mr Crawford.

"The only thing we changed was dropping capital expenditure to close to zero," Mr Crawford said.

"I aim to stock two cows per hectare and I'm happy to keep that system the same through each year. I regularly cull the poor performers, based on herd tests.

"I returned 550 kilograms of solids/cow last year and I'm aiming for the same this year but without spending the same on inputs.

"Last year, I bought in about 0.5 tonne of lucerne/cow and looked after them through summer so they did milk well, with a hoped-for autumn break. This year I'm expecting to buy silage, again because of the season.

"But, there's definitely genuine profits in dairy."

Mr Crawford worked as a veterinarian before moving into dairy. In this financial year, he has bought a new tractor and he regularly replaces the motorbike he uses every day.

"Every panellist is making a surplus, but what are they doing with that surplus?" Mr Mann questioned.

"Like all farmers, they re-invest in the business. I'm already seeing many inquiries for capital investment and expenditure.

"Some plans you wonder what they are thinking, but other plans are well-thought-out and based on the average price compared to last year, not on maximum forecast price.

"We all need to avoid a year like last year. Everyone needs certainty around the milk price and less volatility in the market."

The biggest risk at the moment, for every panellist, was inability to build fodder reserves and therefore having to pay for feed over a long term.

Mr Sherar said: "Our focus is on risk from the current weather pattern, preventing silage being cut as usual at this time of the year because the ground is too wet."

Other panellists agreed.

Mr Crawford said: "At this stage, the silage will have to be cut as hay later in the season."

The dairy expo was held during the worst storm to hit the region in its history.

Gippsland, generally, has experienced a wet winter, with many paddocks still too wet to hold up under machinery.

The early and mid-spring is a common time for cutting silage in the region.

Earlier in the day, Victoria's Deputy Premier, Peter Ryan, opened the expo before departing on a trade mission to Asian countries to advocate on behalf of the State's agribusiness producers and manufacturers. "The dairy industry brings people together and there's plenty of room for everybody in this market," Mr Ryan told a packed room of dairyfarmers and other industry members. "Particularly in international markets, there's opportunities for all of us.

"We as a government have enormous belief in this industry."

Later in the day, in his other guise as Minister for Regional and Rural Development, Mr Ryan announced a significant funding contribution for Burra Foods, also at Korumburra.

The announcement of the $1.5 million grant contributes to an investment of $4 million in water-saving and treatment initiatives as part of Burra Foods's expansion into nutritional milk powders in the next six months.

A director of Murray Goulburn, Bill Bodman, endorsed the need to expand into international markets.

"The Australian dairy industry needs to grow to compete internationally, especially in the growing powdered baby formula market," he said. "The co-op will continue to look to growing demand from Asia and Africa as these populations adopt a more Westernised diet."

The emphasis for those present was on marketing and communicating the benefits of working and investing in the dairy industry and international trade opportunities. D

Time to consolidate

By ANNABELLE BEALE

KEY POINTS

DEBT TWO-EDGED SWORD

- ✔ Risk adds to variability of farm business wealth growth
- ✔ Call for more consistent milk price

THIS season was one in which dairyfarmers should consolidate, an industry breakfast in South West Victoria has heard.

The wounds of last season were yet to heal for dairyfarmers despite a stronger farmgate milk price, easing feed costs and favourable seasonal conditions, the Department of Environment and Primary Industrires (DEPI) and Dairy Australia (DA) event was told in September.

DEPI farm business economist Claire Waterman explored the 2012-13 Dairy Farm Monitor Project results, which analysed 75 farms from Victoria's North East, South West and Gippsland regions (believed to be in the top 30-40% of industry operators) during what was regarded as the "most challenging" season since the 2006-07 drought.

Of the farms surveyed, Ms Waterman said 56 recorded a negative return on equity. Last season's average farmgate price was $4.90 a kilogram of milk solids (MS) (down 11%) and grain was up to $336/tonne of dry matter (up 14%).

Whole-farm returns for the State averaged -$58,875: -$98,000 in the South West, -$59,000 in Gippsland and -$5000 in the north. Ms Waterman said northern Victoria's access to irrigation drove profits while the South West's harsh seasonal conditions hurt the bottom line.

Debt

DEPI farm business economist Daniel Gilmour analysed the impact of debt as a "two-edged sword" in regard to financial risk and farm growth. "To an extent, farmers can control their debt with the chunk they bite off," Mr Gilmour said.

"Debt can help grow wealth more quickly but during tough years you can lose money more quickly."

Addressing the catchphrase "Is bigger better?", he analysed the influence of financial risk regarding the impact of business expansion and said scale was important but "bigger" did not mean "higher return".

"What the financial risk does is add variability to your net cashflow — in good years you will make more, in bad years you will make less," he said.

"What has possibly happened in the past 12 months is it creates inefficiencies in your farm business because the banks are always taking the first bite of your milk cheque. If the banks are taking a lump to pay your interest and that is limiting your ability to feed your cows or fertilise your paddocks, that can have a flow-on effect on the production you generate from your farm."

Mr Gilmour said while financial risk could add variability to the wealth a farm business earnt, it could be negative and needed to be considered carefully. "On average, seven out of 10 years will be good years; during poor conditions, debt becomes a burden, so it is important to think 'What if it all went against me?'" he said.

Control expenditure

OnFarm Consulting's John Mulvany said the period through to the end of November was important, with the first step being to recover from last season, and called on farmers to be critical of their expenditure.

He said farmers needed to review when they produced milk and not be influenced by "rampant optimism", and called for a rolling average of $5-6/kg milk solid from processors.

"You need to be able to survive at $4.80-$5/kg MS and be comfortable at $5.30-$5.50/kg MS, because if you can't do that you will lurch from crisis to crisis," Mr Mulvany said.

"You need to review your production system and understand when you produce milk and why. We still need to focus on growing pasture, utilising feed, and making sound and timely decisions."

Mr Mulvany said a sustained rolling average milk price of above $5.40/kg MS would ensure growth within the dairy industry. Milk processors needed to offer a consistent milk price of $5-$6/kg MS annually to spur growth, he said.

His views were supported by DA's commercial research manager Norman Repacholi, who said the longer-term rolling average needed to be less variable, with price certainty as a platform for growth.

Referring to DA's 'Horizon 2020' report into the future of the dairy industry, Mr Mulvany said the industry had stopped growing wealth and was at a crossroads.

"It hasn't grown as an industry over the past decade and has a diminished global standing and reputation," the report said.

"Poor seasons cut capacity but the uncertainty has been worsened by its own capabilities and attitudes. Due to climate and market volatility, the industry has been faced with an increasingly complex set of management and technical issues on-farm."

The report states that while responding to issues, the industry had lost its ability to successfully manage and grow dairy farm wealth over time through inevitable commodity cycles.

"That $5-$6/kg MS is the zone the milk price needs to be to get growth," Mr Mulvany said. "We are all getting hyped up about a great milk price but it is a milk price that needs to be a sustained rolling average."

Agreeing with Mr Mulvany's calls for that sustained rolling average, Mr Repacholi said uncertainty with milk pricing prevented long-term planning for business progress.

"It's not just the (farmgate price) number; it's how long that number consistently appears in the farmer's milk cheque, especially when planning for the future," he said.

"How that relates to the 'Horizon 2020' process is that there is opportunity out there in the market — and part of the issue at the moment is the challenging seasonal conditions, that milk price fluctuation from season to season and the ability to take advantage of that, given that farmers have had cashflow problems previously from high input costs, lower-than-anticipated milk prices and poor seasonal conditions.

"This year the price is good but that additional price is going into improving balance sheets and getting ahead. With a few consistent years of higher prices farms will be in a better position to take advantage of the opportunities on the global market."

To have a stronger foothold in the global market, Mr Repacholi said milk processors needed to offer consistency.

"The milk price needs to be offered on a longer-term basis so farmers can do things on-farm to manage the fluctuations that there will inevitably be," he said.

"When we have more product to spare we can take advantage of the export market. We are there at the moment but we can be so much bigger if we have the milk available."

Mr Repacholi said the season's milk price of about $6/kg MS could be a new pricing platform if conditions continued to shape up well with commodity prices at strong levels.

"Although it also depends on how other producers around the world respond," he said.

"The potential for this change is out of the control of Australian producers and Australian companies but what's in our control is the ability to prepare and position ourselves to make the most of long-term future of dairy."

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Dairy Australia
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Dairy on show to world

AUSTRALIA'S dairy products have been showcased again on international soil to hundreds of stakeholders in eight cities across the Middle East and South-East Asia.

Dairy Australia (DA) international trade development manager Peter Myers and international market manager Sarah Xu have been responsible for the program of seminars to customers in key target markets.

Mr Myers said there were three key objectives of the seminars. "This program has become an important part of maintaining international market access for Australian dairy products," Mr Myers said.

"The seminars work to maintain positive buyer perception and demand for Australian products in international markets while expanding opportunities for international market trade and sales. It is also our aim to positively position Australian dairy products and industry quality and food safety systems with international buyers."

The Middle East seminars were delivered to more than 100 industry stakeholders in Riyadh (Saudi Arabia) and Dubai (United Arab Emirates) and featured Australian industry updates and a world dairy market analysis and were followed by a networking lunch.

The events were supported by the Australian Embassy, Austrade and Australian dairy companies Murray Goulburn and Bega, which supplied their products for the networking lunches. The Australian Ambassador to Saudi Arabia, Neil Hawkins, attended and introduced the Riyadh seminar, and the Austrade senior trade commissioner in Dubai, Gerard Seeber, did likewise in Dubai.

Ms Xu said participants in the Middle East welcomed the decision to conduct similar seminars annually in the region.

In South-East Asia more than 500 participants attended the seminars in Manila, Hanoi, Bangkok, Singapore, Kuala Lumpur and Jakarta. Representatives from dairy companies, industrial and commercial food businesses, the hospitality sector and retailers were also treated to cooking demonstrations featuring Australian dairy ingredients.

The events in Kuala Lumpur and Jakarta were part of a collaboration with the Victorian Government's Super Trade Mission to South-East Asia, and both featured an opening address by Victorian Minister for Agriculture and Food Security Peter Walsh.

Dairyfarmers' levy funds are being used to promote dairy abroad, including in the Middle East and Asia.

"The tour program was an excellent opportunity to keep building on DA's relationships with a large number of international customers and stakeholders in South-East Asian markets while also being able to demonstrate the collaborative nature of the Victorian agriculture sector," Mr Myers said. "We came away with very positive feedback from attendees."

Winners all around at Scottsdale

SCOTTSDALE Primary School in Tasmania has enjoyed a morning tea brimming with delicious dairy foods thanks to a partnership between Dairy Australia (DA) and Fonterra.

Scottsdale was the winner of DA's 2013 National Healthy Bones Week schools competition. The school took out the prize by completing DA's Unbeatable Bones curriculum linked lesson plans and demonstrating a creative approach to promoting dairy foods to the local community by proposing a dairy day showcasing and selling products from the local area.

The students were rewarded for their efforts in September, with 200 lucky Year 3-6 students enjoying a morning tea of Bega Cheese Stingers and CalciYum Yogurts thanks to Fonterra, which has a factory nearby at Spreyton.

They also received a special visit from Tristan Thomas, Olympic hurdler from the Australian Institute of Sport.

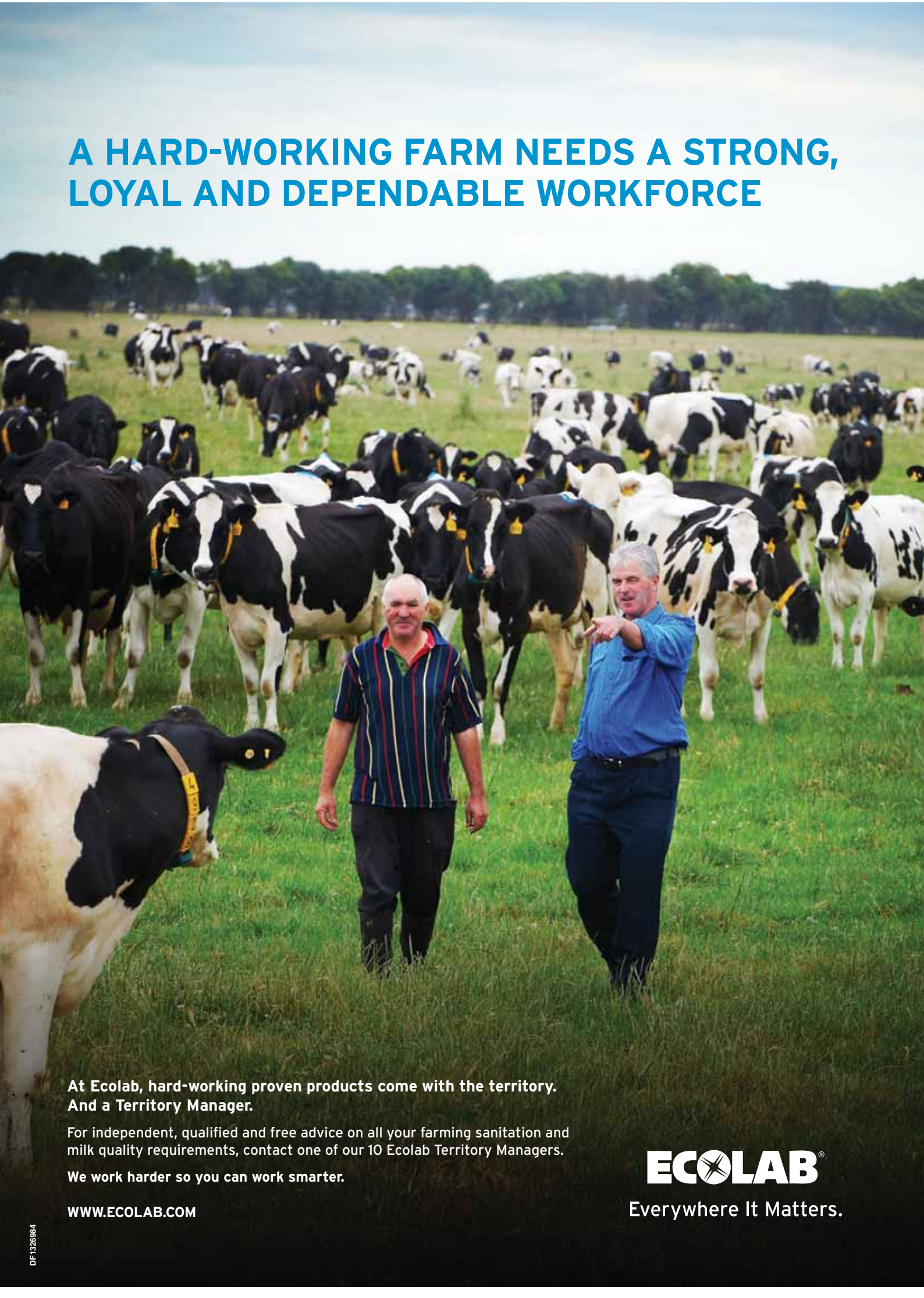
The school's Year 3-4 teachers found the competition a nice fit with the curriculum. "The Unbeatable Bones lessons provided an excellent introduction to healthy eating," the school said in feedback about the day. "The lessons were relevant and engaging. We received positive feedback from students and parents about the importance of teaching a healthy balanced diet and the benefits of dairy foods."

Olympic hurdler Tristan Thomas with Scottsdale Primary students. Photo: North Eastern Advertiser

The teachers were also thrilled to have Mr Thomas visit the school to share his health tips, including exercising regularly and eating dairy foods for building strong bones. "This really reinforces the healthy messages we've been teaching the children which we hope they will carry with them for the rest of their lives," the school said.

The timing of the event couldn't have been better, with World School Milk Day taking place the same week. With most children over the age of four not consuming enough dairy foods daily to meet recommendations, DA's industry promotions program has a strong focus on educating and celebrating Australian dairy foods with primary school kids.

Learn more about DA's schools programs at webstite <www.dairy.edu.au/discoverdairy>.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Dairy Australia
Your Levy at Work

Legendairy ambassadors kick goals for industry

LEGENDAIRY ambassadors were front and centre at the Victorian Football League (VFL) grand final, held at Melbourne's Etihad Stadium on September 22.

As part of Dairy Australia's (DA) season-long sponsorship of the VFL and Auskick, the four-week Legendairy VFL finals series was an opportunity to promote the strong ties between Aussie rules footy and dairyfarming communities, which have produced their share of players in the sport.

Cobden, Victoria, farmers Reggie and Tanya Davis, along with Mark and Monique Bryant and Paul and Sarah Stammers, all from Kaarimba, Vic, were on hand for the clash, which saw the Box Hill Hawks down the Geelong Cats 14.15 (99) to 11.12 (78) in front of a 15,100-strong crowd. A further 123,000 watched the action at home on ABC1.

Mr Davis and Mr Bryant, who are both involved in their local footy clubs, took to the field for a Legendairy half-time skills competition. The pair were joined on the turf by former North Melbourne Australian Football League (AFL) star Anthony Stevens and former Fitzroy player and assistant coach Leon Harris, both of whom grew up on dairy farms and were recently named in the <footyalmanac.com.au> 'Blokes who grew up on dairy farms team of the century'.

"For the whole family and community, it's important for us to have an outlet away from the farm, like footy, and to give something back," Mr Bryant said. "When the dairy industry is going well, our regional communities benefit."

Under the watchful eye of Mr Stammers acting as on-field supervisor, the quartet faced off in a knockout battle of kicking, marking, push-ups, star jumps and sculling a glass of milk. Round one victors Mr Davis and Mr Stevens then duelled in a grand final that featured the same challenges, including a second glass of milk. Mr Stevens was declared the overall winner.

Victorian dairyfarmer Reggie Davis (left) and former AFL star Anthony Stevens (kicking) battle in the half-time competition.

"I absolutely loved walking out onto the ground," Mr Bryant said. "Being from the country and representing the dairy industry, you don't get that opportunity very often."

The stadium announcer supported the competition with facts about milk's important role as a sports recovery drink and information on Victorian dairy's history of fostering footy talent.

"There would have been plenty of people in the crowd who related the half-time activities to the dairy industry and the milk they had on their Corn Flakes that morning," Mr Bryant said. "It was a great event."

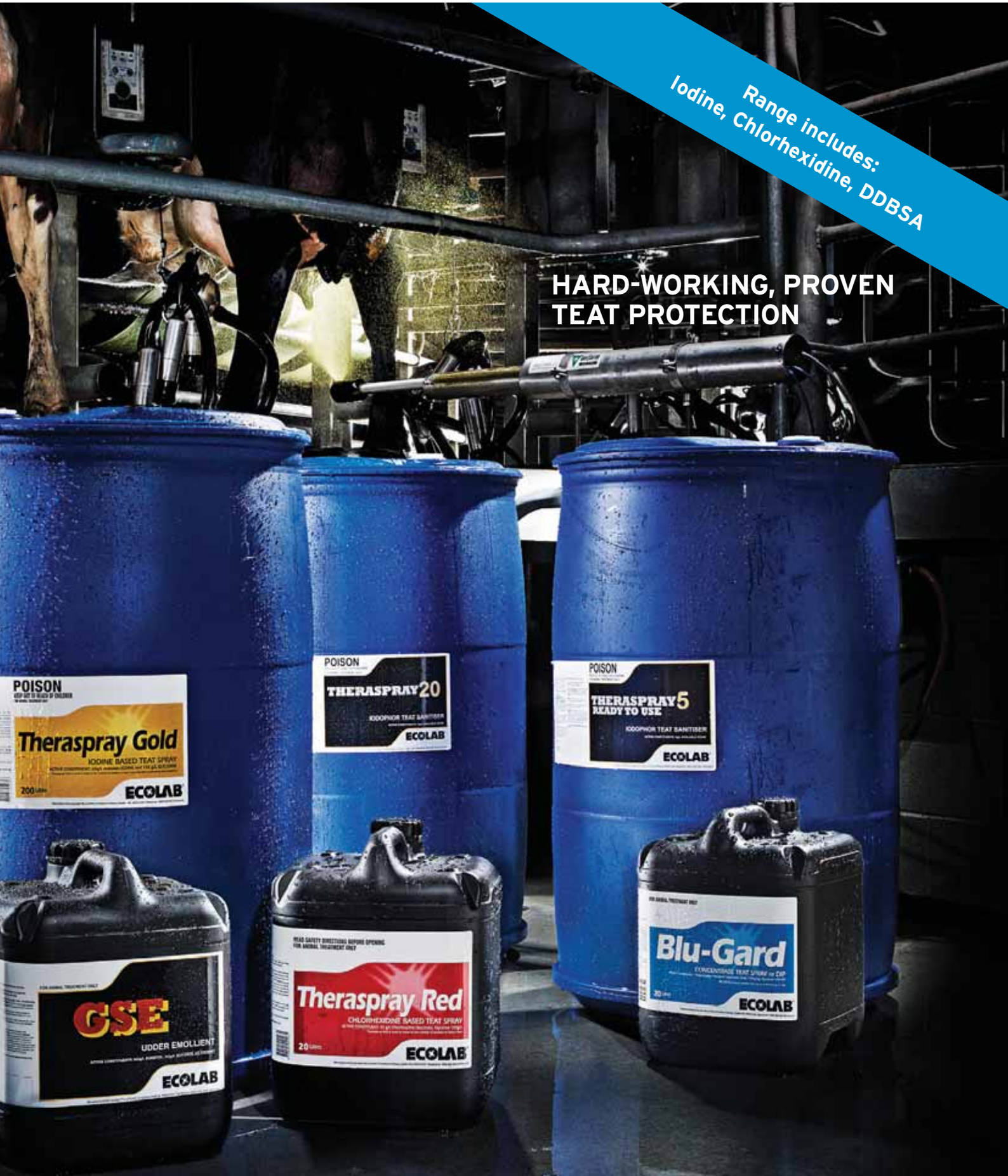
The half-time promotion was just part of Legendairy's presence at the match. Etihad Stadium's goalposts, perimeter fencing and grass were decked out in Legendairy signage, while the Legendairy *Milkorade* commercial — one of eight commercials that screened on televisions across Australia in August and September — was played on the stadium screen several times during the match. *Milkorade* promotes milk as the best way to rehydrate and repair muscle after exercise.

"Our support of the VFL finals series was a great opportunity to highlight milk's role in sport and exercise recovery," consumer marketing and communications manager at DA Glenys Zucco said. "We emphasised the message that milk and flavoured milk contain an ideal balance of fluid, carbohydrate and electrolytes to help refuel muscles and replenish what is lost in sweat."

Mr Davis said: "For milk to strongly link with footy is a great thing because we have a healthy product linked to sport. To have the coverage through a major sport like footy is really good."

For more information visit website <legendairy.com.au>.

The four half-time contestants get ready to face off while appearing on the Etihad Stadium big screen.



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Making her mark in dairy

FOR 18-year-old Tahlia McSwain, dairyfarming is in her blood. The fourth-generation dairyfarmer runs Boallia Creek Dairies at Busselton, Western Australia, with her father Kingsley McSwain and mother Judy Watkins, who is the bookkeeper and calf-rearing manager. In all, 600 Holsteins are milked on the 800-hectare property, which has been in the McSwain family since 1930 when Ms McSwain's great-grandfather moved from Victoria to set up the farm with humble beginnings — six Jerseys and 38ha as part of the WA Government's group settlement farm program.

The business has grown considerably since then, and Ms McSwain is already putting her own stamp on it.

"The farm has been my goal for all my life," she said. "It's been in my family. Dad has done what he wanted, granddad did what he wanted and great-granddad did what he wanted. Now I want to add to it."

After graduating from the WA College of Agriculture — Harvey with a Certificate II in Agriculture in 2012, Ms McSwain completed her Certificate III in Agriculture (specialising in dairy production) through the National Centre for Dairy Education Australia at Great Southern Institute of Technology. The education has put her on track to help manage the business as well as bring in improvements to the daily operations.

"We have a new ID system, we've lowered mastitis rates and we've brought in certain people to manage certain areas of the farm," Ms McSwain said. "We have two full-timers and a part-timer, along with Dad, Mum and me. We have a guy who manages pasture while I manage the herd and some pasture. Everybody has their own little bit."

But she is also doing her bit to be Legendairy in the local industry, participating in Western Dairy's South West Young Dairy Farmers group and the Girls Growing Grass pasture utilisation program, two initiatives that target young dairyfarmers.

"Girls Growing Grass is about getting the girls together and learning how we can utilise grass better," she said. "It's a good chance to share ideas with other young farmers."

Ms McSwain has also been busy setting up her own Holstein stud. After claiming top honours in several local shows (including the prestigious title of grand champion dairy handler for WA in 2012), she is also planning to complete a Bachelor of Farm Business Management in the near-future.

Fourth-generation dairyfarmer Tahlia McSwain.

"Tahlia's always been into the stud side," Kingsley McSwain said of his daughter. "She has a keen eye for good cattle. I always said I wanted to be a dairyfarmer but if the kids didn't, it didn't matter. There are plenty of opportunities for them."

Ms McSwain echos his sentiments.

"I do love it because I'm surrounded by so many cows and I get to learn through a lot of hands-on experience," she said.

"I get to work alongside Dad and try to follow and build on what he's done. I just love it. The opportunity was there and I took it."

The generational connection looks like a strong one.

High praise for program

DAIRY Australia's international market scholarship program continues to remain popular across Asia, attracting high praise from participants.

The most recent program involved 16 delegates from China, Hong Kong and Taiwan markets, representing major dairy and food manufacturers such as COFCO, Bright Dairy, Sanyuan, Maxim's, I-Mei and Uni President.

The July scholarship focused on cheese, covering cheese-making, functionality and applications. During the two-week program, the delegates also had presentations on the Australian dairy industry, food safety, raw milk quality and functional dairy products.

Dairy Australia (DA) international market manager Sarah Xu co-ordinated the visit and said the delegates were impressed with the content of the program and how much they learned about the Australian industry.

"Overall the group rated the program 9.6 out of 10," Ms Xu said.

"The feedback from the delegates showed they have learned a lot about the Australian dairy industry, products and export companies. An important aspect of the scholarship is the opportunity it gives our international customers to meet the suppliers of the product they buy, and the delegates were keen to develop deeper relationships with the Australian dairy companies in future.

"Two delegates from China showed special interest in the training program and are in discussion with us to organise training programs for their staff."

Ms Xu said the participants visited six dairy factories and two dairy farms across all regions in Victoria and also had meetings with eight dairy exporters during the program.

"The delegates really enjoy the opportunity to see how everything comes together from the farm to the factory," Ms Xu said.

The DA scholarship program has been running for more than 10 years in conjunction with dairy companies from China, Taiwan and Japan to develop and maintain long-term relationships in these key dairy importing markets. The most recent group included participants in roles across research and development, quality control, product development, sales, marketing and purchasing.

A further 19 delegates from Japan are undertaking a similar scholarship in Victoria, which also has a focus on cheese and has included visits to six factories and three dairy farms.

The Dairy Australia program is popular among Asian students, some of whom show off the mozzarella from their cheesemaking experience.

Melbourne to host top dairy scientists

THE world's top dairy scientists and food technologists will converge on Australia next year when Melbourne hosts two major symposia on dairy science and technology.

Organised by Dairy Australia (DA) under the auspices of the International Dairy Federation (IDF), the second IDF Symposium on Microstructure of Dairy Products and the Fifth IDF Symposium on Science and Technology of Fermented Milk will be held in March. A broad range of topics associated with the development, manufacture and understanding of novel and traditional dairy foods and ingredients will be covered.

The conference will boast keynote speakers from the United Kingdom, Denmark and China.

Dr Alan Mackie from the Institute of Food Research in Norwich, United Kingdom, will speak about microstructure and healthy foods creation; Professor Carl Holt, formerly of the Hannah Research Institute, UK, will look at protein structure functionality; Professor Egon Bech Hansen from the Technical University of Denmark will present systems biology approaches to understanding microbial fermentations and gut-microbe interactions; and Dr Wang Jun from Beijing Genomics Institute will speak about advances and applications of genomic and metagenomic analysis. Dr Jeremy Hill from New Zealand, president of IDF and director of research, science, technology and development with the Fonterra Cooperative Group, will give the opening speech on the big picture of research and how it is shaping the industry.

A broad range of topics will be discussed at dairy science and technology symposia in Melbourne next year.

DA program manager and chair of the symposia co-ordinating committee Neil van Buuren said the event would be a significant meeting of specialists in microstructure and fermentation from across the world.

"The symposia represent an opportunity to pick up ideas at an expert level and to make connections in research and industry," Mr van Buuren said.

"While Australia has hosted IDF technical meetings and an IDF dairy summit in the past, it is the first time we have hosted symposia of this exact nature, so it will be a great chance to raise Australia's international profile and expose the local industry to new technical and product possibilities in this area of science.

"Given our proximity to Asia, it provides the perfect platform for dairy industry scientists across Asia to connect and further develop relationships with dairy peers and potential customers."

Mr van Buuren said the symposia co-ordinating committee was also organising tours of the local dairy industry (including factories and research facilities) and asked registrants to provide areas of interest to ensure a program could be developed to suit all needs.

The symposia committee is also calling for abstracts, with the deadline for author notification November 14 this year.

The conference will be held at The Rendezvous Grand Hotel, Melbourne, on March 3-7. Registration for the symposia is open now, with early bird registration closing on November 28.

To register or for more information visit website <dairysciencecconf.com>.

Dairy Australia
Your Levy at Work

Managing the dairy industry reputation

PEOPLE may not like to admit to it, but everyone is curious about what other people think of them: do people think they are fashionable, good at their jobs, trustworthy, reliable etc? In terms of service organisations such as Telstra, Amazon and Dairy Australia (DA), individual perceptions are generally based on people's most recent experience with the brand, company or organisation. And people tend to share annoyance about poor service with anyone who will listen — just look at Twitter or Facebook on an average day.

On behalf of the dairy supply chain, DA has an issues management framework in place to track public opinion on the industry in terms of dairy products and the way they are produced.

Domestic and international consumers have high expectations and their increased interest and scrutiny requires the dairy industry to demonstrate the integrity of its practices across the whole supply chain. The industry does not need to over-react to general "noise" but it needs to be able to identify when a negative sentiment begins to take hold.

What are they saying about me?

The Legendairy campaign and other industry activities aim to "put money in the bank". If things go wrong, it helps to have a positive reputation based on years of good service and quality products.

The issues management framework's goal is to minimise the occurrence of events or issues that could harm the way the industry is perceived, to make sure the industry is well co-ordinated when responding to any emerging issues and to have a rapid response process in place to prevent an escalating situation becoming a crisis.

DA has managed a number of issues this year and a rapid response team has been mobilised to support the industry. DA's ongoing preparations came in handy in that industry spokespeople were trained and ready to answer technical questions such as "Could this happen in Australia?".

Lessons can be learnt from every issue, incident, emergency or natural disaster and everyone in the industry has a role to play to support and protect how people view dairy and its practices. D

Confidence up but challenges present

By GLEN FISHER*

Dairy Australia
Your Levy at Work

DAIRY Australia recently released a September Update to its *Dairy 2013: Situation & Outlook* publication. Key findings were that while dairyfarmers faced challenges to improve herd condition and reduce increased debt taken on last season, higher farmgate prices and better seasonal conditions had improved the outlook and renewed willingness to invest on-farm.

The international market outlook remains favourable at the time of writing (see article on opposite page) with commodity prices still at historically high levels and buyer activity continuing to reflect robust demand, especially from Asia.

In early September, 340 farmers who participated in the February National Dairy Farmer Survey were re-contacted to update any changes in their attitudes and outlooks.

Confidence levels among Australian dairyfarmers improved significantly: the proportion of farmers surveyed feeling positive about the future climbed from 44% in February to 73% in August. In general, improved farmgate milk prices, a lower Australian dollar and better seasonal conditions across most dairying regions combined to lift confidence; however, there were some localised factors influencing confidence levels in regions outside the south-eastern states.

The entry of Murray Goulburn into New South Wales's fresh drinking milk market boosted NSW dairyfarmers' confidence, and northern NSW suppliers suggested that the new competition was increasing average farmgate milk prices. Further north, farmgate pricing and marketing-related issues for Queensland's farmers suppressed the improvement in confidence, and in the west, relatively higher feed input prices contained the improved sentiment for Western Australia's farmers.

Another key finding, on top of improved confidence levels, was an improved outlook also for on-farm investment intentions: 40% of surveyed farmers were planning on-farm investment (up from 29% in February), and investment areas included fencing, laneways, shedding and, in some regions, machinery (WA) and dairy plant (Tasmania).

Table 1: Australian Dairy Industry profile of 2012-13 season

	NSW	Vic	Qld	SA	WA	Tas	Aust
Production (milk — M lts)	1071	6039	458	536	337	760	9200
% of AUST total	12%	65%	5%	6%	4%	8%	100%
Number of registered dairy farms	731	4284	518	268	160	437	6398
Average production per farm (milk — 000 lts)	1465	1410	883	2000	2104	1739	1438
Number of dairy cows (000 head)	196	1,079	93	90	56	137	1650
Average herd size (cows)	268	252	180	336	350	314	258
Average yield per cow (litres)	5274	5611	4827	5733	6181	5309	5525
Typical farmgate prices ($/kg MS)	6.45	5.05	7.33	5.42	6.37	5.16	5.41
(cents per litre)	46.4	37.8	53.6	38.3	45.0	40.2	40.2

Since the update survey was conducted, market signals have remained broadly positive, particularly in the south-east, where good rainfall has delivered positive irrigation allocations, grain prices have moderated slightly and farmgate milk price step-ups have been announced by the major companies. These developments should sustain sentiment and support on-farm consolidation.

Stable growth in the domestic market is also supporting the industry and continuing to deliver volume and value growth across the major dairy product categories. Per capita consumption of total dairy in Australia held firm through 2012-13 at about 300 litres in milk equivalent terms, with the population growing at nearly 2% per year: rising consumption of both drinking milk (up from 106.1 to 107.0 litres) and yoghurt (up from 7.4 to 7.6 kilograms) offset relatively flat cheese and butter consumption.

Australian milk production for July/August declined 4.1% on July/August production for 2012. On a year-to-date basis, with the exception of northern Victoria where production remains 1.5% above prior season levels, all states and regions have seen production decline. The figures contrast sharply with the improved seasonal conditions, lift in dairyfarmer sentiment and firm increases in farmgate pricing.

Overall, the slow start to the 2013-14 season through to the end of August largely reflects the lingering effects of the 2012-13 season for farmers across Australia's dairying regions. Farmers in northern NSW and Queensland, in particular, have been experiencing more challenging conditions in the current season, with inadequate rainfall and hotter and drier conditions. However, across most south-eastern dairy regions, rainfall and temperature levels have been generally more favourable for pasture growth and crop production.

The Australian Bureau of Agricultural and Resources Economics and Sciences (ABARES) expects increased yields in Victoria and South Australia following favourable crop development conditions. However, production is expected to be down in Queensland and NSW. As a result, supply concerns in the northern market are putting upwards pressure on feed grains, with prices at a premium to those in southern markets.

Consequently, Queensland and NSW producers may find feed input availability and costs remaining less favourable, and they are likely to remain more vulnerable to continuing drier conditions. Yet, where conditions have remained more conducive, there is the chance that further moderation in grain prices could still flow through and support milk production later in the season.

This issue traditionally provides a brief statistical profile of the industry for the recently completed season with a number of key farm facts as shown in Table 1.

Much of the data above comes from the *Australian Dairy Industry In Focus 2013* publication available from the Dairy Australia website, <www.dairyaustralia.com.au>. The September *Dairy 2013: Situation and Outlook* update can also be downloaded from the website.

Contact: Glen Fisher, industry analyst — Australia, email <gfisher@dairyaustralia.com.au>.

International market delivers rewards

By JOHN DROPPERT*

Dairy Australia
Your Levy at Work

THE international market remains a rewarding place to sell dairy products. In contrast to recent years, the lower Australian dollar-United States dollar ($US) exchange rate continues to provide a boost to Australian dollar returns, while commodity prices remain at elevated levels despite some signs of weakness and continuing expectations of an eventual correction.

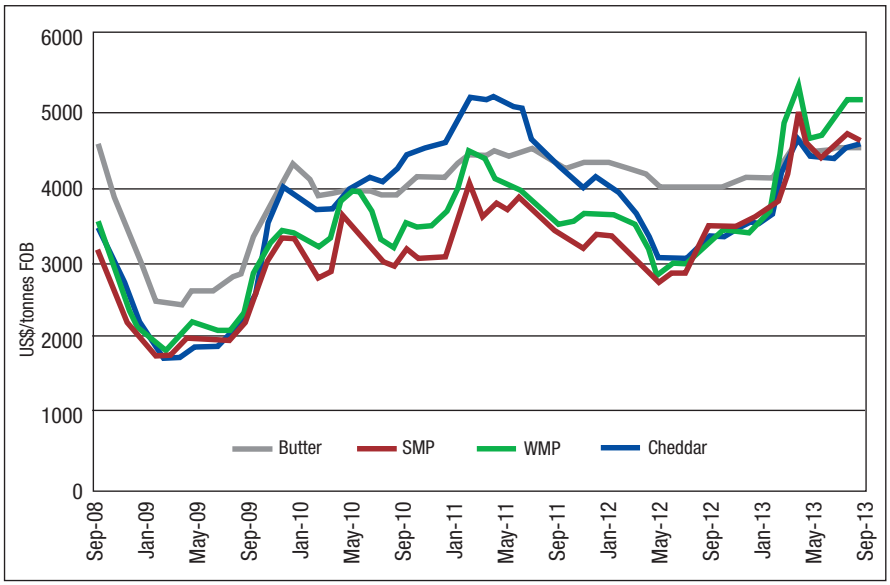
Prices on the GlobalDairyTrade (GDT) auction platform have eased only slightly through September and October, with the weighted average decreasing 1.1% in this time. Whole milk powder (WMP) continues to trade above $US5000 a tonne, having eased 1.3% after a late August surge, while skim milk powder (SMP) has followed a contrary pattern, increasing 2.6% overall despite significant weakening through September. Fats are steady to higher, with butter up 4.6% since August and anhydrous milk fat (AMF) prices 1.5% higher.

Taking a year-on-year perspective, the comparisons are stark: the weighted average price for products traded on GDT is currently up 44% relative to October 2012, while the total product volume sold at the most recent event was 18% lower than the same time last year (reflecting Fonterra's push into higher-value products and, likely, also increased sales outside the GDT channel).

Demand-related drivers have emerged as supporting the current market dynamic as continuing price resilience defies a strengthening global — particularly New Zealand — production outlook. Most notably, Chinese purchasing activity is keeping WMP prices at levels above US$5000/tonne as a significant Chinese production shortfall leaves steady growth in local consumption to be met with imported product. Shipments to China are up 24% in volume terms for 2013 to August and 25% in value terms.

Russian buyers have also been active in butter and SMP markets, importing an extra 60% and 47% by volume respectively in the year to July. Russian buying has supported premium pricing for butter from those plants approved for supply by Russian authorities, although as the window for shipment before the holiday season closes, this activity is expected to reduce. In the case of other, more price-sensitive markets such as the Middle East, Africa and parts of South East Asia, activity has been more subdued and dairy substitution strategies are a re-emerging concern.

Figure 1: Global dairy commodity prices



Prices of key dairy commodities in Western Europe have spent much of the northern summer tracking above their international equivalents, but with strong late-season milk production in many member states, internal European Union prices are falling and, in the case of some products (particularly SMP), the EU is re-emerging as a competitive supplier to the world market. Shipments to July are up 1.2% in volume terms, though year-to-date milk production still lags behind 2012 by 0.9% despite a 2% increase for July. The European Commission says it expects a firm continuation of the current late-season recovery, with milk production expected to finish 2013 up 0.3% on last year, growing a further 1.1% in 2014 (to about 147 billion litres).

NZ's season continues to progress well, with Fonterra indicating production was up 5% for the four months to September. With the intakes close to peaking at the time of writing, cold weather has slowed milk flows slightly — even as North Island farmers are being warned to carefully manage pasture quality, given the abundance of feed in paddocks. With pasture growth having slowed suddenly in September, some South Island farmers have reportedly been forced to feed out silage they had earlier harvested. Many in the Canterbury region are also dealing with damage from a severe wind storm in September that put up to 800 irrigators out of action, threatening to curtail pasture growth if conditions dried out.

So far, however, these challenges have had little material impact on full-season expectations, with the latest forecasts suggesting likely growth of 5-7% compared with 2012-13. Fonterra has confirmed that some milk has been transported to the South Island for processing, due to capacity constraints at its North Island plants.

US data releases have been held up by the government shutdown; however, some local analysts are arguing that the most recent United States Department of Agriculture outlook for 1.3% growth may be too conservative and that 2% is a more likely outcome. Corn prices are certainly at lower levels than where they peaked this time last year, and an emerging turnaround in Californian milk production (which recorded the first year-on-year increase in August for more than 12 months) indicates that the US is likely to maintain its increased presence on export markets, even as domestic sales volumes recover.

Contact: John Droppert, Dairy Australia analyst, email <jdroppert@dairyaustralia.com.au>.

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Top international speakers headline conference

KEY POINTS

AUSTRALIAN DAIRY CONFERENCE

- ✔ When: February 25-27, 2014
- ✔ Where: Geelong, Vic
- ✔ What: Array of top speakers, social events, farm tours

AN ARRAY of top international speakers headlines the Australian Dairy Conference to be held at Geelong, Victoria, in February.

The conference will celebrate success in the industry and provide inspiration for farmers about how to achieve and hold onto that success.

US rancher **Trent Loos** will open the conference and will challenge every farmer in the audience to take control of the image of farming in the wider community. Mr Loos, from Nebraska, was horrified to discover about 12 years ago what some people in his home town were saying about farmers, so he did something about it.

His initial forays into the local media led to his own radio show that is now broadcast on more than 100 stations across the US.

Gary Corbett operates one of the largest dairy farms in the US, milking more than 30,000 cows — but it's much more than a farm. It is also a tourism venture — described by some as the Disneyland of dairy — with a philosophy of letting people see exactly how it is run and to taste its products. Mr Corbett is committed to sustainability on all fronts, aiming to ensure his enterprise will prosper for many years to come.

Conference delegates will get the chance to hear from Mr Corbett twice as he describes his philosophies around ensuring the dairy industry has a future as well as delving into detail about his effluent recycling program where waste from the cows is used to generate electricity to power 10 barns, a cheese factory, a cafe, a gift shop and a maze of child-friendly exhibits and also to produce fuel for its 42 delivery trucks.

Geelong entreprenuer Frank Costa.

Nebraska cattleman and 'agvocate' Trent Loos.

NZ Dairy Woman of the Year Justine Kidd.

New Zealand Dairy Woman of the Year **Justine Kidd** works with a large NZ corporate, the BEL Group, that milks 9300 cows across nine farms.

She provides a total business management solution for the group, leading its team of 65 staff. To tackle a human resources issue in the operation, Ms Kidd put in place a staff performance management program called Good, Better, Best. The program won the Human Resources Institute of New Zealand (HRINZ) HR Initiative of the Year award in 2011, beating other finalists KPMG and Sky City Casino.

She is also involved in a project focused on developing governance in dairy farm businesses with a program lead by Dairy NZ and is a shareholder in Dairy CHB, a company that bought and converted its first property to dairyfarming earlier this year.

The conference will also feature another New Zealander, **Dion Tuuta,** who is general manager of a Maori company, Parininihi ki Waitotara, which is Fonterra's largest milk supplier in the Taranaki.

Long-term sustainability of the land and retaining it for future generations are central to Maoris. Mr Tuuta balances the need to preserve the land and produce a profit to create a future for Maori landowners

Heading the exciting group of Australian speakers is Geelong businessman, philanthropist and football club legend **Frank Costa.** Mr Costa built a hugely successful business and reinvigorated a football club by recognising that people had to be at the centre of everything he did. The key was understanding the needs and aspirations of his employees to create a positive work environment and promote an emotional attachment to the business.

Gary Corbett milks 30,000 cows.

Other highlights

The conference will also feature a range of other highlights, including:

- Australian Dairy Industry Council conference dinner, which will be a huge celebration of success in the industry;
- Moo'in Transfer — presentations of advertising videos by school children around a dairy theme, which is always a big hit at the conference;
- Feed Central Young Dairy Scientists Communication Award — another big hit with conference audiences as young scientists from around the country present some of their latest research; and
- Pre and post conference tours, which will explore the best in dairying from Western Victoria.

Registrations

Australian Dairy Conference 2014 registrations open on November 30. Many opportunities exist to be sponsored to attend this prestigious event, with all eight of Dairy Australia's Regional Development Programs (RDPs) offering bursary packages for attendance.

Many of Australia's milk processor companies also offer packages to assist their suppliers attend. Dairyfarmers interested in attending should talk to their RDPs or milk processor about these.

The Australian Dairy Conference board has also announced a strong incentive for farmers to register and pay by December 30. An early bird discount of $200 per person will be available to all those booking and paying by this date.

Contact: Website <www.australiandairyconference.com.au>, conference organiser Esther Price Promotions, phone (08) 9525 9222 or email <esther@estherprice.com.au>.

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Kiwis develop simple rotary robot

By WILFRIED WESSELINK

KEY POINTS

ROBOTIC ARM

- ✔ Robotic arm being developed for existing rotaries
- ✔ Connected to ACR
- ✔ Uses time-of-flight camera

AN ENGINEERING company and some dairyfarmers in New Zealand are developing a simple robotic system for existing rotary dairies. The system aims to assist farmers, not replace them.

The robotic system is being developed by Scott Milktech Ltd (SML), which is a joint venture between Scott Technology Ltd (61%) and Milktech Ltd (39%) established in 2008. Milktech Ltd is jointly owned by John Wilson, a dairyfarmer and chairman of Fonterra; Murray King, a dairyfarmer and chairman of the New Zealand Livestock Improvement Corporation (LIC); and, John Fegan, who provides recruitment services in the agricultural sector.

"Automation and robots are one of our main activities, and we knew that NZ dairyfarmers were interested in further automating rotary parlours," chief executive officer of Scott Technology Ltd, Chris Hopkins, said.

The team is aiming to make a system that fits in existing rotary dairies and is suitable for NZ pastoral farming operations with batch milking processes.

Mr Hopkins would not divulge exactly how much had been invested in the development but said it was in the "millions of NZ dollars".

Scott Technology Limited is a NZ-based, listed engineering company. It specialises in the design and manufacture of automated production and process machinery. Its products vary from cooking, refrigeration and laundry systems to honey separators, automated slaughterhouse equipment and high-temperature superconductor (HTS) systems. "Our equipment capability range extends from fully automatic production lines to standalone equipment units to meet the needs and flexibility of lean manufacturing," Mr Hopkins said.

Rob Wilson: "It all comes down to accuracy and speed."

Four pairs of fingers

The robotic arm is being tested and developed on a Waikato farm, Rangitata Dairies, with an existing rotary dairy that has automatic cluster removers. The platform continues rotating during the whole process.

In its rest position the milk cluster hangs upside-down on the cord of the automatic take-off and a ring keeps it in position. In operation, the arm of the robot moves to the milk cluster and the tool or 'hand' of the robot, which has four pairs of fingers on the outside, grips the four individual stainless steel teat cups simultaneously. Then the robot arm is drawn in, moving to the left while it turns up the milk cluster and stretches out again to move the cluster between the hind legs of the cow and under the udder.

The camera on the tool then detects the tops of all four teats and each cup is individually lifted and attached in order: front left, front right, rear right, rear left.

Placement on somewhat narrow teats seems to be no problem, because during attachment to individual teats the tool is moving to the right or left. The robot arms moves with the rotary while it performs this task.

"The camera on the robot starts by looking at a large generic area measuring a quarter square metre at the back of the cow, then it tries to recognise the udder, and finally it tries to recognise the individual teats," Mr Hopkins said. Once all four teat cups are attached, the robot moves back to the rest position of the cluster at the next stanchion and starts the process again.

Tail deflector

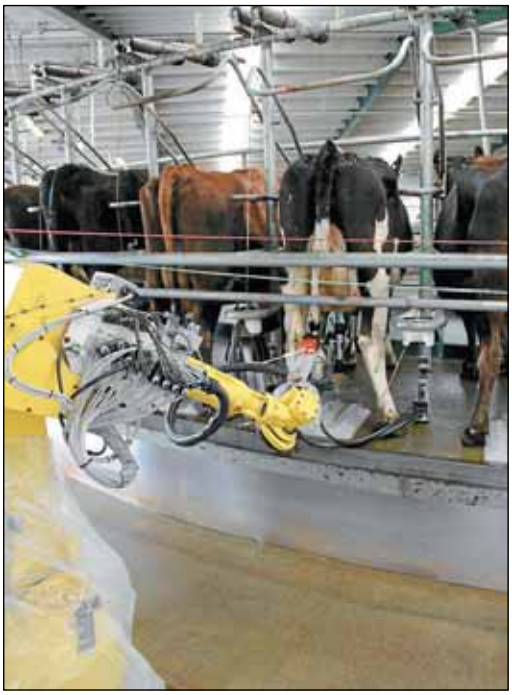
To make sure the tail of the cow is not hanging in front of the camera or on the teat cups, a tail deflector is installed for the whole dairy. The tail deflector is a metal bar bent like a double hairpin. It catches the tail and during cupping keeps the tail aside.

The robotic system only attaches teat cups; it does not (pre)check milk for quality or other factors. Under the system, this should be done separately by a person or electronically by the milking system.

The SML robot system uses a standard industrial six-axis, three-turning-point, 50-kilogram payload robot. The robot is linked to a Mesa 3D time-of-flight camera. The system has proprietary vision and analysis software developed on a C++ platform. Currently, a yellow Fanuc robot ▶

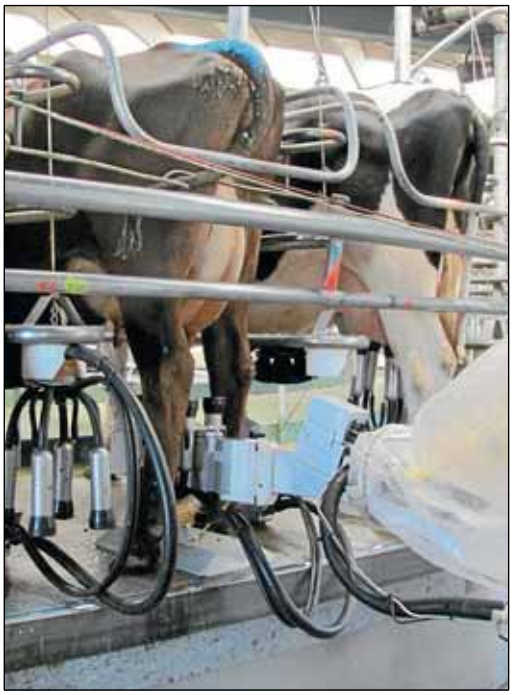
The milk shed and holding yard at Rangitata Dairies.

The new robot hand that has been developed in New Zealand.



LEFT: With its hand upside-down, the robot grips the teat cups.

RIGHT: At left, a milk cluster in the rest position, while at right the robot attaches a milk cluster.



◀ of American origin is used. This robot will be replaced by an orange Kuka robot of German origin. "The Kuka robot is faster at tracking, which on average saves two to three seconds per cow," Mr Hopkins said.

Currently the robot needs 12-22 seconds (on average 15 seconds) to attach the four teat cups to a cow.

Existing rotaries

The SML system can be installed in new and existing rotary dairies of various brands. Modifications may be necessary to optimise the teat cups' rest position. The dairy needs to have automatic cup removers, an automated drafting system to separate cows, access to compressed air, power and an internet connection for diagnostic purposes.

The system has been designed for external rotaries because these are the most common in NZ. "As long as teat cups can be attached through the hind legs, the system would also be available for inside rotaries," Mr Hopkins said.

The SML system is designed for rotaries with 50 to 120 units. With 120 units, two robots and one person should do the job. In that situation the maximum capacity for each robot will be 240-300 cows an hour when average connecting takes 15 seconds per cow.

The optimal size of a rotary depended on the speed and costs of a system and would be 50-80 units, with one robot for 500-600 cows, Mr Hopkins said.

"Our robot is meant to assist the farmer, not replace him," he said. "We do expect that there will be a person around to keep an eye on the milking process."

Patents

The system has been granted four patents. Mr Hopkins said an objection had been lodged against some of these patents by DeLaval.

Distributors

Mr Hopkins said he expected the system would be commercially available by late 2014 or the beginning 2015, first in NZ. He said he expected it would cost somewhere in the $A220,000-$440,000 range, depending on the sizing and modifications needed to the dairy. He said he expected that in NZ the system would pay for itself in four to five years.

"First we will try to sell three to five systems here in NZ and gradually increase that number," he said. "Instead of selling it, we might lease it out."

Once any teething troubles have been resolved, SML will offer the system to the rest of the world. "We will not distribute the system by ourselves because we and our current distributors do not know enough about dairyfarming and milk equipment," he said. "We will look for distributors that offer the required service."

He said he had been contacted already by several companies in Europe and North America that would like to become distributors. It could be possible to buy a system with or without a universal basic robot.

"In NZ we will probably sell the whole system, but why should a farmer in Germany buy the Kuka robot from NZ when it is manufactured in Germany?" he said.

Substituting the Kuka with other robot brands would be difficult, according to Mr Hopkins. The system is optimised for that specific robot, and using another brand would make the process slower. D

**Wilfried Wesselink can be contacted at <www.wesselink.com>.*

Chris Hopkins: "Our robot is meant to assist the farmer, not replace him."

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Here what farmers who have installed the system here in Australia are saying:

"I wouldn't be operating dairy now if I didn't have the MooMonitor system" **Graeme Verrall, Meningie, South Australia**

"There is no way I'd go back to visual heat detection. It gives me peace of mind. I would say it is 99% accurate" **Tom Cochrane, Pyree, NSW**

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Tas conversion aims for low-cost dairying

By WILLIAM VALLELY and CARLENE DOWIE

KEY POINTS

DAIRY CONVERSION

- ✔ Tasmanian Midlands properties developed
- ✔ New dairy to allow increased herd size
- ✔ Features automated feeding and walkover weighing

Robert and George Rigney are aiming for the efficient production of milk from grass.

The dairy with its huge curved sweeping roof that improves ventilation.

IN THE space of five years George, Robert and Allen Rigney have gone from crutching and marking to milking and calving. For some, the transition across livestock spheres can be a tentative one, but the Rigneys, from Cressy, Tasmania, have barely broken stride.

The family milks 1700 cows on two properties converted from mixed farming and have recently commissioned a second dairy with the view to increase their herd size to 2500.

The 60-unit rotary dairy features huge precast concrete pillars and walls and a massive sweeping curved roof to allow more space and air flow.

George Rigney said it was designed and built by a New Zealand company Barfoote Construction, which used local subcontractors to do the work. It took 15 weeks to construct.

The process was streamlined and as the dairy was built to a contract price was also economical, George said. It was also durable and would be long-lasting.

The Rigneys have opted to keep the dairy simple. It has an Allenby rotary platform and Delaval milking plant.

The only technology included is an individual feeding system with walkover weighing and autodraft. This allows the Rigneys to feed to each individual animal's body condition score based on their 10-day average weight. The system uses the National Livestock Identification Scheme electronic identification ear tag to identify the animals.

The dairy also features a round yard with a water-driven backing gate that cleans the yard as it moves behind the herd.

The Rigneys are currently milking a herd of 550 first-calving heifers through the dairy. This takes about 2.5 hours with two staff.

The futuristic dairy may be a sign of things to come for Tasmania's northern Midlands.

A bundle of dairy conversions are under way in the area, which are designed to take advantage of a $300 million investment by Tasmania's four major processors — Tasmanian Dairy Products, Fonterra, Lion and Cadbury (Kraft) — at their factories.

The investment will increase capacity at the respective processing facilities, creating a higher-demand for year-round milk.

The new dairy is part of a double-dairy conversion plan by the Rigney family, who moved out of mixed farming to create economies of scale and develop a sustainably profitable business going into the future.

Underpinning their move to dairy was their access to water.

The Rigney family are part of a privately funded irrigation scheme — the Macquarie settlement pipeline — which draws water from the Poatina power station re-regulation pond.

The scheme provides 13,000 megalitres to 12,918 hectares of farmland and has been a crucial driver behind the Rigneys' increased milk production.

In 2008 — their first year of dairying — George and Robert produced 1090 kilograms of milksolids per hectare, which rose to 1450kg MS/ha in 2012.

"The reason for going into dairy was to achieve the capital appreciation on our land and to have a sustainably profitable business going into the future," George said.

Robert said it was a way of making the best return on the water bought from the pipeline,

Water has turned traditional grazing land

The curved yard features a water-driven backing gate that cleans the yard as it moves behind the cows.

into country not dissimilar to the dairy plains of Deloraine or the north-west coast of Tasmania.

The Rigneys background in mixed farming has helped them develop their pasture-based system, which utilises water and produces efficient, grass converting cows.

"We knew that we could grow a lot of grass because we used to grow grass seed crops, which is exactly the same sort of grass we're growing out here," George said.

Robert said they used to run prime lambs and saw how they were fattening up on the grass seed, which encouraged them to explore the possibilities of dairy.

A trip to the Canterbury Plains in New Zealand confirmed their initial convictions.

"Our global positioning and rainfall is very similar to the Canterbury plains in NZ — we are a little further north," George said.

"It was very similar over there as it is over here so we saw no reason why we couldn't grow as much grass as what they were doing."

Upon returning from NZ, the Rigneys developed a dairy business model, which would effectively use the land and skills at their disposal and give them economies of scale.

George and Robert's budgeting was focused on converting a medium-sized beef, sheep and cropping farm into a large-scale dairy, with a focus on cost of production.

"We knew so long as we could keep the cost of production down, we could ride out the cyclical troughs and take advantage of the peaks," George said.

"If you can make money or break even during a bad year then every other year you should be making money."

For the Rigneys it was not about how many cows, but how efficiently they produce milksolids.

With the aid of irrigation from centre pivots and 500 millimetres of annual rainfall, they aim to produce 22 tonnes of dry matter per hectare per year.

The Rigneys artificially inseminate with New Zealand KiwiCross.

"Because we're a pasture-based system they (NZ dairy cows) are well renowned as being very efficient converters of pasture into milk solids while still retaining their fertility," George said.

He said they look for high breeding worth (BW) bulls that suited their system without trying to spend too much money.

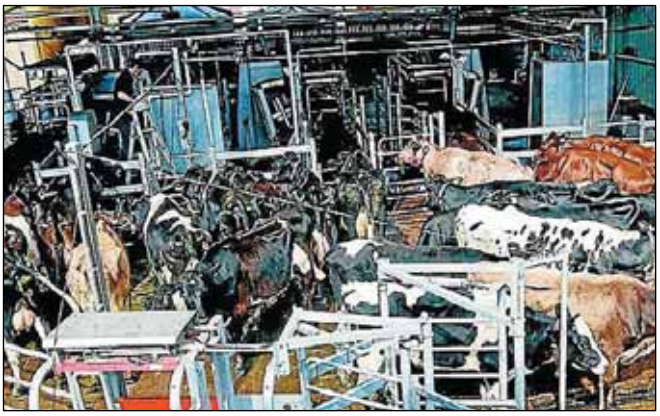
The Rigneys feel their location at the northern Midlands of Tasmania is ideally placed to take advantage of the developing dairy industry in the State.

"Companies (Lion, Fonterra and Tasmanian Diary Products) are investing money into their own factories so they're going to need milk," Robert said.

"They (processing companies) can only get so much milk from the north-west.

"They're going to have to find it from somewhere, whether that's people doing their own conversions or people doing share farming."

Tony Wilson, Applegrove, The Risk, north of Kyogle, in his new 24-hour robotic dairy, which has reduced labour requirements and is expected to boost production.



Cows move through the Wilson family's new robotic dairy at The Risk, north of Kyogle.

Robots help drive for efficiency

By SHAN GOODWIN

ROBOTIC DAIRY

KEY POINTS

- ✔ Farm unable to expand land area
- ✔ Robots and individual feed provide expansion opportunities
- ✔ Year for system to established

THE introduction of robotic milking and the construction of a state-of-the-art dairy on the Wilson family's Northern Rivers farm is paving the way for production increases where purchasing additional land and increasing herd size is not an option.

By having more time to feed their herd optimally and better manage each cow on an individual basis via in-depth computerised analysis, the Wilsons say they can obtain the improved efficiencies critical for the survival of smaller family dairy operations today.

Tony and Jillian Wilson and sons Nic and James milk 200 Holsteins and Holstein-crosses on 80 hectares at Applegrove, The Risk, north of Kyogle in northern New South Wales.

They have switched from an 11-a-side double-up herringbone system to three Lely Australia computer-controlled robots, with the new dairy kicking off in May.

It's a trailblazing move: their robotic dairy is only the second in NSW and 20th in Australia, and with a price tag of $200,000 for each robot plus hefty costs for new dairy infrastructure, it was a big investment in an industry facing tough times in terms of costs rising faster than returns.

However, Mr Wilson, who is also the deputy chairman of Lismore-based dairy co-operative Norco, said by taking advantage of all that technology had to offer, farmers could cement a solid future in dairying.

The "24-hour factory" has taken the Wilsons from needing two people to spend seven hours each a day milking to having only a fraction of those labour requirements — and apart from limited monitoring and robot maintenance and floor wash-downs, nobody would be required in the dairy for any length of time once teething issues had been sorted.

The cows are averaging 2.3 milkings per day, producing an average of 25 kilograms (the equivalent of about 24 litres of milk) per cow per day.

They are fed 4-5kg of dry matter on an eight-hour rotation between three feed options: feedpad between 5pm and 1am; ryegrass between 1am and 9am; and access to a second ryegrass area for the remainder of the day.

Cows also receive 1.5-9 kilograms of mixed-grain pellet, determined by the system's computer depending on how much milk each cow gives.

The plan is for production to lift by 15% — half of that at the cost of additional grain and fertiliser.

"Norco agronomist Bill Fulkerson is training Nic and James in electronic pasture measurement so we ensure we are feeding the right amount to encourage movement through the system," Mr Wilson said.

"It's all about getting the most out of your cows and your farm, and that's going to be easier with less time taken up milking."

Naturally, cow education is a big part of the process and the Wilsons are still needing to muster their cows to some degree to have them move through the robotic dairy.

"It's hard to break the habit in cows of milking every morning and evening and we expect it to take a year before things are running completely smoothly," Mr Wilson said.

Each cow has a responder around its neck that activates a computer when it enters the dairy.

In-line sensors measure and record traits such as milk fat and protein levels and yield, along with detecting any abnormalities in milk and diverting it if required.

Two sorting gates in the dairy allow automatic drafting for herd health and artificial insemination and direct cows to their feed options.

The modern dairy also features a revolving Lely Luna brush for back and head scratching, which Mr Wilson says is a "must-have". Cow comfort, he said, was a key component of productive dairying.

Farm laneways have been constructed around another two computer-operated gates that sort cows too early to be milked from those that are ready, depending on the time each one has been away from the dairy.

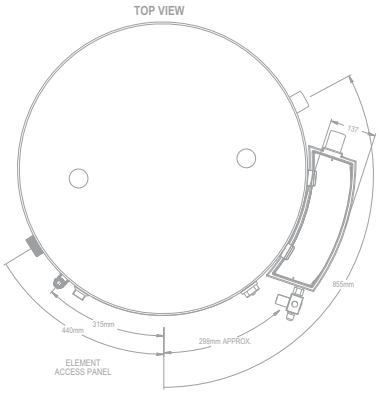
Mr Wilson said once things were running smoothly, he would consider low-key educational and tourism options.

"We'd like to do our part to bridge the disconnect between the city and farms," he said.

wilson

Dairy Hot Water Heaters

RAPID FLOW AUTOMATIC DAIRY UNITS



All units are fitted with adjustable thermostats and supplied with tip to toe anodes. The range of units available allows for the correct choice to be made to suit all cleaning programs: as a rule of thumb, 25 litres per set of cups per day.

Wilson have available four flexible options depending on your requirements eg. the traditional copper cylinder with colorbond case, ranging to the premium stainless steel cylinder with polished stainless steel outer case.

The Rapid Flow unit is available in 12 sizes from 315 litre right up to a generous 2000 litre unit. Rapid Flow dairy water heaters are designed to deliver a flow rate of approximately 180 litres per minute of hot water at a temperature of between 94-96 degrees celsius.

Tip to toe anodes included

Wilson leads the way in dairy water heaters

Option Code	Cylinder	Outer Case
COCB	Copper	Colorbond
COSS	Copper	Stainless Steel
SSCB	Stainless Steel	Colorbond
SSSS	Stainless Steel	Stainless Steel

- polyurethane foam Insulation for minimum heat loss
- 50mm sludge fitting
- copper or stainless cylinders
- colorbond or stainless steel outer case.
- tip to toe anodes standard
- solar adaptable
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IQ clusters speed up milking

KEY POINTS

NEW CLUSTERS

- ✔ New clusters speed milking to 120-130 cows/hour
- ✔ Prevent contaminants entering milk line
- ✔ Part of staged shed renovation

A WEST Gippsland farming couple have been investigating ways to achieve faster milking without the need to outlay for a major extension to their shed. Rob Marshall and his fiancée, Jenni, are currently milking 256 cows (mainly Holstein Friesians with a few crosses) at Lardner, near Warragul, in west Gippsland, Vic.

Mr Marshall grew up on a dairy farm at nearby Drouin South and moved to the present property in 1980 from milking at Yannathan. The farm covers 67 hectares and in the past year they have been leasing a further 60-odd hectares.

They milk on a 32-double-up herringbone shed with cluster removers that were fitted four years ago. "The reason we were looking for faster milking was that the old clusters we were milking with were relatively lucky to do 80 to 90 cows an hour," Mr Marshall said.

After investigating the options and holding discussions with the team at Westfalia Warragul, they tried two WestfaliaSurge IQ clusters for two months in March/April last year on a "try or send back" scheme. Mr Marshall said he was so impressed with them that the couple fitted out the whole shed at the end of June.

Rob Marshall with one of the WestfaliaSurge IQ clusters that he says have made milking faster.

120-130 cows an hour

"We now do 120-130 cows an hour, with cleaner milking," he said. "Previously the clusters tended to leave milk in some quarters — you could tell by looking at them. The IQs are taking the milk out of all the quarters and that is alleviating the risk of mastitis.

"We still have to work on that for another season, but it has certainly improved our cell count. We've been able to maintain premium milk with Gippy Milk."

The WestfaliaSurge IQ Cluster from GEA Farm Technologies is designed to move milk from each quarter with a minimum of turbulence, for faster milk-out. In addition it has four separate guide chambers to prevent teat-to-teat cross contamination.

The IQ Cluster has a new vacuum control design to keep contaminants out of the milk line. A small stainless steel ball located in each guide chamber of the bowl blocks the flow of air when the cups are not attached to the teats, so most unwanted material is not sucked into the milk line. Plus, if the cups are kicked off during milking, the vacuum automatically shuts off to prevent contaminants entering the milk supply.

The couple share the milking and have a milking assistant who works five days a week. They have ambitious plans to build up to 320 cows during next year and up to 400 the following season.

"We'll need to upgrade to 20-units-a side for that," Mr Marshall said. "We've been renovating the shed in stages. We fitted the new IQ clusters then about six weeks later we upgraded to a WestfaliaSurge variable-speed vacuum pump and new jetters.

"We reduced the vacuum gradually — in steps. It's a much quieter shed now, with no squawking from the clusters."

The flexible area of the short milk tube on the IQ liner has been almost doubled to improve the ability of the cluster to hang properly under virtually any udder size or shape. That better alignment helps to optimise milk flow and reduce liner slips and squawks. Farmers who are using them say that the IQ Clusters are lighter and easier to use.

Increased efficiency

The measures the couple have taken recently have removed the urgency to extend the shed.

"The way prices are — and money is tight — this has been a very economical way to upgrade our efficiency in order to increase the herd size," Mr Marshall said.

"We are not heavy feeders — we give the cows three kilograms per day of wheat in the bail and we work on profit per hectare rather than real high production."

They make their own hay and silage. "We make mainly silage, with very little hay here, because of the local climate," he said.

"As the herd increases we may go to pit silage and a contractor." D

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New SW Vic dairy sunken treasure

KEY POINTS

SUNKEN ROTARY

- ✔ Dairy features sunken platform
- ✔ Make easy access for servicing
- ✔ One operator can milk 350 cows an hour

RUSSELL Cumming's new dairy at Toolong, near Koroit in south-west Victoria, is like a sunken treasure.

After deciding to move from an old herringbone to a new rotary system, Mr Cumming and his brother Colin opted for a 44-unit Milfos International model that features a unique sunken-centre-platform design.

"It was a very competitive price and simple to operate but what I really liked was the idea of the sunken interior," Mr Cumming said.

"It makes it much easy to access for servicing.

"The milk lines, pulsators and rollers for the platform are easily accessible and out of the way of moisture, which means they should last longer."

The new dairy is the first of its type to be installed in the region.

It was built and installed by the Terang & District Co-Op, which is contracted as the sole agent for Milfos dairies in south-west Victoria.

After viewing four or five different dairies, Mr Cumming also visited New Zealand to inspect the Milfos system in action before making the decision.

A Milfos iDuro Rotary Platform with a single beam and nylon roller system was installed, along with a Milfos iConveyer Milking Machine.

Milfos iCR Intelligent Cup Removers and the new cow restraint system went in in conjunction with the cluster drop-down that allows the cups to pass under the bridge and be raised again at cups-on position.

The cluster drop-down also alleviates any problem with cows getting caught up in the clusters and milk tube when entering or exiting the platform.

The Cummings wanted a teat spray system that would allow it to operate as a one-man shed so the Milfos iPUD On Platform Teat Spray system was used.

This allows cows to be automatically teat-sprayed 10 seconds after the cups are removed, using only 15 millilitres of teat spray.

Russell Cumming stands on the sunken platform of his new rotary dairy.

While it can be used by up to four operators, the speed of the system allows all 350 cows to be milked by one operator in about an hour.

"It's a lot quicker than what we had so there has been a labour saving," Mr Cumming said.

Because of rising power costs, the brothers fitted variable-speed drives on the milk pump and also the blower vacuum pump. This will achieve substantial savings in running costs in the dairy.

It has been an almost seamless transition from the old system to the new.

The Cummings' sharefarmers Mark and Kristin Harwood and the 350 cows they currently milk have quickly adjusted to the new system.

"Within a week at least 90% of the cows had settled down and are fine with it," Mr Cumming said. "We'd never had any experience with a rotary dairy but it is easy to operate and easy to get into."

The Cumming brothers decided to install the dairy after buying a neighbouring farm two years ago and consolidating the two properties.

"We wanted it to be big enough to be viable," Mr Cumming said. "When we merged the two farms the existing dairy was effectively at the end of the property so we wanted to centralise it and have the capacity to milk more cows.

"Mark was share-farming on the other property and he came over and was keen to milk more so we needed a new dairy."

The combined farm now covers 210 hectares and they hope to increase the 350-strong herd to 400 in the next few years.

The Cumming family has been farming in the area for nearly 50 years.

The new dairy was built on the site of the original farm's 15-a-side herringbone, and while a new shed was built, some of the existing infrastructure was redesigned into the new complex.

Mr Cumming said the decision to buy the adjoining farm was paying off as they increased equity in the property and turned it into a "good functional dairy".

"It's a bit different to other dairies but it suits us nicely," he said.

The building and concreting were completed by the Terang Co-Op and the yards were linked into the existing setup with ease, showing savings could be made by utilising existing infrastructure.

Article supplied by Terang & District Co-op, phone (03) 5592 1555.

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Feed systems could set 'designer' diets

KEY POINTS

FEED SYSTEMS

- ✔ Some cows in herd always get higher quality pasture
- ✔ Individual feed systems allow for adjustment in grain fed
- ✔ Grain ration could be varied

The FutureDairy team has discovered that the grazing and milking routines of cows influences the state of pasture that cows access and their milk response to grain.

RESEARCH by the FutureDairy team suggests that individual feeding systems can be used to customise individual cow's grain-based supplement according to their access to pasture. While the research was designed to better understand feeding in automatic milking systems (AMS), the findings could also be applied for conventional milking systems where individual feeding is available.

FutureDairy researcher Dr Cameron Clark said that pasture availability to individual cows in an automatic milking system was different from conventional milking systems.

"With a conventional dairy, the whole herd leaves the paddock to be milked, and all of the cows arrive at the next break after milking across a timespan of up to three hours," he said. "Cow order through the dairy is quite consistent, based on their dominance position in the herd.

"So the first cows through the dairy will always have access to fresh pasture while the later ones to be milked will always arrive to depleted pasture at the new break."

It is very different with an AMS where cows voluntarily leave the paddock to be milked and then arrive at the next break at varying times of the day and night. Rather than moving to the dairy in a single mob twice a day, they move individually or in small groups, anytime throughout the day and night.

Dr Clark said that AMS farmers had observed that some cows learn when the next fresh break becomes available each day and move to the dairy accordingly.

"In theory, those cows have almost ad lib access to fresh pasture, while those that arrive at the new break up to eight hours later will be accessing relatively depleted pasture; there will be less available to them and the quality will be lower as the leafy material will have been eaten by earlier cows," he said.

This could also have implications for the digestion of grain-based concentrates fed at the dairy as the stability of the rumen is affected by the timing and quantity of forage and grain intake.

"We wanted to better understand the grazing behaviour of cows in an AMS and find out if we could customise an individual cow's grain-based supplement according to their access to pasture and increase the herd's overall feed conversion efficiency," he said.

The FutureDairy team found that a small proportion of cows (less than 10%) in an AMS consistently accessed either fresh or depleted pasture, confirming observations

Individual feeding systems could be used to adjust a cow's diet according to her access to quantity and quality of pasture.

from Australian AMS farmers that some cows learned to time their movement based on the time at which a pasture allocation opened.

However, the research also revealed that about half the AMS herd accessed fresh pasture and depleted pasture on the same day. FutureDairy research has also shown that the consistency with which cows accessed fresh and depleted kikuyu pasture influenced the milk production response to grain-based concentrate.

"Our findings suggest that when cows are fed more than five kilograms of dry matter a day of grain-based concentrate and access inconsistent levels of kikuyu pasture depletion, the milk production response to grain-based concentrate decreases," Dr Clark said. "Current work is relating these findings for cows offered ryegrass.

"As all AMS have individual cow feeding systems, the timing that cows access pasture could be used to differentially feed cows to increase feed conversion efficiency.

"This could be done each day, according to individual cow data collected by the AMS. The next step would be to evaluate whether the benefits of this approach would outweigh the costs."

In conventional milking systems, farmers may consider adjusting the ratio of protein to energy according to the individual cow's milking order, as cows typically graze pastures in layers from the top to the bottom with the first cows arriving at a break typically accessing greater protein and lower fibre than the last cows to arrive at an allocation.

"The ration for the cows that enter the dairy towards the end of the milking session could be adjusted to compensate for the lower quantity and quality of pasture that is available on their arrival at the paddock," he said.

This approach — designing the diet for individual cows — is referred to as differential feeding.

"Individual feeding systems in both AMS and conventional dairies open up the opportunity for a variety of approaches to differential feeding," he said. "In theory, feed inputs could be optimised based on a variety of criteria, such as pasture access, expected milk production, body condition score and profit.

"It is early days and, while the applications look exciting, we definitely need to determine which, if any, will deliver profitable results." D

Contact: Cameron Clark, mobile 0477 324 206 or email <cameron.clark@sydney.edu.au>.

Werner Schmidt from Milkaware in the United States with organisers of the South Gippsland Dairy Expo, Noel Gregg from the Strzelecki Lions Club (which organises the expo) and secretary Deanne Kennedy.

Grant Williams and Daryl Smethurst, who both own dairy farms at Athlone, and Mr Williams's farm worker Ian Alkemade were looking at a Wopa Australia cattle crush, set up for trimming cows' feet.

Range of equipment on show at expo

Information about a range of machinery and equipment for the dairy industry was available at the South Gippsland Dairy Expo held at Korumburra, Vic, in September. Wild weather conditions didn't deter farmers from taking the opportunity to see the latest offerings from companies.

JEANETTE SEVERS reports.

LEFT: Brett McKnight, who has a dairy farm at Stony Creek, Vic, with Mark Le Page of Windmill Agriculture talking about the latest equipment from John Deere.

RIGHT: Looking around at the South Gippsland Dairy Expo while on short-term work placement on local dairy farms were Longerenong College, Vic, agriculture students Ashlea Hughes and Kallan Young. They have nearly finished the first year of their course and were enjoying working on dairy farms in the district.

LEFT: Shawn Hollingworth, a biological dairyfarmer at Koonwarra, Vic, with Lindsay Davies and Adam Handley of Brown's Stockfeeds. Mr Hollingworth routinely gets his pasture and silage sampled and tested by Mr Davies on the Near Infra Red Online Analyser. Imported from Germany, the analyser tests pasture quality, moisture, protein, metabolisable energy, nondigestible fibre, water-soluble carbohydrates, lignin, simple sugars and fat, resulting in the relative feed value or total digestible nutrient value of the grass. "The results will customise a dairy ration to optimise grain feeding, pasture conversion efficiency and feed utilisation," Mr Hollingworth said. "This will enable me to produce more milk. It takes the guesswork out of feeding the cows. It also looks at the pasture grown for silage to estimate what would be the best date to cut it for silage."

RIGHT: Graeme and Jenny Cope, dairyfarmers at Fish Creek, Vic, flanked by Simon White and Paul Maliphant of Farm Automation Australia. Mr and Mrs Cope have been using the iDairy mobile software since 2009 and were finding out about the recent upgrade in herd management software that allows shared automation with the dairy feed system and identifies cows that need or are under veterinary care. The software is suitable for smartphones, tablets and personal computers. It is also compatible with rotary and herringbone dairies, including the Copes' dairy.

RIGHT: Dairyfarmers Matt Wilson, Poowong, Vic, and Dougal and Campbell Scott, Inverloch, Vic, were discussing all things dairy and checking out the latest in Kawasaki equipment at the Wonthaggi Motorcycles exhibit.

Milk Aware CEO Bradley Doak, whose team finished building this display only days before the South Gippsland Dairy Expo. It is a full swingover herringbone operational system with Larsen Pneumatic Stalling with new componentry. "The system is now totally air-driven to give the dairy back its pneumatic capacity," Mr Doak said.

Useful equipment for around the dairy

The Australian Dairyfarmer takes a look at some of equipment that can help in and around the dairy to save time and/or money.

Chiller alarm

NEW Zealand dairyfarmer David van Bysterveldt has had to cope with the problem of getting a milk grade for excessive milk temperature or having milk collection refused because someone forget to turn on the milk chiller during milking.

"When it was just us milking, there was never a problem," he said. "Now that we have other herds on other properties, we're having to rely far more on staff and sometimes mistakes simply happen.

"The problem doesn't stop at the farm; it can cause all sorts of issues for the dairy company. Sometimes the milk from just one farm's collection can affect hundreds of thousands of litres."

With the assistance of a local electronics engineering firm, Mr Bysterveldt and his son Ben designed and prototyped a system that was developed and tested in farm dairy working environments. Encouraged by the results, Mr van Bysterveldt arranged for the system's manufacture and commercialisation, the result being the JustCool Chiller Guard System.

"I wanted something that was simple and affordable and easy to install," he said. "All we really needed to know was that the chiller was in fact turned on during milking, and that it was still turned on once we'd finished the milking and had left the shed."

This set the basis for how the JustCool was designed and works. The system consists of a small, standalone wall-mounted control box, typically installed in the dairy's machine room.

Clip-around current-sensing clamps from the control box are placed around one of each set of electrical phase wires supplying power to the vacuum pump and chiller unit. The current sensing information is monitored and interpreted by the JustCool controller.

When electrical power is sensed going to the vacuum pump controller at the start of milking, the JustCool controller detects this and starts monitoring power to the milk chiller. If after about 20 minutes of milking the controller sees that there is no power flowing to the chiller, or that the chiller has not run for long, it will raise a brief but audible alarm to alert milking staff to check the chiller.

At the end of milking — once the milking plant has been shut down — if the chiller is off or has not been running for at least 20% of the milking time, the JustCool will generate an audible alarm that will sound for 30 minutes to alert the farmer to turn on the chiller.

Clip-around current sensing clamps from the control box on one of the phase wires supplying the chiller unit and one of the phase wires supplying the vacuum pump. The JustCool controller monitors the current and raises an alarm if none is detected.

Mr van Bysterveldt said the beauty of the system was that it was simple to install, was affordable, was maintenance-free and targeted the most common problem a farmer was likely to experience with milk chillers: "forgetting to turn them on".

The JustCool system retails for about $950. An optional SMS alert costs about an additional $400.

Contact: phone 0431 879 196 or website <www.grazetech.com.au>.

Information supplied by Roger Martyn for Grazetech.

Mobile herd management system

LELY has introduced a farm management system for mobile devices called the Lely T4C InHerd.

Chief executive of the Lely Group, Alexander van der Lely, said Lely T4C InHerd was a modern farm management system that enabled farmers to check where their attention was needed most.

The tools would help farmers to act accurately by coaching them to do the right action, at the right time and in the right place.

Mr van der Lely said the Lely T4C InHerd mobile management system provided farmers with more flexibility and control. It provided a special mobile system for organising the work flow among staff and checking their progress.

T4C InHerd has captured Lely's best practices in terms of how to run a robotic farm developed across more than 20 years.

The system has been tested with more than 100 farmers. Its features include:

- a clear overview of where actions are needed;
- all necessary information being available;
- allowing actions to be set straight away; and
- continually monitoring work progress and results.

Every farm with Lely Astronaut milking robots, whether Astronaut A2, Astronaut A3 or Astronaut A4, is able to use Lely T4C InHerd.

The Lely T4C InHerd platform features eight tools that can be downloaded. These tools are:

- FarmBeats — shows the actual herd and robot performance of the farm compared with the average for the last week.
- Today — shows which tasks need to be done based on scheduled tasks and measurements by different Lely products that are connected to T4C.
- Cow — provides data about reproduction, feed intake and milk production of individual cows.
- SystemToday — shows which checks and maintenance tasks a robot needs based on scheduled tasks and measurements by the sensors of the robot.
- Signals — warns if 10 cows have no milk time at one teat or the dead milk time exceeds the settings in T4C.
- HowTo — explains step-by-step how an action should be done. This is the farmers' personal trainer on the job.
- FarmNotes — makes fast and efficient communication possible between InHerd users within one farm.
- FarmSetup — is the function by which user accounts can be created and edited for the different InHerd users on the farm.

The Lely T4C InHerd tools are available at Google Play and the Apple App Store and feature a free demo mode which can be used for an unlimited time. The demo mode works with fictitious data. By activating a three-month free trial, farmers with a Lely Astronaut milking robot can try the tools in practice with their own T4C data. This functionality depends on the availability of the latest version of T4C 3.2.9.

Contact: Lely, website <www.lelyt4c.com>, phone (03) 5484 4000.

Article supplied by Lely.

Rubber matting

THE installation of purpose-designed rubber matting has solved a problem with an ageing rotary platform on an East Gippsland dairy.

Paul and Emma Osborn milk 500 Holsteins and crossbreds on their 113-hectare property at Tinamba, Vic, sharefarming for Paul's father, John, and an uncle, Graeme. They've been there since 1999, milking on a 44-unit rotary. They have run-off blocks at Newry and Heyfield, both of 60ha, and almost all the land is irrigated from Lake Glenmaggie.

The Osborns had been experiencing a problem with the 23-year-old rotary platform with worn footholes and deteriorating concrete in the cows' standing areas. In places it was getting down to the reinforcing mesh.

They were advised by a local company to treat it by filling in the hollows with resin, epoxy and sand grit, all of which was done pre-Christmas 2011.

"Initially it looked like it would work okay but soon the surface started to blister," Mr Osborn said. "It was drilled out and refilled. Still, within a month the grit flattened and the cow standing areas kept deteriorating."

In the drying-off period in June 2012, cows were slipping and skating as they entered to feed in the bail before calving. It was a nervous and stressful time for both the cows and the dairy's operators. The Osborns lost at least three cows before they had to stop feeding the springers and changed to lead-feeding in the paddock.

Amid the frustration, Geoff Hague at Hico Herd Improvement Co-operative at Maffra, Vic, told them about Studflex rubber matting and delivered one standard-sized mat for a week's trial to see if it would do the job.

Paul Osborn inspects the rubber matting that has extended the life of his rotary dairy.

Hico is the local dealer for GEA Farm Technologies, the supplier of Studflex.

"The cows never baulked and it seemed like the answer," Mr Osborn said.

In the first week of December last year they fitted Studflex R sheets to all the remaining stalls. These are standard pre-cut sections for rotary stalls, designed especially for Australian rotaries. The sheets are 1.7 metres long, 0.65m at the inside of the rotary, 0.75m at the outside of the rotary and 24 millimetres thick.

The Osborns employ one full-time worker for milking and farm work. "It took about 2.5-3 hours to screw them all down in between milkings, and we brought in extra labour to help with that first milking — just in case," he said. "As it turned out, we didn't need them.

"It has made an enormous difference. The cows are obviously comfortable standing on it, and we've had not one issue of slipping since then."

The area manager for GEA Farm Technologies in Gippsland, Mark Haymes, said Studflex rubber matting was durable, dimensionally stable and cow-friendly. "This rubber compound offers high grip and comfort, sound absorption and excellent softness. The cows become calmer and quieter when standing. There are Studflex options for all areas of the milking shed," he said.

Studflex is also available to fit herringbone sheds with sheets that have two sides with straight edges and two sides with interlocking edges. Those sizes are 1.74m long and 1.25m wide. Interlocking sloping edges are also available.

For yards and other places around the dairy there are pre-cut sheets with interlocking edges on all four sides, measuring 1.19m by 0.85m.

Mr Osborn said the family were now looking at installing extra interlocking Studflex sheets for the entry and exit points off the platform to make it more comfortable for the cows. "It is also an option for where we stand at cups on and off," he said. "We are currently using conveyor belting but it is a harder compound. The Studflex will be easier to stand on."

Contact: GEA Farm Technologies dealerships phone 1800 789 100 or email <info.auft@geagroup.com>.

Article supplied by GEA Farm Technologies.

Heat detection monitors

TOM and Kyleigh Cochrane milk a mixture of 320 Illawarra and Holstein cows through a 25-a-side herringbone dairy at Pyree, NSW. As year-round milkers supplying the fresh milk market, they found visual heat detection (even with aids such as tail paint) was occupying a lot of their time every day.

Mr Cochrane does his own artificial insemination and was looking for a heat-detection system that would both save time — they were walking around the cows several times a day — and give better heat information.

Mr Cochrane investigated different methods of electronic heat detection and in early May installed a Moo-Monitor system, manufactured by Dairyking in Ireland and distributed by Genetics Australia Co-operative Limited.

The MooMonitor system is specifically designed for heat-detection, with collars measuring the cows' movements three times a second, 24 hours a day.

It is designed to work with pasture-based dairy systems and, as it measures cow behaviour rather than just activity, it is able to accurately identify heat.

Mr Cochrane liked the simplicity and accuracy of MooMonitor and the fact that as it worked on a radio signal installation was simple.

"I'm amazed how many more heats it picks up in the morning," Mr Cochrane said. "There would be probably three heats at night picked at the morning milking compared to two during the day picked up in the afternoon milkings.

"Getting staff to look at the computer and draft out cows in heat was really easy.

"I think collars are much more cost-effective than pedometer systems, and I've found the collars very easy to put on cows and swap from cow to cow as they are pregnancy tested.

"I guarantee I'm ahead on input time and I'm getting more cows being submitted for insemination.

"In terms of accuracy I've just had 26 cows vet-checked: 24 that I wanted pregnancy testing for as they had been inseminated and two whose the collars were telling me the cows weren't cycling.

"The 24 were pregnant and the two that the collars showed were not cycling were anoestrus (not cycling). I don't know if I'd say it was 100% accurate but I'd quite easily say it is 99% accurate".

Cows wearing the MooMonitor heat detectors.

Mr Cochrane checks what time a cow started oestrus.

Contact: Genetics Australia Co-operative, phone 1800 039 047 or website <www.genaust.com.au/>.

Article supplied by Genetics Australia Co-operative.

A two-pond effluent storage system is generally the most cost-effective, environmentally friendly and productively beneficial system that can be installed.

Setting up an ideal effluent system

KEY POINTS

TWO-POND SYSTEM

- ✔ Effluent is a useful source of nutrients and water
- ✔ Two-pond system cost effective
- ✔ Allows effluent to be stored and applied at suitable time

DAIRY effluent is legislated under the State Environment Protection Act 1970 (Waters of Victoria policy 1988). It states that "all dairy effluent from milking sheds shall be disposed of by land irrigation and avoid any pollution to surface waters or groundwater".

This means all dairy effluent, whether dryland or irrigation, must be contained on the property and managed accordingly.

Some basic facts on dairy effluent that are handy to know:

- a 200-cow dairy farm produces on average around 3-5 megalitres of effluent per year, depending on water usage;
- effluent is a useful source of nutrients and water;
- on average a 200-cow dairy farm uses about 10,000 litres of water per day at the dairy shed, depending on shed type and number of milking units; and
- on average 70% of water used at the dairy is for yard wash.

The aim of an effective dairy effluent system is to return dairy effluent to the land in a controlled, sustainable and cost effective manner.

Using the above information on legislation and basic facts, the optimum system and how best to manage it can start to be analysed.

A two-pond effluent storage system is generally the most cost-effective, environmentally friendly and productively beneficial system that can be installed. It allows control over the amount of effluent spread and the timing of spreading. It also allows spreading to meet plant requirements and to avoid runoff and leaching.

The ability to effectively maximise the benefit of the stored nutrients for irrigation of crops and pasture and the option to recycle for yard wash are other positives of the system.

Advantages of a two-pond system are:

- effluent can be stored and applied to pastures and crops to maximise production;
- effluent can be stored and applied when soil moisture is low to maximise production and minimise runoff;
- maintenance work can be done at a less busy time of the year;
- green water from the cleaner second pond is available to recycle for yard washing so storage pond size can be reduced if area is limited;
- fewer problems occur with blocked pipes;
- a standard pump can be readily used for irrigating with second-pond water;
- effluent can be shandied with irrigation water during irrigation season (five parts irrigation to one part effluent is generally recommend);
- a wide range of pump options are suitable;
- a variety of options are available for first-pond maintenance every two to three years;
- clean water is available to clean out the main line; and
- recycling saves on dollars for irrigation equipment.

Disadvantages of a two-pond system are:

- a suitable site that seals properly is required so no effluent leaks into groundwater;
- clay may need to be imported or a synthetic liner used;
- soil testing before excavation should be conducted to ensure this type of structure is appropriate for the proposed site;
- a turkey nest may be required if groundwater comes closer than one metre from the base of the planned pond;
- they take up space and so can reduce grazing area;
- nutrient contents are lower in second pond than in directly applied effluent; and
- more capital is required — $1300-$1800/ML depending on site characteristics.

Managing a two-pond system

Management of first pond (anaerobic) An anaerobic pond provides some degree of treatment of effluent but is not suitable for discharge to waterways.

An anaerobic pond is deep enough to cre-

ate an environment without oxygen where microbes break down organic matter.

It works by bacteria in the pond breaking the organic matter into gases and sludge. How well the bacteria work depends on the temperature, pH and salinity.

When a pond is working well there is no smell, gas bubbles can be seen on the surface and solids can be seen bubbling to the surface.

The size of an anaerobic pond depends on the amount of solids entering the pond, the period before de-sludging and the temperature. All ponds must be constructed on low permeable soils to prevent leaching.

An anaerobic pond needs to be de-sludged (with agitation) every three to five years, depending on design criteria. The sludge component is where much of the nutrient wealth is stored.

The proposed management of an anaerobic pond will dictate the type of equipment used. A stirrer, pump, slurry tanker (to pump sludge of 5-10% solids) or a excavator and muck spreader (to pump sludge of more than 20% solids) may be required.

Management of second pond (storage)

The second pond or storage pond is used to store green water after treatment from the first pond (anaerobic) for a pre-determined period of time before the green water is either used to irrigate pasture or crops or recycled for yard wash.

Green water is stored for four to six months. The length of the storage period is usually determined by soil conditions — for example, when the soil is waterlogged, applying effluent will result in runoff of nutrients.

Storage ponds are sized related to water usage in the dairy, rainfall on the catchment that drains into the pond, storage period and engineering freeboard.

Effluent must be pumped out regularly during the drier period when it is safe to do so and the pond must be empty before the start of the storage period.

There is an array of equipment available to empty a storage pond. The equipment varies in price and how much time input is needed to maintain and run the system.

Stationary (electric and fuel-driven) and/or power-take-off-driven irrigation pumps, stationary and travelling irrigators, and the correct sized irrigation pipes may be required.

Pond nutrient concentrations

More than 600 effluent ponds have been tested in Gippsland, Victoria, in the past four years with little variation in pond nutrient concentrations between second ponds and a large variation between first ponds.

Therefore, testing of individual effluent ponds is recommended if effluent is incorporated into a nutrient budget to get the best use of effluent and the most cost-effective management of a fertiliser regime.

Animal heath issues

Farmers should avoid applying effluent to areas where young stock graze, and implement other Johnne's Disease management practices. It is also important to avoid applying effluent where cows are to be calved, due to grass tetany and milk fever issues. When applying effluent to pasture, having a withholding period of three weeks is a good rule of thumb.

Effluent system safety

Dairy effluent ponds have the potential to be extremely hazardous.

Farm children and employees need to be made aware of the hazards of effluent ponds and particular attention needs to be paid to warning visiting children.

Ponds should be fenced, and appropriate signs warning of deep water or showing relevant hazard symbols are also warranted.

The use of tractors near the ponds should be eliminated or minimised.

For further information see the Agnote 'Dairy Effluent: Building and Operating a Safe System' on the Victorian Department of Environment and Primary Industries (DEPI) website (search AG0444 on <www.dpi.vic.gov.au>).

Article courtesy of the Victorian Department of Environment and Primary Industries publication The Dairy Bulletin.

Effluent used to save water and the soil

By JEANETTE SEVERS

KEY POINTS

EFFLUENT SYSTEM

Effluent reused to washdown feedpad and laneways
Pond aerated with propellor
Second-hand army truck converted into effluent spreader

Simon Park with the propeller built into the pontoon that travels around his effluent pond, stirring the mix. Mr Park estimates he has three years' worth of fertiliser in his pond. In the next 12 months, he plans to disperse the total amount onto his paddocks using a purpose-built truck.

RATHER than viewing it as a useless by-product of the milking process, Simon Park is re-using effluent in expectation of achieving better pastures, better milk production and healthier stock. To this end, Mr Park, a dairyfarmer at Wonthaggi, in south-east Victoria, is making radical changes on his farm.

Mr Park has a history of leading change in efforts to reduce waste on the dairy farm, which has been in his family since 1917.

He milks 320 cows from a self-replacing herd of 600 Friesians on 280 hectares, including 80ha of leased country for the heifers.

The Wonthaggi district, in South Gippsland, is ideal for dairying, with an average annual rainfall of 935 millimetres, although the average for the past three years has been 761mm.

When Mr Park, who has a background in irrigation, was faced with increasing costs, he began to look at how he could reduce his reliance on town water and electricity.

"I was using 20 megalitres of mains water each year, including for washing down the dairy, in the yards and for stock water," he said. "I began looking at the issue of water reliability."

As part of this Mr Park looked at improving the capture of water into an on-farm storage facility. The result is a system that now needs only 25mm of rain for filling.

He was able to convert a drain running through his property into a catchment. "It puts down 100 megalitres a year," he said. "It was just a case of finding a way to tap into it."

Using local contractors, Mr Park cleaned out the drain, built a spillway and installed a pressure pump powered by mains electricity.

The project cost about $20,000 — close to the total amount of the previous year's water bill.

"It has cut our mains water usage by 85%," Mr Park said.

"Although the storage system improvements cost $20,000, I'm not paying about $14,000 a year, because I'm not using as much town water.

"There have been some salt issues with the water quality that I'm trying to work out but the improved storage system has been a positive investment."

The amount of water the system can capture can be reduced in long, hot summers.

Mr Park has also installed a flood-wash system for the dairy yards and feedpad using water from his effluent pond.

"I now have a 12,000-litre flood-wash tank using water from the effluent pond," he said. "Using three taps off the tank, I can disperse 40,000 litres in 15 seconds. Using recycled water for yard washing significantly reduces the farm's total water use."

Mains water is used only to supplement the on-farm storage.

Mr Park also plans to install a 250,000-litre rainwater tank to harvest water from the dairy and other shed roofs to be used to wash down the plant and platform.

Once this is operational, Mr Park said he would need mains water only for emergencies.

With issues of low calving rates, a breakdown in cattle health and a shortened productive life for milking cows as issues to combat in his business, Mr Park has also taken a keen interest on what is going on under his pasture.

This is where his focus on re-using effluent has taken him.

"The more we understand what's going

Simon Park with the effluent spreading truck.

It takes just 15 seconds to disperse 40,000 litres of recycled liquid effluent to wash down the feedpad and laneway into and out of the dairy.

Simon Park milks 320 Friesians on 200 hectares in an intensive operation at Wonthaggi, in South Gippsland, Victoria.

on — in my case in the effluent pond and in the soil — the more we're likely to survive in the dairy industry and in farming," Mr Park said.

"Instead of worrying totally about the stock, my focus is on the soil. We have to be looking at everything on the farm in order to measure and improve the health of the cow.

"I'm trying to set the whole farm up to be self-sustainable and cut down on phosphate and fertilisers brought onto the farm — down to zero.

"I have a couple of hundred thousand dollars' worth of fertiliser in the effluent pond and want to use it. I'm trying to learn when to put the nitrogen, phosphorus and potassium trace minerals back into the soil and the implications of putting it back.

"We buy it by the bag and it's going out the gate in the milk we produce. The soil can't absorb it because all the microbes we need in the soil are dead so they can't help by grabbing the mineral and processing it as it needs to be done.

"We do soil tests but we also need to be doing plant tissue tests to tell us what is in the leaf."

To this end, Mr Park is working with scientists to measure the effect of re-using effluent on his pasture, including the effect on different grasses.

Currently the dairy farm is sown to ryegrass but he is aiming to diversify his pasture next year with the aid of scientific advice. "We rely on ryegrass but it's the poorest pasture we have," Mr Park said.

"Over the next 12 months, we're changing to alternate grasses to ryegrass and I've brought in scientific advice to determine the best pasture mix.

"What I've already noticed is that the cows prefer to graze in the paddocks where I've spread the effluent."

To encourage microbe activity, Mr Park has installed a propeller in the effluent pond to increase its aerobic capacity. The pond is also currently being increased in size and a floating lid is being fitted.

At times he adds seaweed emulsion to the effluent pond, along with sugar, to improve the aerobic and microbe activity.

"The effluent is aerated using the truck but also by using a propeller in the dam," he said. "The propeller stirs up all the solids in the pond.

"I feed the effluent using enzyme-rich additives and sugar to assist the microbes with breaking down the solids. The whole process is designed to encourage aerobic activity."

The effluent is pumped to a header tank, from where it is siphoned into the spreader tank, where further aerobic activity takes place during the spraying action.

The spreader tank, an eight-wheel-drive ex-Army vehicle, was specially bought by Mr Park for spraying the effluent onto the pasture.

"I retrofitted it with a tank and a pump to push the effluent out, got the engine rebuilt and fitted tyres appropriate to going into the paddocks," he said. "It has a 40-tonne capacity so I wanted tyres on it that made sure it could do the job."

The truck allows 100,000 litres of effluent to be moved around the farm in two hours. "Close to the dairy, I can move a million litres on 200 litres of fuel," he said.

"Using the truck, it doesn't take long to move the effluent. It's one of the best investments I've made."

Although this is only his first year of foliar-spraying the pasture in this way, Mr Park has already noticed improved soil mineral balance and soil biology.

"Re-using the effluent in this way provides the necessary phosphate and potassium I need," he said.

"I'm only needing to buy in nitrogen now.

"It takes only 20 to 30 minutes of emulsion time to get into the leaf and roots of plants."

He expects the effluent pond will be working at its optimal level by January 2014.

"I've been doing things as I can, depending on the capital I have available to invest," Mr Park said. D

Tasmanian dairyfarmers Cheryl McCartie and Theo Van Brecht are committed to more sustainable systems, including reuse of dairy effluent.

Committed to sustainability

By LOUISE PREECE

IF THE Australian dairy industry is to capture the flourishing Asian market, then it needs to demonstrate it is "clean and green".

And while most would contend dairyfarmers are already practising sustainable farming methods, Tasmanian producer Cheryl McCartie and her husband Theo Van Brecht say the industry needs evidence to back up these claims.

The couple were presented with the 2013 Tasmanian Dairy Sustainability Award earlier this year, after being deemed to be leaders in the sustainability field. The award is given to a farming business that have demonstrated positive natural resource outcomes, better nutrient and effluent management, good soil and water quality management, and water-use and energy efficiency.

"It is great to have an award like this," Ms McCartie said. "It puts sustainability into the spotlight and gets farmers thinking about it."

She added all of the elements of the award examined proved the couple were "clean and green" — and could also be used as evidence the industry's farmers were sustainable.

The dairyfarmers milk about 450 cows at Ringarooma in the State's north-east.

Having moved from New Zealand to Tasmania in 1996, they share-farmed in a 50-50 arrangement for nine years.

During that time, they upgraded the property's effluent system to boost its efficiency. "The effluent now goes through the irrigation system and onto 34 hectares of pasture," she said. "We were dealing with what was an environmental problem and turned it into a production gain."

The effluent project was undertaken after acquiring a $5000 Federal Government grant but the total contribution on-farm was $25,000.

Ms McCartie said the cost was justified because pasture growth had been enhanced,

which meant less money was then spent on fertiliser and more milk ended up in the vat.

Five years ago, the couple decided to buy that same 217ha property (166ha milking platform) and were able to make some vast changes to the farm, stepping up their sustainability efforts.

Revegetation and fencing-off of waterways was their first priority through a Streamcare project. "A lot of people might have thought we moved over here and fell in love with the fuzzy animals," Ms McCartie said.

"But the flora and fauna was what attracted us to the region, along with the fact it could grow grass."

She describes their property as "undulating to steep" with some flat areas. "Those steep areas are unproductive and we can't have stock there anyway," she said.

Subsequent to those early revegetation efforts, Mr Van Brecht noticed a clear difference in the on-farm furred fauna (quails, platypus, bandicoots), as well as frogs (for which he has a particular penchant).

Next up was an industry project — Nutrient Management and Water-use Efficiency — which looked at soil testing each paddock.

"We are low nutrient users but we learnt how to do a nutrient budget," Ms McCartie said. "And we are now more efficient in irrigation timing."

But the work did not stop there, with the couple going on to take part in a national industry project, Accounting for Nutrients.

"We realised the long lateral irrigation system was not as efficient as it could be," she said.

At the moment, they have a combination of water supplies, including from the river and on-farm storage.

"We lease a dam right now but we have plans in place to build a 300-megalitre on-farm dam, along with two centre-pivots because that type of irrigation uses less water than the long laterals," she said.

It will be a big investment to construct the new dam — Mrs McCartie estimates anywhere between $300,000 and $500,000.

"We can justify this cost because it's going to increase our water-use efficiency and it will increase our irrigation area to 70%," she said.

Pasture growth is up about 12 tonnes of dry matter/hectare while consumption is 9.4t DM/ha.

"There is room for improvement there," she said. "But with the centre-pivots, we will be lifting growth."

Plans are also in place to establish wallaby fencing along the farm's five-kilometre forest frontage. "We would estimate that wallabies cost anywhere from $100,000 to $140,000 in lost pasture a year," she said.

Energy work has also been completed in the dairy shed.

SUSTAINABILITY AWARD

KEY POINTS

- ✔ Effluent turned into production gain
- ✔ Revegetation and fencing underway
- ✔ Plans to improve water-use efficiency

When the couple extended their dairy from a 22-a-side to a 30-a-side herringbone with automatic cup removers, they looked at the effectiveness of how they were using their plate cooler water.

"It ran straight into the effluent pond but now we've changed it so that water is being used it to hose down the yards," Mr Van Brecht said.

The change meant about 40,000 litres of water was being recycled daily.

Quantum heaters have also been connected to pre-heat hot water, saving on power use.

Ms McCartie said it was difficult to pinpoint exactly how much their energy bill had been reduced (because of the carbon tax impact) but they had decreased usage by 50 kilowatts/hour.

Their latest sustainability efforts involve a new natural resource management project, which will allow the couple to further fence off and revegetate seven different areas of the farm (10ha in total). D

Feedpad waste turned into compost

By KATE PRESTT

KEY POINTS

MAKING COMPOST

- ✔ Feedpad led to concentration of effluent
- ✔ Compost time consuming but cheap to make
- ✔ Better for soil than liquid waste

THE installation of a feedpad on a Tasmanian dairy farm two seasons ago was the catalyst for a move to compost making on the farm.

Butler Pastoral, East Ridgley, Tas, is run by third-generation farmer Rodney Butler and his wife Janelle, who have two children: Jasmine, 9, and Ryan, 4.

The farm employs one full-time staff member, while Mr Butler's parents, Carline and Tony, who have lived and worked on the property for most of their lives, are still very much a part of the farm and although retired continue to help out when they can.

The property comprises 220 hectares, 100ha of that being milking area. It runs 450 cows: 230 milkers, Friesian heifers and beef stock.

A concentration of effluent was created after the Butlers installed the feedpad two seasons ago.

"We've been turning that into compost and putting it back on the farm," Janelle Butler said. "We hope to see a significantly decreased fertiliser cost into the future."

There are only a small number of farms making their own compost. This means the Butlers had to spend money on research as well as buying a spreader, a compost turner and a few other things before they got started.

"The compost went out in autumn, and we plan on doing another batch in the spring and another in the summer," Mrs Butler said.

"The compost made in the spring will be put out on the paddocks we cut silage off at Christmas time after our first cut."

Mr Butler said a lot of time went into making the compost but the bonus was that it could be made fairly cheaply at $30-$40 a tonne. "Hopefully down the track we can utilise all the nutrients from our feedpad and put it back on the farm," he said.

"Not only will we be saving money, it's not washing away, so it is a win for everyone."

Before implementing the compost system, the Butlers had a two-pond effluent system for almost 10 years, and pre-dating this, effluent was applied directly to the paddocks.

"We saw the compost as a simple, onward progression," Mr Butler said. "You can put the effluent out straight but you get more value by breeding the bugs up in the compost, which means a better product to put on your ground."

Rodney and Janelle Butler (pictured with son Ryan) have used effluent from calving pads to make their own compost.

Moving forward, Mr Butler said Tasmania would need to use its clean, green image to tap into more specialty lines and achieve better prices.

"I can see farming as being a great opportunity for younger generations," he said.

"It's tough for those without a family farm starting out (but) the big farms are always looking for good people and from there you can buy your own."

To maximise all the ground that is not near the dairy, the family continues to grow fresh-market potatoes and swedes.

"We were growing up to 100,000t of spuds 10 years ago and we still grow a few spuds, but it's probably only about 100t for the fresh market," he said.

Effluent to electricity plan

By TIM CRONSHAW

A NEW effluent processing system could be working on a New Zealand farm as early as next year as a result of a Nuffield Scholarship tour to 21 countries by NZ Meridian Energy agribusiness manager Natasha King. Ms King is the first person from the energy sector to win a Nuffield Scholarship and used the five-month trip she returned from in August to research whether farmers should use effluent to generate electricity.

She said a possible solution had been found but this was being kept under wraps until a cow shed trial was operating. The effluent-processing trial would be carried out on a 1000-cow dairy farm to see if dairy effluent could be turned into a fuel source, she said. "I have taken different bits of different things and am working closely with a Canadian university," she said. "They are streets ahead of us with their biomass production and management."

Ms King said other options had been ruled out. "The main thing I was looking at was whether we can generate gas and electricity as the solution to NZ's dairy effluent issue," she said.

"Methane biodigesters are not a likely solution for NZ. It's unsustainable because we are not going to put maize silage into a digester for €35 a tonne, as we are paying $400/t."

She said green subsidies in Europe were a joke and could not be sustained in NZ, but much of the funding for renewable energy was 50% government subsidised.

Dairy effluent was a problem in other countries and she met an Irish farmer facing $1 million in trucking costs in the next 10 years to get rid of the "slurry" because of high rainfall on his farm.

The concern was that other countries would eventually use effluent disposal as an artificial trade barrier against NZ milk.

Brazil had good effluent management systems with 50-metre riparian planting and farmers had to maintain non-production areas on 20% of their farms.

Ms King said she had also seen a system in India and heard of other techniques that might provide an on-paddock solution for effluent as cow shed material provided only 20% of the total effluent on a farm. She said spreading cow shed effluent through centre-pivot irrigators was a good system but there were many ideas for removing solids and pathogens before placing the water back onto paddocks and using the leftover material as a fertiliser or fire pellet material.

Ms King said several parties were interested in the effluent processing trial and the plan was to prove it worked and then seek agriculture and government funding.

Natasha King: methane biodigesters are not a likely solution for New Zealand.

EFFLUENT AS FUEL SOURCE

KEY POINTS

- ✔ NZ Nuffield scholar looking at effluent plan
- ✔ Effluent-processing trial on 1000 cow farm
- ✔ Methane biodigesters not a solution in NZ applied

Her employer will support her by continuing to employ her during the trial.

Article courtesy of Fairfax NZ News.

Compost system saves dollars and the soil

By ANNABELLE BEALE

KEY POINTS

BIOLOGICAL SYSTEM

- ✔ Focus on soil and using waste
- ✔ Effluent turned into compost
- ✔ Cut fertiliser bills, improved soil

ONE of the first Victorian dairyfarmers to roll out a commercial-scale compost management plan on his property of 550 hectares, Tesbury's Craig Davis, says what comes out of a cow is as important as what goes in.

The winners of this year's South West Dairy Awards Natural Resource and Sustainability Award, which involved more than 330 regional dairyfarmers, Mr Davis and his wife, Tanya, say their transition to sustainable farming has been lucrative.

Working on the principle that there is more to soil than nitrogen, phosphorus and potassium, the Davises have made major changes to their 600-head milking herd at Tesbury, near Cobden, in recent years.

This follows trips to the Netherlands and New Zealand to learn about alternative farming methods that minimise or use waste.

"We throw out 80% of our waste so I thought 'Why can't we make compost for the farm?', because we are one big veggie patch really," Mr Davis said.

"In Europe they use 100% of their waste; in Australia we throw it out.

"I believe there is more in our effluent ponds than any ag department can tell us … when you put it in a compost form, it is readily available for the plant to get working."

The couple have undertaken a seven-year transition to alternative farming, which focuses on soil science and management.

The five-year development of a dairy effluent management system has seen the dairy make at least $40,000 in conventional fertiliser savings annually.

The system uses woodchips, unused or damaged hay and solid waste from the effluent pond in a composting system, in conjunction with a liquid waste irrigation system.

About 2500 tonnes of compost is made each year on the farm and spread at 2.5t/ha with 6t spreaders.

Following annual soil tests, different biological fertilisers are added to the compost at a heavily reduced rate of 10% of a conventional rate because the nutrients are activated at a greater rate.

Craig Davis with some of the compost made on his farm that has improved the soil and pastures.

Mr Davis said the move had revolutionised their farming practices and resulted in significant soil health improvements, a radical drop in fertiliser use, financial savings and the recovery of clover after more than a decade of the property being barren.

"We started seeing clover come back and we haven't seen clover on the paddocks for 15 years — it is unreal," Mr Davis said.

"When we started getting the soil biology working again, what we found was that clover just started coming back. We didn't need to plant it. All of a sudden our roots have grown from six inches to 50 millimetres.

"Our plants and the biology in the ground started working again so once you get clover back in then you have nitrate fixation too."

Mr Davis said they had recorded more than 70 worms in a shovel area, raised soil carbon content, improved root penetration, reduced soil pests and improved herd health.

They have had 40% savings on phosphorus and potassium fertiliser inputs, 90% nitrogen fertiliser savings and 10% reduction in water use.

While there were no major saving in the first year, savings were noted from year two and by the fifth year significant bottom line benefits were evident.

"We use 80% less chemicals on weeds and pests because when you get the biology right, they don't seem to come any where near as much," he said.

However the move has meant a challenging education for the Davises, who said compost couldn't simply be thrown on the paddocks but needed "a new appreciation for your soil" as the biology was complex and science-focused.

It had been a slow process understanding the benefits of effluent waste but one with which it was worth persisting, they said.

The dairy chases the fresh milk market with a split calving season and has 80ha of irrigated land.

They are environment- and production-focused businesses and have increased biodiversity plantings with shelter belts and the removal of willows from the waterways.

This has brought a reduction in nutrient run-off into the Curdies River and increased pasture growth.

The selection of deep-rooted pasture species has improved the grazing regimes on the farm and ensured grazing persisted through the dry period between October 2012 and May 2013.

Gaining value from the nutrients already on farm

By MICK O'KEEFE*

KEY POINTS

NUTRIENTS

- ✔ Many farms have high nutrient levels
- ✔ Manure and effluent great resource
- ✔ Using these way to unlock nutrients already bought

NUTRIENTS drive dairy production, so excess nutrients lost from a farm are literally 'money down the drain' and a lost opportunity for higher yields. Compounding the loss, the nutrients may then have a negative impact on the surrounding environment.

Effectively utilising nutrients on farm can reduce fertiliser purchases and environmental impacts on the surrounding environment.

The Accounting for Nutrients on Australian Dairy Farms project concluded that only 25% of the nutrients imported onto the farm (either through feed or fertiliser) were converted into 'product' that left the farm through milk, liveweight or fodder. The project highlighted clear opportunities for many dairyfarmers to reduce fertiliser applications to high nutrient level paddocks and reduce costs without compromising production, while also attaining a higher net profit. The monetary value of lost nutrient inputs would increase in line with rising fertiliser costs, it found.

The project revealed that of the 37 conventional dairy farms studied around Australia:

- 20% of pasture paddocks had more than three times the level of phosphorus required for optimum plant growth (target Olsen P of 20 milligrams per kilogram);
- phosphorus levels in paddocks close to the dairy were often two to three times higher than in paddocks two kilometres from the dairy;
- all dairy farms were likely to have surplus nitrogen due to conversion inefficiencies, high concentrations in urine and poor storage in soils. Nitrogen was lost with water runoff, through leaching or to the atmosphere. Nitrogen surpluses increased in proportion to milk production;
- the average soil test levels for sulphur were twice the recommended level for optimum pasture production (target KCI-40 of 10mg/kg);
- the average soil test levels for potassium were twice the recommended level for pasture production (target Colwell K of 140mg/kg).

Dairy manure is a great resource. On a daily basis dairy cows excrete manure that contains a large proportion of the fundamental nutrients required to grow crops and pasture. Specifically, dairy effluent is high in potassium and nitrogen.

Dairy cows are unable to convert all of their daily nutrient intake into energy, milk and/or liveweight. The excreted nutrients in manure provide a resource that could be used to replace a small amount of 'trucked-in' nutrients in the form of synthetic fertilisers.

Reusing nutrients from within manure is simply extracting additional value from an input that the farm has already paid for, because the nutrients originated in either imported feed and/or fertiliser used to produce homegrown feed.

Understanding the characteristics and quantity of manure being generated by the farm's dairy herd is a logical starting point for developing management strategies to utilise the resource and ultimately achieve production gains. Manure is the combination of 'dung' and 'urine' produced by an animal. A 600kg lactating cow will excrete 55-60kg of manure per day.

On a daily basis dairy cows excrete manure that contains a large proportion of the fundamental nutrients required to grow crops and pasture.

Manure excreted at the dairy is typically mixed with wash water after cleaning the dairy shed and yards, cleaning chemicals, residual milk post-cleaning the milking system and/or rainfall on the yard. The re- ▶

◀ sulting liquid is usually referred to as dairy shed wastewater or effluent.

The Accounting for Nutrients project investigated nutrient management practices on 43 dairy farms across Australia. One of the on-farm assessments involved analysing manure samples to determine the quantity of nutrients excreted from an average cow in a pasture-based system.

Table 1 shows that an average monthly milking herd of 250 cows will excrete about 39 tonnes of nitrogen, 5.6t of phosphorus and 31t of potassium across the farm per year.

Australian data suggests 10-15% of the daily manure output generated by the milking herd is deposited onto surfaces that drain into the dairy manure management system (for pasture-based dairy systems not incorporating a feedpad). Therefore, the manure management system could capture 6t of nitrogen (N), 0.8t of phosphorus (P) and 5t of potassium (K) per year.

The fate of nutrients entering the manure management system is an important consideration. An understanding of whether nutrients are partitioned with solids in the sludge or remain in the effluent is the key to effective nutrient management and allows farmers to finetune fertiliser decisions.

This knowledge also allows farmers to allocate some monetary value to the nutrients recovered during pond desludging or irrigation, to compare against conventional synthetic fertiliser applications. Placing a monetary or fertiliser equivalent value on the sludge and effluent allows the farmers to consider the most appropriate use of the resource rather than just dispose of it on small area near the dairy and potentially gaining no value (that is, not reducing synthetic fertiliser inputs to the disposal area and/or increasing the percentage of home-grown feed).

Figure 1: Proportions of N, P and K in the effluent and sludge components of a primary anaerobic pond and the proportion of N lost by ammonia volatilisation.

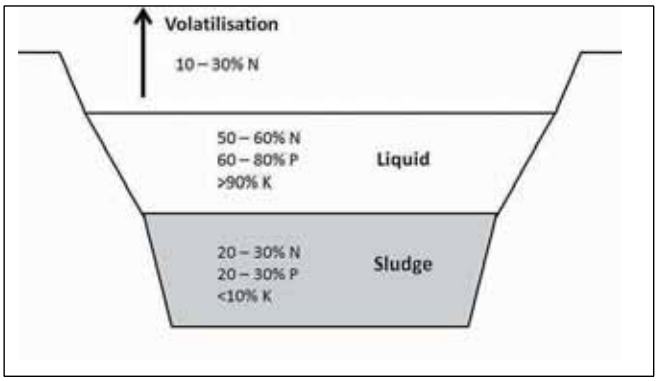

Figure 1 shows that a large proportion of N, P and K in the primary anaerobic pond are contained in the effluent (liquid fraction) compared with that contained in the sludge.

Not all of the nutrients captured at the dairy or stored in the pond system will be available to the crop or pasture. Some nutrients in effluent are in a 'plant-available' form while others need to undergo mineralisation before plants can utilise them.

For example, around half of the nitrogen in freshly excreted manure may be present as ammonia, which is very volatile and most of which escapes into the air. High temperatures, high pH and time in storage increase ammonia loss.

Sludge application trials in south-west Victoria by Ward (2010) showed that:

- first-pond sludge nitrogen uptake by plants over three years totalled 70-83% of nitrogen applied;
- 40-50% of the nitrogen applied was taken up in the first year, 10-30% in the second year and 5-12% in the third year; and
- second-pond effluent responses to the ammonium nitrogen applied were limited to within 5-6 months of land application.

Attributes of primary-pond effluent:

- solids content variable — likely to require specialised extraction and spreading equipment;
- very high in organic matter;
- higher than 25 millimetres per application could lead to crop burning/establishment issues and risk of nutrient loss after rainfall runoff events;
- high concentrations of nitrogen, phosphorus, calcium and magnesium;
- small proportion of nutrients in readily plant-available forms;
- most nutrients in various organic forms that require mineralisation before being plant available; and
- effectively a slow-release organic fertiliser.

Attributes of second-pond effluent:

- low solids content — comparatively easy to pump and apply to land using conventional irrigation equipment;
- a high proportion of nutrients in readily plant-available forms, but nitrogen responses can be relatively short-lived; and
- suited to replacing potassium on hay/silage paddocks and boosting growth of summer forage crops.

Effluent in summer crops

Rainfall over the summer months can be unpredictable, resulting in varying summer crop yields. Applying effluent as 'fertigation' is a practical way of boosting summer crop yields using an existing resource for which the farm has already paid. Utilising

effluent will also draw-down the pond system and create effluent storage capacity for the next winter period.

Trials in south-west Victoria showed that effluent applied to established summers crops including turnips, chicory, forage rape and millet consistently boosted dry matter yields by 2t per hectare, based on an application rate of 25mm (0.25 megalitres/ha), compared with trial plots that had no effluent applied.

To calculate how much area is required to apply effluent or sludge requires knowledge of:

1. the existing soil nutrient reserves of the proposed effluent application area;
2. the concentration of nutrients in the effluent or sludge; and
3. the expected nutrient demand of the crop/pasture to be grown or actively growing.

The main nutrients in effluent such as nitrogen, phosphorus and potassium do not occur in equal proportions; therefore each nutrient must be considered individually when preparing a nutrient budget for land application.

Total potassium per application should be no more than 60kg/ha and no more than 120kg/ha per year.

For effluent, total nitrogen per application should be no more than 60-80kg/ha. However, sludge applications may allow higher rates due to the slow-release nature of much of the organic nitrogen in the sludge. High application rates increase the risk of problems such as nitrate poisoning and mineral imbalances and make less efficient use of the applied nitrogen, as well as increasing the risk of losses to the environment.

If no chemical analysis is available, effluent should be applied at a rate of one megalitre/12ha. This is based on typical pond nutrient data from Victorian dairy farms.

Apply effluent or sludge to paddocks when there is no likelihood of runoff, away from waterways and not on wet soils.

Conduct regular soil testing of the effluent application areas to monitor soil nutrient levels, soil health and, where required, adjust application rates accordingly.

Isolate effluent application areas and restrict cattle grazing for at least three weeks after the application of effluent to pasture or crops. This withholding period will overcome any palatability or fouling issues and allow the plants time to respond to the nutrients. For direct application of sludge to pasture, up to 6-8 weeks may be required depending on the solids content.

Young cattle (under 12 months of age) should not have access to effluent or sludge-treated areas.

Using effluent to germinate summer crops is not recommended as it often has high salt levels, which can burn emerging seedlings.

Adjust synthetic fertiliser applications to account for the nutrients contained in effluent and sludge. If the effluent or sludge cannot meet the demand of the crop/pasture, use synthetic fertilisers to balance that demand.

For example, if the crop is demanding only additional nitrogen, consider applying urea as opposed to a blend that also contains phosphorus and potassium that would exceed the crop/pasture's demand.

Strategic use of effluent and sludge is an effective way to grow additional dry matter utilising resources for which the farm has already paid. Effluent is a great resource that should be utilised, not a problematic waste that needs to removed. D

Sources

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Mick O'Keefe is with the Department of Environment and Primary Industries, Rutherglen, Vic. Article courtesy of Mountain Milk Line.

Research unlocks cow feeding behaviour

By NATALIE NELSON*

KEY POINTS

GRAZING BEHAVIOUR

- Cows grazing pasture spend less time ruminating
- Range of factors can influence grazing time
- Look to reduce this where cost effective

Everything a cow experiences out in the paddock has an impact on the time grazing.

TRIALS conducted by the Victorian Department of Environment and Primary Industries at Kyabram and Ellinbank, both in Victoria, observed cow behaviour during an entire day.

The researchers involved found that where there is a high quantity of quality pasture available, cows normally graze for around seven hours. The rest of their 24 hour day is, on average, spent lying down (seven hours), standing (10 hours) and of this about 5.5 hours is spent ruminating/chewing their cud while four hours is spent milking.

Similar trials in the US and the UK have also looked at feeding behaviour and have found differences between cows grazing pastures and cows housed indoors.

Where animals had access to pasture they spent on average 17% (or four hours) longer eating than those in housed conditions. Cows in Victoria also spend less time drinking, standing and lying down to ruminate than other studies have reported as they spend that time grazing.

Impacts on grazing time

Everything a cow experiences out in the paddock impacts on the time grazing.

Firstly if it is extremely cold or hot the cow will seek shelter. Although cold or heat stress has a real impact on cow physiology, it is actually the time spent sheltering instead of grazing that has a huge impact on intake.

If feed is short, the cows will need to take more bites, therefore spend more time grazing to get the same intake levels than a cow with good feed availability. If the feed is poor quality, again the cow will need to spend more time grazing than a cow on the same length but good quality pasture.

In these situations, total intake is reduced despite the extra effort put into grazing and ruminating.

If a cow has access to a highly digestible turnip crop and then enters the dairy for its grain, the feed throughput will be reasonably quick as it requires relatively little rumination therefore enabling the cow to still graze to reasonable levels.

However, if the cow has come off the feedpad where straw or silage has been fed and is then expected to graze, research has shown that the cows spend less time grazing initially as they are busy ruminating the forages already in their digestive tract.

The cows will often spend longer out in the paddock, but intake may be lowered due to fibre levels and slower gut throughput.

Daily variability

No two paddocks are the same either in quality or quantity of feed on offer. Although supplements will not change dramatically day-to-day, the base pasture might due to the weather.

Intake can drop (or rise) for any given day translating to a drop (or rise) in milk production.

Seasonal variability

Winter and summer are the two seasons where weather and feed quality and or availability are less certain.

In winter, feed may be good quality but there may not be enough. The cows may spend more time huddled down in a sheltered corner of a paddock instead of grazing. Supplementation with forages such as hay is more likely providing a feed and fibre source in the diet. The increase in these more slowly digested forages will reduce rumen throughput.

In summer, cows may seek refuge from the sun therefore spending less time grazing during the day. Offering the pasture allocation at night when it is cooler may need to be considered to limit the decrease in daily feed intake.

Summer also tends to bring about lower quality pastures although the bulk may still be there.

Cows spend longer grazing as long as it is mild in an attempt to get the same level of nutrition compared with when better quality feed is available. The extra grazing time is required because the pasture stems are tougher to harvest.

Silage and other supplements are normally increased in summer especially the addition of protein supplements. These are more fibrous and slower to digest.

Offering high quality supplements may increase production despite the changed grazing times, as the supplements contain more energy and are more rapidly digested.

The sum of the parts

By being mindful of seasonal variation, daily condition variation and individual cows, farmers can get a better handle on why herd milk production levels may vary from day-to-day and between seasons.

This is not to say that production stability should be pursued at all cost, but rather to think carefully about what can be controlled and make sensible decisions based on where it is likely to results in production returns in excess of the cost of dietary changes. D

Natalie Nelson is with the Department of Environment and Primary Industries, Ellinbank, Vic.

Emma Elliott and her mother Erika Chesworth out with the cows on the Little Big Dairy Company, Rawsonville near Dubbo. Photo by Louise Donges

Little processor, big plans

By SIMON CHAMBERLAIN

KEY POINTS

ON-FARM PROCESSING

- ✔ Dubbo farm looks to supply local area
- ✔ Promoting milk as 'single source'
- ✔ Looking at range of products

VERTICAL integration plan by a Dubbo, NSW, district dairy-farming family will see the Central West city boast its own milk-processing plant for the first time in decades.

The Little Big Dairy Company is producing milk from its new on-farm processing plant, incorporating one of the most modern and technologically advanced milk harvesting systems in Australia.

The factory is supplied by the Chesworth family's 800-cow herd, which has previously supplied Lion's Dairy Farmers brand, with milk to be produced just a few kilometres from Dubbo at Rawsonville, New South Wales.

The Little Big Dairy Company is owned and run by Erika and Steve Chesworth, sons Duncan and Campbell, and daughter Emma Elliott and her husband, Jim.

The family has been involved in dairying for more than 100 years, moving the herd to the Rawsonville farm seven years ago from Denman in the Upper Hunter Valley, NSW.

Each day the Chesworth herd produces 25,000 litres of milk for a yearly total of about eight million litres.

Emma Elliot said the new processing operation would produce "single-sourced" fresh milk, bottled on the day it was milked from the cows. The Dubbo dairy would sell homogenised milk in plastic bottles as well as non-homogenised milk in glass bottles. All milk would be pasteurised.

Milk in the glass bottles would be "like milk of years' past with a layer of cream in the neck of the bottle", Mrs Elliott said. "We'll also be producing flavoured milk from syrups we'll make ourselves, as well as a decadent, premium-quality cream."

Producing its own ice-cream line would assist the family company to cope with high milk production surpluses. "It's something that will give our milk products a longer shelf life," she said.

Although Steve Chesworth's brother is a cheesemaker in Muswellbrook, NSW, Mrs Elliott said there were no plans to further process the Macquarie Valley milk into cheese.

The Little Big Dairy Company's products are being sold at the Dubbo Farmers Markets and selected cafes and IGA supermarkets in the city.

The Little Big Dairy Company has employed the description, "single-sourced milk" to highlight that its product is all sourced and produced from its own Macquarie River farm.

"We like to think of single source as our promise to you, ensuring our milk is of the highest quality, traceable down to the very cow that made it," Mrs Elliott said. "We will guide the product from start to finish, from milking through processing and into the bottle."

November 19-20: **Dairy Farmers Milk Co-operative National Convention**
Lorne, Vic — DFMC supplier annual get together
Contact: — Website <www.dfmc.org.au>, phone (02) 8732 5206

November 29: **Dairy Australia's 2013 annual general meeting**
Melbourne, Vic: — The AGM for Australia's peak dairy organisation
Contact: — Dairy Australia, phone (03) 9694 3777, website <www.dairyaustralia.com.au>

January 6-10: **National Centre for Dairy Education Australia All Breeds Youth Camp**
Melbourne — Camp for youth dairy enthusiasts from Australia and overseas.
Contact: — phone 13000 NCDEA (1300 062 332), website <www.ncdea.edu.au/youthcamp>

January 19-23: **International DairyWeek**
Tatura,Vic — Largest annual dairy cattle sale and show in the Southern Hemisphere
Contact: — Robyn Barber, mobile 0418 656 082, phone (03) 9338 9259, email<info@internationaldairyweek.com.au>, website<www.internationaldairyweek.com.au>

February 12-14: **Sungold Field Days**
Allansford, Vic — Field day dedicated to dairyfarming and cattle breeding
Contact: — Phone (03) 5565 3142, email <sungoldfielddays@wcb.com.au>, website <www.sungoldfielddays.com.au>

February 25-27: **Australian Dairy Conference**
Geelong, Vic — Top speakers on issues relevant to all Australian dairyfarmers.
Contact: — Esther Price, phone 1800 177 636, email <esther@estherprice.com.au>

March 27-30: **Farm World Field Days**
Warragul, Vic — Australia's premier mixed farming field days
Contact: — phone (03) 5626 1373, email <office@lardnerpark.com.au>

April 10-23: **Sydney Royal Easter Show**
Homebush, NSW — Main dairy show event in NSW

Diary dates — **To have dates for a major event included in the diary, send information to Carlene and Alastair Dowie. Phone/fax (03) 5464 1542, email <carlene.dowie@fairfaxmedia.com.au>.**

Consolidation: critical part of business cycle

By KERRY RYAN*

think again!

THE current optimism around dairy fuelled by positive milk prices is likely to offer new opportunities for businesses to expand. While it is important growth options are constantly evaluated, experience has taught me that new investment should occur only after careful consideration so an appropriate balance between growth and consolidation is maintained.

Taking growth opportunities is usually the more straightforward choice. A decision to consolidate requires greater discipline — especially when it means resisting the temptation to move towards new horizons.

There are various reasons why consolidation may be the best choice. Industry statistics confirm that in New Zealand there are many operations with excessive debt. Much of this results from land bought at previously inflated values and the accumulated impact deficits driven by drought or trading volatility after the global financial crisis.

These buoyant times will offer a chance for businesses to improve their equity levels. Achieving stronger balance sheets will require patience and commitment but the reward will be a more robust foundation from which to springboard when the next growth opportunity occurs.

My attitude to businesses that have excess debt is it that they need to either "grow into it" or "get out of it".

This is all about selecting strategies to "right size" the business.

Ignoring the need for consolidation and pursuing continued growth invites what I regard as "business cancer" into the operation. It inevitably increases business risk through pressures on people, cashflows and vulnerability to climate and economic volatility.

When this occurs some operators develop a "live-in-hope" mentality. Rather than setting clear targets to drive for debt reduction they are inclined to focus solely on physical performance and hope that favourable markets or economic conditions will rescue them. This relatively "hands-off" style of management can result in the business simply going from crisis to crisis.

A decision to consolidate can be more difficult — especially when it means resisting the temptation to move towards new horizons.

Wherever a surplus occurs it should be committed to debt reduction before it is consumed with new equipment, personal spending or other discretionary choices.

So what are some response strategies?

First is to drive for a sustainable capital structure through clearly defined rates of debt repayment. Discussions with bankers and input professionals will enable calculation of optimum debt levels based on long-term "steady-state" budgets. This in turn will determine the required level of profitability so physical performance and cost structures required for the operation can be quantified.

A second key focus should be to get into the habit of repaying debt. Wherever a surplus occurs it should be committed to debt reduction before it is consumed with new equipment, personal spending or other discretionary choices. The business's reputation and the credibility of its owners will be enhanced by this approach. Conversely, ambivalence and lack of discipline in this area will undermine confidence — especially from bankers. In this aspect of business management actions definitely speak louder than words.

Debt-reduction strategies could include securing the favourable interest rates that have been available in recent years. Committing the savings in their servicing costs additional to principal repayments can be a way to accelerate debt reduction.

Finally, when managing excess debt, the focus should be on that excess debt rather than the total debt. Failure to acknowledge this often results in borrowers wrestling with the burden of their total exposure and banks increasing interest rates and penalising the business through increased margins applied over the total debt.

My view is that lenders could give much clearer signals about where the real challenges lie if they primarily focus on penalising the excess debt.

The 2014 season to date, in New Zealand at least, has been one that just keeps on giving. The grass has grown exceptionally well and so far milk prices are moving in the right direction. This combination offers a classic opportunity to really capture surpluses for consolidation and debt reduction that will create equity structures that ensure profits are the norm, not the exception. D

Kerry Ryan is a New Zealand-based agribusiness consultant available for face-to-face or online advice and ideas. Contact him at website <www.kerryryan.co.nz>.

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% suspect	2% (2/90)	3% (1/37)	2% (2/90)
% identified in standing estrus	97% (67/69)	100% (34/34)	97% (66/68)
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MAI ANIMAL HEALTH

Complex decisions in salmonella outbreak

By ROD IRWIN*

IN THE previous issue of *The Australian Dairyfarmer,* we looked at some of the complexities involved in an outbreak of *Salmonella* on a farm and I will continue the theme in this edition.

In the last edition we looked at the signs of disease — remember there is an initial high fever, then severe diarrhoea. Often the diarrhoea is typical — very smelly, watery, bloody and containing shreds of the inner lining of the bowel, completely stripped away by the bacterial poisons.

Because of the loss of internal bowel lining, the bacteria is free to invade the general circulation and other organs in the animal's body.

The animal's white cells and antibodies attempt to kill invading bacteria such as *Salmonella*, however this bug is difficult to kill. It can go on living within white cells, protected from the animal's immunity, safe from antibodies and antibiotics — so infections can persist after the signs of disease have vanished. These animals are then "carriers". Why is this important?

One worrying aspect of a Salmonella outbreak is that at the start of an outbreak, one doesn't know just how many animals will be affected.

Apparently healthy carrier cows can continue to pass millions of bugs into the environment, especially at calving, so uninfected animals continue to be infected. In other cases, the bugs can live hidden within the lymph glands, but the manure is free of *Salmonella*. These animals can go on to develop the disease during a period of stress.

Both types of carrier make the disease difficult to control or eradicate.

The loss of bowel lining often means clinical cases are critically ill from blood poisoning and dehydration, so treatment must be aggressive: antibiotics, intravenous or oral fluids and electrolytes, and pain relieving, anti-inflammatory drugs. An adult cow may require 30 litres or more of oral rehydration, and valuable calves may need an intravenous drip.

Because affected animals are discharging millions of *Salmonella* bugs into the environment, clinical cases should be isolated from the herd.

Adverse conditions can make an outbreak worse: wet and cold weather, the presence of other diseases, transport, the relative overcrowding of calf pens or calving pads or paddocks, and calving itself is a source of stress for affected and susceptible animals.

It is advisable to culture the manure of early cases at a lab, and test it against a variety of antibiotics in case the bacteria is resistant to the first antibiotic chosen by the vet or farmer.

In addition, culture can yield the "type" of *Salmonella* causing the disease, and this may help with subsequent decisions regarding vaccination.

One worrying aspect of a *Salmonella* outbreak is that at the start of an outbreak, one doesn't know just how many animals will be affected. The disease has the capacity to spread like wildfire in adverse circumstances.

At the start of the outbreak, the question must be asked, "Do we vaccinate the rest of the group or herd in the face of the outbreak?" Farmers don't know whether they are looking at a few isolated cases or whether this will be an extensive and expensive problem.

In cattle, outbreaks are often caused by types called *Salmonella dublin*, *S. typhimurium* or *S. newport*, however there are a large number of other types of *Salmonella* potentially involved. Commercially available vaccines usually contain just *Salmonella dublin* and *S. typhimurium*. Unless the type of *Salmonella* involved is know, the farmer could be vaccinating against the wrong bug.

The decision to take samples of manure for analysis at the start of an outbreak can be a good one.

Don't forget *Salmonella* is also a human disease. As in animals, it causes diarrhoea and severe illness. If a herd experiences a *Salmonella* outbreak, pay strict attention to personal hygiene, especially hand disinfection. If anyone develops an illness during a *Salmonella* outbreak, they should seek medical advice immediately.

If a farmer suspects *Salmonella* in their herd, they should call in their dairy vet. Dairy vets are a great source of local knowledge about this serious disease.

Until next time, good milking. D

**Rod Irwin is a practising cattle veterinarian and herd health consultant based at Warragul, Vic.*

ADHIS AUSTRALIAN DAIRY HERD IMPROVEMENT
The dairy industry's independent genetic evaluation service
Australian Dairy Herd Improvement Scheme

Aiming high with genetic guidance

WHEN it comes to breeding dairy cattle, Tasmanian dairyfarmer George Wagner, aims high. And although he has bred many elite Holstein cows and bulls — as reflected in the August release of Australian Breeding Values (ABVs) — Mr Wagner also monitors the overall genetic improvement of his herd.

"It is always exciting when a bull makes it into the top ranks of the ABV release, and while I love breeding cattle, dairying is also a business so the genetic trends of the overall herd are important too," Mr Wagner said.

He was keen to see his latest Genetic Progress Report, which was available after the August ABV release. It tracks the herd's genetic trends for key traits in the past 10 years.

The 190-cow herd ranks eighth among Holstein herds in Australia for profit and well above the national average for fat, protein and type. But Mr Wagner was most eager to see the results for mastitis resistance and fertility.

The herd has a long history of breeding for production and it is only in recent years that selection decisions have considered mastitis resistance and fertility.

"Selection decisions have always focused on production since Dad started using AI when it first became available," he said. "When the herd was registered in 1968, we started to pay some attention to type traits. But it was only in 2007 that I started using some bulls that ranked well for mastitis resistance and fertility."

George Wagner uses the Genetic Progress Report to monitor the impact of breeding decisions on the herd's genetic merit for mastitis resistance and fertility.

Mr Wagner selects bulls that rank in the top 30 for Australian Profit Ranking (APR). Within that group he looks for bulls that rank well for type, fertility and mastitis resistance, and he avoids bulls that are negative for components.

"The Genetic Progress Report is a great way to see the impact of breeding decisions," he said.

"You can get an idea of how the herd is going for production and type through herd recording and classification results. It's not so easy to see what's happening with fertility and mastitis resistance and that's where I find the Genetic Progress Report very helpful."

The report shows dramatic improvements in the herd's genetic merit for mastitis resistance and fertility since 2007, when Mr Wagner started using bulls that rated well for those traits. "I'm absolutely delighted with the improvement in the herd's genetic merit for mastitis and fertility," he said. "It has really given me confidence that it is possible to breed for both those traits without compromising on production."

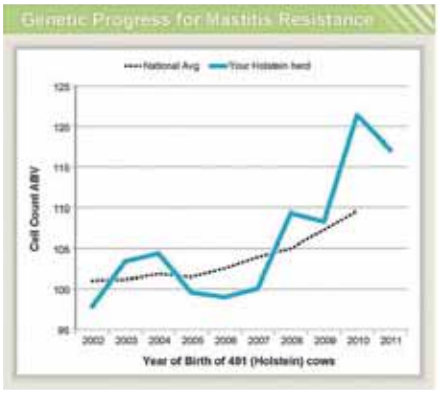
One of Mr Wagner's bulls, Jiffey, is currently the top-ranking Holstein for mastitis resistance and among Australian bulls ranks number 16 for profit with an APR of 225.

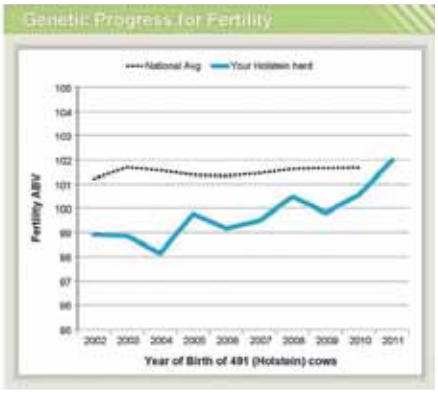
"It was a bit of a surprise to see Jiffey top the mastitis list," he said. "He went into the system before genomics but has since been genotyped and came up really well for both production and mastitis. We are milking three of his daughters and they are all outstanding cows with low cell counts — and none has had mastitis."

The list of the top 20 young genomic bulls includes five bred by Mr Wagner. This year Mr Wagner had 12 heifers genotyped, of which seven made it into the list of the top 50 heifers in Australia based on ABV(g) for profit.

"Genomics has already changed the way dairy sires are bred and it's starting to influence the way we breed cows too," he said. "It's great to have new tools — like sires for health traits and now genomics — but I try to stay focused on my top breeding priority, which is to improve production, and then use new tools to help achieve that." D

For more information contact Michelle Axford, ADHIS extension and education manager, phone 0427 573 330, email <maxford@adhis.com.au> or website <www.adhis.com.au>.





Mr Wagner's progress on breeding for mastitis resistance and fertility in his herd is revealed in these graphs from his Genetic Progress Report.

Download Dairy Australia's new Countdown Mastitis Toolkit mobile app!

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- All you need to know from calving to drying off
- Four easy-to-use sections - Guidelines, Topics, Tools and Library
- Info on all Australian mastitis drugs including withold periods
- Built-in calculators for mastitis costs, liner life and more

To download the app visit www.dairyaustralia.com.au/countdown-app for a direct link or visit the Google Play for Android or iTunes Apps store for Apple.

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This is one of the many examples of the Dairy Services Levy at work. For more information on this and other levy investments visit **www.dairyaustralia.com.au**

Dryland dairy farms with high stocking rates need to have a set strategy to avoid over-grazing.

Tips for managing pastures in summer

PASTURE management through summer should focus on protecting the pasture and maintaining density with the aim of having a productive pasture next year. Maintaining appropriate post-grazing residuals is critical.

The key points for managing grazing residuals over summer are:

- Do not over-graze; maintain the residuals at 1500 kilograms of dry matter (DM) per hectare. Cows tend to graze down to 1200-1300kg DM/ha over summer so grazing needs to be restricted.
- Aim to maintain some green material (such as green stems) over summer as this will help summer survival and autumn regrowth to build the feed wedge.

Maintaining some pasture cover by targeting residuals at about 1500kg DM/ha creates a more favourable micro-climate near the soil surface than when grazed down lower to 1200kg DM/ha.

The micro-climate can help retain soil moisture close to the soil surface and create protection from extreme soil surface temperatures.

To achieve these aims is a significant challenge on dryland dairy farms with high stocking rates when the summer rainfall is not sufficient to support pasture growth. It is necessary to have a set strategy or plan to avoid over-grazing.

Maintaining appropriate post-grazing residuals is critical over summer.

The approach to managing summer residuals is, in essence, similar to that adopted to avoid pugging under waterlogging conditions in winter. The strategy is to keep the cows in a reduced area (sacrifice paddock) where they can be fed and from which they are allowed to access pasture paddocks only to consume the allocated pasture, allowing for a residual of about 1500kg DM/ha.

First, identify paddocks suitable for use as sacrifice paddocks. These should have:

- good stock water access;
- good shade;
- close proximity to the dairy; and
- been previously identified for renovation.

Feeding out in the sacrifice area will ensure the cows are less hungry when entering a new strip of grass, making it easier to control the grazing intensity and leaving a residual close to the target. A good estimation of pasture pre-grazing cover and knowledge of the paddock dimensions is also essential in order to allocate pasture more accurately and achieve the target residuals.

This management helps maintain the density of a perennial ryegrass sward, which will be in a much better position to recover from the dry period once the first significant rainfall occurs. D

Dairy Australia
Your Levy at Work

Preparation essential to weathering extremes

THE need to be prepared for weather extremes is something New South Wales dairyfarmer Mike Jefferies knows only too well.

Having survived three rounds of flooding since 2009 at his Austral Eden farm, as well as severe flooding in 2001, the Norco board member has a number of procedures in place for responding to wet conditions.

In February this year flooding kept the farm under water for three days. Pastures were wiped out and 50% of the maize crop was destroyed.

Mr Jefferies said the flooding followed an extremely dry spring after a wet autumn, meaning feed supply was limited.

"The problem this year was the culmination — it was hard to prepare for," he said. "We were hit hard in 2009, 2011 and 2013 and that is really unusual. We learnt a lot of the lessons the hard way in 2001 so we do have a plan in place."

Mount Compass, SA, dairyfarmer David Basham said he hoped farmers were thinking ahead about this year's fire season.

Planning is crucial to prepare for weather extremes.

Being prepared

Mr Jefferies makes sure he has plenty of stored feed (including corn and pasture silage) on hand. He also keeps a close eye on the weather and monitors weather warnings.

"We are well aware of the off-shore/east coast lows created in this area in January and February," he said. "We are always vigilant from year to year.

"Once we get rain warnings we monitor river levels further inland. We use certain trigger points so if the river gets to a certain level we know we have a window of about 18 hours to prepare."

The plan is activated to shift stock to 1.6 hectares of higher ground around the dairy so the all-year-round operation's 300-cow herd can continue milking.

"We run a fairly unique operation where stock is spread across six properties," he said. "We also run 540 head of young stock. Bringing them to the home farm takes about 12 hours from the time we make the decision to the time we have the job done."

"All staff know what to do when the flood threat is high and one of our workers stays on the property at all times during the flood-prone period."

Recovery

Back in February the farm was isolated for three days due to road closures so milk could not be collected. The milk had to be dumped and much-needed feed was unable to reach hungry stock.

Mr Jefferies said production fell overnight from 27 to 17 litres per cow. However, once the road was opened and quality feed delivered it was quickly back to 22 litres/cow.

"Once the animals are back on the home farm the main concerns are keeping them fed, focusing on animal health and contacting feed suppliers as soon as possible to keep production up and to keep the cows in good condition," he said.

"We make sure we bring sawdust down very quickly on the paddocks and we are very wary of the effects of mastitis during this time."

Being aware of fire risks

In South Australia very dry conditions last summer raised dairyfarmers' concerns about fire risk. While it is too early to forecast this summer's conditions, Mount Compass dairyfarmer David Basham said he hoped farmers were thinking ahead.

"We've had lots of rain, but who knows what might happen when it dries out," he said. "If a fire or bushfire does occur, strategies such as shifting stock to close-grazed paddocks and away from any trees can help.

"I think it's a good idea for farmers, even if they don't own a generator themselves, to ensure they have a generator connection ready in the shed. It makes it so much easier when you hire one."

Mr Basham said he had attended recent meetings about better equipping the South Australian dairy industry for fire dangers. Since then the group had linked with emergency services and electricity supplier SA Power Network so they understood industry requirements in a fire event, he said.

"What we need is ongoing power so we've explained to them the need for the dairy industry to be a priority when power is being restored," he said. "We continue to discuss that with them," Mr Basham said.

Planning resources

DAIRY Australia's extreme weather pages include a dairy farm emergency preparedness checklist <http://www.dairyaustralia.com.au/Animals-feed-and-environment/Environment/Extreme-weather> and a 'Prepare your farm for fire' toolkit <www.dairyaustralia.com.au/bushfire>.

For more information about planning to reduce the impact of weather extremes this summer go to <http://www.thepeopleindairy.org.au/farm-policies-systems/preparing-for-emergencies.htm>.

Energy company SP Ausnet also has some advice on preparing for storms, bushfires and electrical outages in general for customers; visit <www.sp-ausnet.com.au> (search "preparedness").

Dairy Australia
Your Levy at Work

DA's 'apptastic' new mastitis technology

A WORLD-LEADING smartphone app developed by Dairy Australia (DA) to tackle mastitis is now available for dairyfarmers and advisers to download for free.

The Countdown Mastitis Toolkit app has been designed in consultation with dairyfarmers, advisers and vets and is based on the Countdown 2020 mastitis control program and associated resources.

Dr John Penry has been a member of the DA-led team that helped create the app. He said farmers would find it useful to access the information anywhere at any time, from the dairy to the paddock.

"Whether you want to know a liner change date, the health of cows' teats or information on teat disinfectant, this app is comprehensive, up-to-date and easy to use," Dr Penry said.

The app is divided into four sections offering a range of the latest information and resources farmers need to manage mastitis in their herds, including:

- tools;
- topics specific to common to mastitis control scenarios;
- Countdown Farm Guidelines; and
- a library featuring related articles, tips and traps.

South-west Victorian farmer and veterinarian Zoe Vogels was also part of the team that created the app.

Alongside her husband, brother-in-law and two farm staff she helps run a 600-cow dairy farm at Scotts Creek. She said the app was easy to use and an invaluable resource, particularly for newcomers.

"It's pretty much everything you need to know, from calving to drying off," Dr Vogels said.

"The app doesn't need reception once you have downloaded it, which is very useful for people like me who have patchy to no mobile reception.

"I'm looking forward to seeing it used by many different types of people. I see it being invaluable for anybody new to the dairy industry and also for milkers in the dairy, advisers, milk factory field officers, vet students and vets."

The app was road-tested by dairy advisers at a series of Countdown 2020 meetings in 2012 and finetuned at further trials by farmers and advisers this year.

The Countdown Mastitis Toolkit is available for both iPhones and Android phones and can also be used on tablets.

Details about another DA app for body condition scoring will be announced in due course.

To download the mastitis app visit website <www.dairyaustralia.com.au/countdown-app> for a direct link or visit the Google Play for Android or iTunes Apps store for Apple.

South-west Victorian farmer and veterinarian Zoe Vogels was part of the team that created the new mastitis app.

Zoe Vogels says the new mastitis app doesn't need reception once it has been downloaded, which is useful for people like her who have patchy to no mobile reception.

Dairy Australia
Your Levy at Work

New effluent management videos launched

DAIRY Australia (DA) has launched a series of videos outlining different aspects of effluent management to help farmers realise the full potential of their effluent systems.

Each of the 10 short videos is relevant nationwide for all dairy and climatic systems and has an accompanying printable fact sheet summarising the video topic as well as providing references for further reading or information.

The 10 topics are:

- making the most of effluent;
- avoiding problems with effluent management;
- the value of effluent;
- effluent system design;
- minimising effluent volumes;
- managing storage levels;
- planning a new pond;
- constructing a pond — soil testing;
- pond de-sludging; and
- managing manure.

DA's Dairying for Tomorrow consultant Elle Taylor managed the development of the resources.

"Dairyfarmers are busy people and might not have time to go out and check best practice systems or get people on-farm to look at their system," Mrs Taylor said.

"These short clips can arm farmers with background information before they engage with contractors and highlight some of the benefits of implementing effluent system changes."

Mrs Taylor said the benefits of optimising the management or infrastructure of effluent systems for farmers were wide-ranging and included increased productivity, reductions in fresh water, electricity and fertiliser use, and a decreased risk of breaching Environmental Protection Agency guidelines.

One of the western Victorian farms featured in the videos is managed by Liam Ryan at Grassmere. The 200-hectare block was converted into a 500-cow operation with a 50-bail rotary dairy in 2008.

Mr Ryan said effluent and waste water management was a real focus of the operation, which had helped the farm become more productive.

"Effective use of waste water was a key element of the farm design," he said. "To be able to capture the waste water in our effluent ponds and then spread that out on the farm as required is a real positive, as we are not on irrigation.

"We use that waste water to grow 15ha of a summer crop of turnips each year, which saves us buying in feed and is the real benefit of the system."

Mr Ryan said 15-centimetre underground piping from the 6.5-megalitre and 16-megalitre ponds had been put in across the farm in the past five years so the summer crops could be rotated to different paddocks and easily irrigated from year to year.

The videos and factsheets can be viewed at <www.dairyingfortomorrow.com>.

Optimising the value of effluent is the subject of a series of new educational videos launched recently by Dairy Australia.

Liam Ryan: Effluent and waste water management is a real focus of his operation, which has helped the farm become more productive.

Dairy Australia
Your Levy at Work

Subtropical co-ordinator appointment announced

JO Gorman has been appointed as Dairy Australia's new extension co-ordinator for the subtropical dairy region, which extends from the Atherton Tablelands in Far North Queensland to northern New South Wales.

Having grown up on a wheat and sheep property in NSW, Ms Gorman pursued agriculture as a career, studying agricultural science at Melbourne University with the ambition of working with farmers to improve farm productivity and ensure sustainability of farming families.

In her role as extension co-ordinator, she will continue to work with local research and extension groups as well as farmers to deliver timely and relevant extension outcomes meeting the specific needs of the different areas within the subtropical region. With such vast distances to cover, she will be working closely with the subtropical dairy program and local extension groups to encourage on-farm change and promote innovative practices while continuing to meet the current extension needs of dairyfarmers.

Ms Gorman moved from Victoria to Queensland to join the Department of Agriculture, Fisheries and Forestry's (QDAFF) dairy extension team three years ago.

She has been working with farmers to build confidence around developing and implementing flexible tropical feed-base strategies and systems to meet market and climate-driven demands.

Dairy Australia's new extension co-ordinator for the subtropical region, Jo Gorman, says she enjoys helping farmers build their knowledge.

She has solid technical knowledge in a number of different types of feeding systems, agronomic background in tropical forages and feed options as well as a strong interest in soil and nutrient management. Before joining QDAFF, she was based in West Gippsland in Victoria and worked with a fertiliser business whose customer base included dairy clients, sparking her interest in the dairy industry.

"What I enjoy most about extension in dairy is helping farmers build their knowledge and confidence in facing the challenges of dairying in northern Australia," she said.

To find out what activities or events are coming up contact Ms Gorman on 0439 555 322 or visit the Subtropical Dairy website <http://www.dairyinfo.biz/default.asp?PageID=28>. D

New heat-detection training video

THE importance of good heat detection in improving cow reproductive performance has been explained in a new instructional YouTube video available on the Dairy Australia (DA) website.

The nine-minute video *Heat Detection Strategies for Australian Farmers* was produced by the National Herd Improvement Association in collaboration with DA and Zoetis. It shows the different signs shown by cows in heat and the best times and places for heat detection.

NHIA general manager Carol Millar said detecting cows on heat was one of the most important factors in successful AI programs and one area where many farms could improve.

"We think this film will be especially valuable for farmers to explain to less experienced staff members the 'how to' of heat detection and why getting it right is so very important to their breeding success," she said.

"The more that we can up-skill our industry in heat detection, the greater the chance of improvement in this area."

Research from DA shows that each missed heat costs a dairyfarmer $200. If farmers observe just one more cow on heat per day that's equal to $1400 a week in reduced costs and ensures a tighter calving pattern, the video highlights.

If farmers observe just one more cow on heat per day that's equal to $1400 a week in reduced costs.

To watch the video visit DA's website <http://www.dairyaustralia.com.au/heatdetection>.

Dairy Australia
Your Levy at Work

Development specialist links farmers with advice

DAIRYFARMERS in Western Australia looking for opportunities to help improve the management and profitability of the farm now have somewhere to turn for assistance.

Working with West Australian dairyfarmers to create more successful farm businesses is the role of Western Dairy's dairy industry development specialist Rob La Grange.

Mr La Grange's position is co-funded by Dairy Australia (DA) and the Department of Agriculture and Forestry Western Australia (DAFWA) and managed by the regional development program Western Dairy (WD). He has been in this role for the past two years and describes himself as the "point man" for dairyfarmers from south of Perth to Busselton and from the Harvey, Vasse and Scott River areas across to Denmark and the southern coast of WA.

"I really enjoy working with farmers through dairy extension work, whether that it is here in WA or in my previous roles in New Zealand and Tasmania," Mr La Grange said.

"I'm here to engage with farmers as to their needs and to link them with opportunities such as discussion groups, field days, industry programs and, if required, advisers who can help make their businesses more profitable and successful."

WA's farmers need to manage the challenges posed by variable feed input costs, especially if homegrown conserved fodder is limiting in quality and quantity.

Mr La Grange carries out a number of activities related to WD from supporting focus groups to working with localised National Centre for Dairy Education Australia (NCDEA) training and rolling out DA initiatives such as last season's Tactics for Tight Times campaign.

"The distances I travel can be big at times but the smaller size of the industry in terms of numbers of farms does make it easier," he said.

Mr La Grange said WA's dryland farmers, who feed higher levels of grain for six months of the year, need to manage the challenges posed by variable feed input costs, especially if homegrown conserved fodder was limiting in quality and quantity.

"While the season had been looking good, with good pasture yields anticipated, the season's higher-than-average rainfall is causing headaches for farmers in the west," he said.

Heavy rain this spring may make things difficult when it comes to cutting silage. "We are going to have problems with silage quality on some farms," he said. "On the other hand, the rain has been good for irrigation and dams as they have been able to fill up."

To find out what group activities events are coming up contact Mr La Grange on mobile 0448 939 344 or visit the Western Dairy website <www.westerndairy.com.au>.

Rob La Grange (left) with a compost team taking part in a Western Dairy regional development program: industry development manager for Waste Management of Australia Doug Hall, farmer Steve Scott, project manager Matt Evans and farmer and Western Dairy board member Victor Rodwell.

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ASI	kgP	P%	Milk	kgF	F%	Rel%	Cell Count	Overall Type
209	22	0.27	307	53	0.57	67	137	104

ZINGER APR 319/58%

ASI	kgP	P%	Milk	kgF	F%	Rel%	Cell Count	Overall Type
301	42	0.23	1129	66	0.26	66	103	106

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ASI	kgP	P%	Milk	kgF	F%	Rel%	Cell Count	Overall Type
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