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OUR COVER

A SIMPLE pasture-based system targeting high production per hectare and per cow is how a young sharefarmer is building wealth in the dairy industry.

Read our story, starts page 45.

Picture by Carlene Dowie



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Pasture research delivers

THERE'S been a lot of debate in recent months about the development of genetically modified grasses by the Dairy Futures Co-operative Research Centre. This is an exciting development but the debate about whether farmers will be allowed to use the technology has overshadowed some of the other developments at the centre.

I spoke to the centre's chief executive officer Dr David Nation for an article for this issue looking at these other developments.

This research is just as exciting and promises to deliver big gains for Australian dairyfarmers.

The biggest breakthrough is about how genomics is promising to allow plant breeders to develop ryegrass hybrids. These plants have always been seen by researchers but have had to be ignored because of the way in which ryegrass breeds.

'This research could deliver between \$500 and \$1000 a hectare to farmers.'

Dr Nation is hopeful the research will allow ryegrass hybrids to be bred — effectively turning ryegrass breeding on its head.

Developments in the use of genomics in plant breeding are also promising. It is hoped these will allow the identification of genes responsible for things such as the energy content of plants — allowing existing varieties to be improved for this important characteristic.

Research is also unlocking endophytes, allowing breeders to identify the perfect endophyte for each ryegrass variety.

Dr Nation says this research could deliver between \$500 and \$1000 a hectare to farmers. That's a huge return.

Pasture is the key to the Australian dairy industry's competitiveness and profitability. So this research is really vital because it's about improving the thing that will deliver more profits to the industry.

And most importantly, none of this research is subject to regulatory approval. It can be used by plant breeders, seed companies and farmers without any delay or waiting for the regulatory environment to change.

Unfortunately the gains from this research and information about it have been lost in the debate about the GM grasses.

This doesn't mean that the GM debate is not worth having — it is, and it is important that the industry works through the issues so those farmers who want to use this technology can do so.

GM feed sources are being used by a lot of the dairy industries throughout the world. As most dairying is done through confined systems, GM feeds are used without concern about how they are grown.

For pasture-based systems, the debate is around growing the feed as well as feeding it. This is what makes the debate so difficult.

The other impact of the debate is that it draws all the focus away from the other developments. So farmers are left feeling that the research will not be worthwhile because they are concerned GM grass will not gain approval.

But as our article on page 44 shows, there are already significant gains to be had from the research.

The other important point that Dr Nation made was that plant breeding is a long process: it can take up to 12 years for a variety to be developed from the initial research to the release of a variety onto the market.

So the returns are coming and will be able to be used by farmers, it is just going to take a little time.



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A year on from the National Summit

Key points

- ✓ National Summit identified 18 future focused priorities
- ✓ Important progress made toward improving profitability and sustainability
- ✓ Dairy industry taking a whole-of-value-chain approach to long-term growth

THE inaugural Australian Dairy Farmers (ADF) National Dairy Farmers' Summit, held in Melbourne in March last year, was widely declared a positive step forward for the Australian dairy industry.

Insight provided by the 150 strong industry representatives — the overwhelming majority being dairyfarmers from across Australia — has driven a whole-of-value-chain approach toward strategies for innovation, investment and growth.

Officially opened by Federal Minister for Agriculture, Barnaby Joyce, the summit identified 18 key, future-focused priorities. The consistent message was that the industry's priorities and actions should focus on delivering long-term sustainable profitability.

In the year since the summit, dairying has seen keen interest and investment from domestic and international parties, and an enthusiastic response from the dairying community, who continue to get on board to help guide and pursue change.

In December 2014, the Australian Bureau of Agricultural Research, Economics and Science (ABARES) reported that average farm cash incomes increased to about 29% above the 10-year average to 2012-13.

The summit influenced a mid-year Australian Dairy Industry Council (ADIC) Strategic Forum, which saw the formulation of the first Australian Dairy Vision. It also locked into place the ADIC Plan setting out the key areas of investment, including issues such as strategic planning for the industry, communication and engagement as well as support for domestic and international trade measures.

Industry leaders responded to the



Minister for Agriculture Barnaby Joyce at the ADF National Summit: The world is run by those who turn up.

summit's call to invest in the growth of the industry, staging a sell-out investment forum in September hosted by Dairy Australia and headed by Minister for Trade and Investment, Andrew Robb.

'The summit ... fostered a strong sense of unity and a shared vision for Australia's dairy future'

The summit vote also provided a strong mandate for ADF to support international investment in Australian dairying. It expressed confidence in the robustness of Australia's foreign investment regulatory regime. ADF argued those regulations would be strengthened further by the planned land register and the National Interest Test.


Also at the March summit, delegates gave the third-highest ranking to encouraging trade. Within the year, the Federal Government successfully concluded free trade agreements (FTAs) with China and Korea. Those FTAs had been keenly sought; ADIC and Dairy Australia representatives lobbied persistently over the terms of

the deals. The industry will reap benefits for years to come.

Another direction from the summit was to ensure immigration laws and the pastoral awards are better matched to industry needs. This was supported by ADIC submissions to Federal Government reviews of skilled migration and 457 visas.

Similarly, the year saw major submissions to the Federal Government's Productivity Commission — fighting to keep dairy's best interests on the national agenda by improving competitiveness in the domestic market. Inspiration for that considerable body of work squarely answered one of the summit recommendations — to "pressure government to enable agricultural prosperity".

Responses from summit delegates have been channelling impetus into programs of other agencies. Dairy Australia's Legendairy campaign was endorsed and its Accelerating Growth project given greater momentum as a result of the summit.

The summit has driven industry focus during the last year and will continue to do so in future. Most importantly, it fostered a strong sense of unity and a shared vision for Australia's dairy future. 



Achieving sustainable profitability means identifying elements of dairy operations that can be improved.

Money from milk, not milk from money

IT IS an absolute fact that no two dairy farms are the same. For this reason, there is no 'silver bullet' approach that can be applied to make all farms profitable.

But every operation, big or small, has areas where it can improve and safeguard its profitability.

"Farmers are business focused — we are constantly searching for efficiencies that can increase our profitability," Australian Dairy Industry Council (ADIC) chair and Victorian dairyfarmer Noel Campbell said.

"To do this in a way that provides meaningful benefits we must identify elements of our operations that can be improved.

"There are always aspects beyond our control — things like drought, flooding and milk price fluctuations. But there are also things we can control."

There is no better way to judge where there's room for improvement

on farm, than to be able to benchmark the business against other farms to assess what is done differently and how the outcomes differ as a result.

'... we are constantly searching for efficiencies that can increase our profitability.'

The Sustainable Farm Profitability Report, commissioned by the ADIC in conjunction with Dairy Australia, brings together information and analysis regarding contributors to farm business profitability.

This overview pinpoints the key drivers of successful dairying businesses and highlights long-term strategies within farmers' control to help focus management plans.

Building farmer capability is not about being the best at one thing to survive periods of low profitability — it's about achieving the right balance so that the farm can flourish and better mitigate risk when required.

Dairy farms are infinitely more successful when farmers are good at managing their business across the board, with a combination of technical and financial skills. "Profitability is not all about expansion and size, especially not if expanding means increasing costs to increase output," Mr Campbell said.

"It is our hope that this report provides farmers with the tactical, strategic management guidance that, when used in conjunction with other resources, will enable them to make more money from milk rather than making milk from money."

The full Sustainable Farm Profitability Report will be available via <www.australiandairyfarmers.com.au> in March 2015.

Natalie Collard: beyond the farmgate

FOR any organisation to succeed, its members must truly believe that they are investing in something worthwhile. To Natalie Collard, outgoing chief executive officer of Australian Dairy Farmers (ADF), there is no cause more worthy than that of the Australian dairyfarmer.

"My career in dairy was very deliberate," Ms Collard said. "I was and remain convinced that dairy could be the next economic boom for Australia — it is already in 97% of Australian homes — Coca-Cola can only dream of such consumer cut through."

While she wasn't born into dairy, Ms Collard quickly developed an appreciation for the resilient and humble people who worked to put their products on the kitchen table.

"Without their generosity in sharing their knowledge there is no way I could have succeeded in my position," she said.

Believing in the importance of commodity-based representation for its ability to deliver a unified front on issues key to the success of industry, Ms Collard joined ADF in 2008 with a view to help dairy become more sustainable.

General manager of shareholder relations at Murray Goulburn Robert Poole noted the challenging time in

which Ms Collard took over the role of chief executive officer at ADF in 2011. Mr Poole, also deputy chair of the Australian Dairy Industry Council (ADIC) said the organisation was in need of not only stabilising the financial and governance procedures, but stronger industry ties and improved policy.

'I was convinced that dairy could be the next economic boom for Australia — it was already in 97% of Australian homes — Coca-Cola can only dream of such consumer cut through.'

"Ms Collard was not deterred by these hurdles," Mr Poole said. "She always maintained her professionalism and drive toward improving ADF and the ADIC and therefore outcomes for farmers."

Chair of the NSW Farmers Dairy Committee Robert McIntosh said Ms Collard had shown true leadership, always acting nationally and ensuring

that all perspectives were heard and acknowledged.

"Under Ms Collard's leadership the state dairyfarming organisations now feel they are valued members of the national network," Mr McIntosh said. "We feel as though the interests of our farmers are recognised on a national level."

Mr McIntosh said the ADF National Dairy Farmers' Summit had a substantial influence on the strategies and policies of the industry, and was a true testament to the renewed focus and vision that Ms Collard had brought.

With Ms Collard at the helm, ADF fought hard for farmers on key issues including the \$1 per litre milk issue and achieved milestones such as the positive dairy outcome at the conclusion of the China-Australia free trade agreement.

A firm believer in positive change, Ms Collard said she was confident it was the right time to look for the next challenge.

"It has been an honour to represent the proud and passionate people of dairy and I am keen to see them prosper," Ms Collard said.

"I am confident ADF is in a strong position going forward and that I can now step into a new horizon and seek out my next challenge." D



ADF chief executive officer Natalie Collard: It has been an honour to represent dairyfarmers.



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“The cows went straight into milk production after calving with no dramas.”

- David Custance, Eliza View Holsteins, Poowong North

Dairy cows are continually faced with stressful events throughout the lactation cycle that can adversely affect their immune system, creating opportunities for infection and disease.

Many events, like calving or weather, produce visibly noticeable signs of stress; however, others, such as cow comfort, pregnancy and lactation are more subtle. Both challenge the cow's immune system and both can result in cows becoming more susceptible to disease, resulting in significant economic costs to the dairy operation.

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Overall cow health is much better

David and Jenny Custance started adding *OmniGen-AF* to the feed of their 230 cow dairy herd in July 2014, hoping to improve their cows' immunity and to help them during the stressful cold, wet winter period. The *OmniGen* pellets went into the lead feed and continued into the milking cows ration. The recommendation to use *OmniGen-AF* came through their long standing relationship with local Phibro Sales Manager for Gippsland, Chris Lawton.

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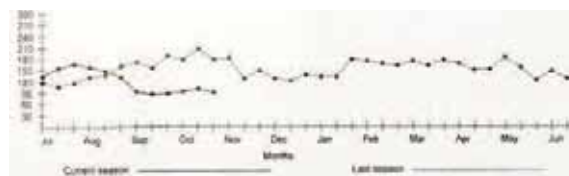
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David and Jenny Custance with Chris Lawton, Phibro Sales Manager for Gippsland.

David said the first thing he noticed was that the cows went straight into producing milk without any complications, with a much lower SCC. “Cell count started out at 60-70,000 with the odd spike around 110,000. We didn't have to worry about going over the 250,000 limit” David said.

BMCC/1000



Jenny noticed that there were not many retained membranes and that even the PG'd cows cleaned on their own. “Normally we would treat about 15 for infections. This year we treated two, one of which had aborted” she said.

Jenny went on to say “Late calvers normally have trouble cycling and we were ready to sell them, but they have up and joined – some of them on their first heat.” They have also had a much better response to PG (used to tighten the joining period) with some cycling before the PG application. David said “the cows cycled extraordinarily well”.

Another observation made by David, who has done his own AI work for 35 years, was that “cow uterine tone felt much firmer and they were easier to AI”.

David and Jenny both agree that the overall cow health is much better in their herd.

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Dairy Australia Round Up



The latest from Dairy Australia

Share farming code of practice launched

DAIRY owners and potential sharefarmers now have easy access to the information they need when entering a sharefarming arrangement with Dairy Australia's new Share Dairy Farming Model Code of Practice.

The code, an industry first, promotes sharefarming as an effective way to operate a dairy farm business and provides dairyfarmers with tools to develop, assess or review sharefarming arrangements.

Dairy Australia's industry people and capability group manager Shane Hellwege said sharefarming was a key part of the dairy industry and can provide an important path to farm ownership. About 17% of Australia's 6400 dairy farm businesses operate under sharefarming arrangements, however to date, there has been no specific industry-endorsed code in Australia.

"Sharefarming arrangements can work out well for both the dairy owner and the sharefarmer," Mr Hellwege said. "However, there are some risks if a fair agreement isn't reached.

"As the name suggests, the arrangement involves sharing. It's not just income and costs but also labour input, risks, responsibilities, skills and control.

"Generally each party provides different, but complementary, resources to the sharefarming arrangement. This can be in the form of land, machinery,

equipment, livestock and labour. A successful arrangement is when both parties benefit."

The new code includes tools to guide dairyfarmers through the assessment and establishment of sharefarming agreements, including:

- calculator: to check if the arrangement is fair and affordable for all parties;
- legal test guide: to assess the ar-

'Sharefarming arrangements can work out well for both the dairy owner and the sharefarmer.'

angement from a legal perspective;

- discussion checklist: to explore the key factors in the arrangement; and
- share dairyfarming agreement: to prepare a draft agreement.

The code is designed to be used with the help of a consultant or dairy adviser. Once an agreement has been reached it is important to get the financial and legal aspects checked by an accountant and solicitor. Information sessions on the code will be held in the coming months.

Raw milk facts

"Raw milk has captured media attention of late and as custodians of the industry,

we could all be asked questions about this topic," sustainability manager at Dairy Australia Helen Dornom said.

"If asked, it's important to give answers that reflect the confidence consumers already have in our industry by supporting dairy's reputation for producing highly nutritious, safe and healthy milk and dairy products."

The sale of raw (unpasteurised) milk for human consumption has been illegal in Australia for more than 50 years, and in Victoria, it is also illegal to package, deliver or provide raw milk for human consumption.

"The sad cases of serious illness linked to the consumption of raw 'bath' milk among children led to Dairy Food Safety Victoria issuing new licence conditions late last year," she said. "These new conditions bring the existing laws into sharp relief.

"Farmers have been drinking raw milk for years, but everyone is still vulnerable to the organisms present in unpasteurised or treated milk.

"The risks are even greater for young children and people who are elderly or pregnant, have underlying health problems, or have compromised immune systems. We must remember that good hygienic practices during milking may reduce, but will not completely eliminate, the risk of contamination, so no matter what precautions are taken farmers cannot guarantee their milk will be free from harmful bacteria, hence the need for pasteurisation or equivalent treatment."

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◀ For further information on raw milk visit: <<http://www.foodstandards.gov.au/consumer/safety/Pages/Raw-drinking-milk.aspx>>.

Legendaairy farmer packs hit regions

The dairy industry successfully launched Legendaairy 18 months ago with a focus on raising awareness about Australian dairying.

Now, in its second year, Legendaairy is looking to expand participation even more and Dairy Australia has produced a free resource kit for farmers keen to get involved and champion the industry.

The pack includes details of the results delivered through Legendaairy during its first year, communications tips and tricks, including via social media platforms, postcards with imagery promoting the eight dairy regions, and information on the Legendaairy activities coming up in 2015.

The pack has been distributed to all eight dairying regions.

Farmers can contact their local RDP or email <legendaairy@dairyaustralia.com.au> to request a free copy.

New-look Discover Dairy website

A new-look Discover Dairy website has been launched to greet the 2015 school year.

The website is full of dairy-related

'The Discover Dairy website was visited by around 11,500 new visitors a month, and there's enormous potential to build this further.'

resources for both teachers and primary school kids, with a fresh look and feel, and easier navigation.

Discover Dairy provides teachers with free resources and tools aligned to the Australian National Curriculum and is a treasure chest of tools for students, helping to bring the Aussie dairy industry into the classroom.

"Over the past three years, the Discover Dairy website was visited by around 11,500 new visitors a month, and there's enormous potential to build this further," industry promotions manager at Dairy Australia Kelly Ward said.

"The new website has expanded appeal and will work even harder as a classroom resource due to its close link to the current curriculum."

Visit the new website at <www.dairy.edu.au/discoverdairy>.

Focus on farm safety

Safety is one of the key factors that


will keep the dairy industry competitive into the future. Providing a safe workplace is vital for farmers, families, employees, contractors and visitors. Accidents and incidents are costly. Getting safety right will ensure accidents are minimised, productivity is enhanced and the full benefits of the farm are realised.

Quad bikes are the leading cause of death on Australian farms. The latest figures from the Australian Centre for Agricultural Health and Safety state there were 15 recorded quad-related deaths in 2014, maintaining the 10-year average of 14 deaths per year.

The National Centre for Dairy Education runs an Operate Quad Bikes course at their training centres across the nation. The program can also be offered on farms across the regions.

The one-day program provides anyone who uses quad bikes as part of their work with the necessary skills to operate quad bikes safely and effectively.

The first half of the program is theory based while the second half is practical. A second day of practice may take place if required. For more information phone 1300 062 332.

More information and resources to help make farms safer are available under the Safety tab in the Employment Starter Kit initiative and on the People in Dairy website <www.thepeopleindairy.com.au>. 

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Gina Rinehart invests in WA dairy

Key points

- ✓ Mining magnate invests in Bannister Downs
- ✓ Second major investment in dairy
- ✓ Sees farming as important for future

By Wendy Gould

MINING magnate Gina Rinehart has taken her rapidly expanding interests in agriculture one step further adding a joint venture with Western Australia's Bannister Downs Dairy to her portfolio.

The union between the two WA family-owned companies, Northcliffe dairyfarmers Mathew and Suzanne Daubney's Bannister Downs Dairy and Ms Rinehart's Hancock Prospecting (HPPL) subsidiary Hope Downs Dairy, will centre on construction of a \$20 million purpose-built processing facility enabling a four-fold increase in Bannister Downs' supply.

It will also include a tourism side to the business whereby visitors can share in the Bannister Downs story and see the process from "grass to glass".

Ms Rinehart said the investment was part of a developed strategy to support and grow the dairy industry in Australia.

It comes on the back of a Queensland-based joint venture with Chinese interests to supply infant milk formula to China.

Having spent much of her childhood in the North West, predominantly on Mulga Downs station, Tom Price, Ms Rinehart said she was privileged to have been brought up in the country with an outback common-sense background.

"Fortunately from participating in the mining industry we are also now able to invest further in the agricultural area," she said.

Ms Daubney said her family couldn't be happier with the partnership arrangement they had formed with Ms Rinehart, especially as it meant control remained in WA family business hands.

"I think people underestimate her connection to agriculture," she said.

"It's a signal dairy is on the move



Suzanne and Mathew Daubney, Bannister Downs, with Gina Rinehart on the Daubneys' Northcliffe, WA, dairy property.

and we hope there are other flow-on effects for the industry but it does take time to see the benefit at the farm-gate."

Bannister Downs' main focus will continue to be supply to WA markets but overseas markets are on the radar for the future. "We already have 50 outlets in WA on our waiting list so that will be our first priority," Mrs Daubney said.

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◀ “After that there is enormous potential to sell into Asian markets particularly with the falling dollar and the competitive cost of air freight into these regions.

“We are not looking for mass markets but for high value markets in offering product freshness and integrity.

“I think trust is the new currency in business and that’s what we offer. What we milk from cows this morning can be on local shop shelves within a few hours and in Perth and potentially Asia by tomorrow morning.”

When they started their milk-retailing venture in 2005, the Daubneys broke new ground with special biodegradable, flat pack packaging in their mission to be ethical suppliers of premium quality, whole and flavoured milk and cream.

“Getting a small business started in

‘It’s a signal dairy is on the move and we hope there are other flow-on effects for the industry..’

WA in the early days was tough and we didn’t make any money for the first four years,” Ms Daubney said. “By 2011 we knew we could make it work and that’s when it became apparent our only hope for significant growth would be through a joint venture partner.”

The Daubneys enlisted an Eastern States consultant to develop a business plan, but a chance crossing of paths with people connected to Ms Rinehart put the ball in motion for the current scenario.

“In 2010 when I won the 40 under 40 business awards, I received a congrat-

ulatory email from Mrs Rinehart,” Ms Daubney said.

“I was amazed someone as busy as her would take the time to write a personal note and we continued to correspond on an intermittent basis.”

The pair eventually met in person in January. A visit to HPPL’s office to provide some general dairy industry information led to a throw-away comment about looking for a business partner and so began a very different conversation.

“We eventually signed up on the 12th of the 12th and the whole process has been a wonderful experience whereby we have been treated with the utmost respect and kindness, while still being very accountable,” Ms Daubney said.

Construction on the new “creamery” is expected to begin in September 2015 with completion scheduled for late 2016. D

Northcliffe farms feel impact of fire

By Mal Gill

FARMS in the Northcliffe region of Western Australia, where Bannister Downs Dairy operates, were hit by a bushfire in early February. Five of the region’s eight dairy farms were impacted by the fire, according to Department of Agriculture and Food Western Australia (DAFWA) Manjimup area manager Ian Guthridge. Three of the five, all south of the Northcliffe township and bordering Karri forest, were significantly impacted with much of their dry pasture, fences and some hay destroyed.

“Two farms lost two-thirds of their dry pasture and will be relying on hay to feed non-milking stock and to supplement remaining green feed for milking herds,” he said.

The other two properties, including Bannister Downs, suffered relatively minor damage with some fencing lost.

DAFWA southern region manager Neil Guise said part of the a crucial farmer liaison and support role Manjimup DAFWA officers had played during the emergency involved negotiating access for milk tankers to a restricted entry zone, created due to the fire.

“It was important to liaise with the incident management team to negotiate permits for essential access for milk tankers so that the eight dairies in the area could have their milk transported,” Mr Guise said.

The Northcliffe fire has been declared a natural disaster, making Federal and State Government funds available to the shire and to farmers to help replace damaged infrastructure.

About 90% of Julie and Wally Bettink’s farm Northcliffe dairy farm was burnt out. Their farm butts up to Karri for-

est that was turned into a charred black wasteland after a lightning strike in Shannon National Park ignited a fire.

“We’ve lost about 90% and all but one of our lease blocks has been burnt out,” Mrs Bettink said. “But we were lucky, we still have our house, and it’s wooden.

By moving cows away from the exposed boundaries they managed to save the lot, with only three and their bull suffering some minor burns.

The farm was continuing to operate with the milking shed and house running off a generator and tractors driving the rest of the equipment to run the farm.

But there was also some good news in a difficult situation.

They had thought their haystack had gone up in flames but later discovered it unburned and the irrigated green feed for the 300-cow milking herd was also saved.

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Use of genomic sires rising

By Carol Millar

THE annual Semen Market Survey conducted by the National Herd Improvement Association of Australia (NHIA) provides the industry with an interesting set of statistics on the artificial insemination/semen industry in Australia.

The survey compiles data on semen sales figures for both dairy and beef semen by all the major AI companies operating in the country based on the 2013-14 financial year.

Holstein predominant

The Holstein breed is easily the most popular dairy breed with 78% of all dairy semen sold. This is followed by Jersey, which is easily the next most popular breed with 15% of the market. In fact, during the five years that the survey has been running, the Jersey breed has made significant increases — proportionately more than any other breed.

Interestingly, the Kiwi-Friesian, Australian Red Breed and Brown Swiss are the next most popular breeds. Thirty years ago Ayrshire and Guernsey were popular breeds with Australian dairyfarmers but now added together make up just 0.6% of the market. They are in danger of becoming rare breeds.

On the beef side, nearly 65% of doses sold were from the Angus breed. It is the most popular beef breed in AI by a substantial margin.

Sexed semen

The use of frozen sexed semen has declined in the past two years by a total of almost 18,500 doses. This year, how-

ever, there is a new category recorded for fresh sexed semen of which more than 8000 doses were used.

Clearly the slightly superior conception rates of fresh sexed semen will see the use of this category growing in coming years.

Genomic bulls increasing

One of the most significant outcomes of this survey has been the increase in the use of genomic AI sires by Australian dairyfarmers in the past year.

Historically, the Australian market has taken a more conservative approach to genomic sires than farmers in other regions, such as the United States or Europe. However, this appears to be changing and there was a significant increase in the amount of genomic semen sold.

It would appear that farmers are now more prepared to use genomic AI sires in their breeding programs but also heed the advice of industry experts to use a team of 4-6 genomic

bulls rather than “putting all their eggs into one basket” and just selecting one or two. Clearly we have reached a stage where the market is becoming more confident about the accuracy of genomic sires and seeing the benefits of the increased genetic gain.

Keeping track

Another new feature with the Semen Market Survey this year has been to track the total number of bulls available for sale in Australia.

A total of 1568 Holstein bulls were available for sale in Australia last year. Of this total, 1137 of these (72%) were imported bulls and 431 (28%) were domestic bulls resident in Australia.

Australian dairyfarmers certainly have a great deal of choice when it comes to choosing the bulls that will sire the next generation of cows — the real trick in succeeding is to make sure that the best ones are used so that genetic gain is maximised. **D**

Table 1: Dairy Sales by Category.

	2014	Units Sold 2013	Difference
Proven	1,233,892	1,247,647	-13,755
Progeny Test	110,185	142,381	-32,196
Genomic	422,459	267,936	154,523
Sexed/proven/frozen	55,643	62,038	-6395
Sexed/genomic/frozen	13,435	6,416	7019
Sexed/proven/fresh	4058	-	4058
Sexed/genomic/fresh	4121	-	4121
Export	87,705	114,706	-27,001
Total	1,931,498	1,841,124	90,374

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NCDE meeting future challenges

Key points

- ✓ NCDE will now offer agribusiness and post-farmgate programs
- ✓ Expanding to also offer school programs and also university courses

THE National Centre for Dairy Education (NCDE) is changing. The centre, which was established nine years ago as a partnership between Dairy Australia, TAFE providers and agricultural colleges around Australia to provide vocational dairy training, will now expand to also offer schools programs, university courses and ongoing professional development.

‘The new direction looks beyond the development of on-farm skills at ways to provide people with the skills and knowledge needed to excel and make a real difference to their careers, their businesses and to the dairy industry.’

Initially the focus of the centre was on-farm skills development, providing a career framework for dairyfarmers as well as courses in dairy food processing. While these will continue to be an important priority, the NCDE will now provide more programs for people who work in agribusiness and in the dairy industry post farmgate.

The new-look NCDE will also offer seminars and workshops to meet the ongoing professional development needs of people in a variety of



The NCDE will now provide more programs for people who work in agribusiness and in the dairy industry post farmgate as well as for farmers.

roles and at all stages of their dairy careers.

Dairy Australia’s program manager industry education, Karen Morath, said the centre needed to evolve to align with how the industry had changed during the past nine years.

“Farmers will benefit from these changes both directly and indirectly,” she said. “They will now have access to a broader range of courses and they will be supported by advisers and consultants who will also have greater access to further development opportunities.

“During the last nine years Dairy Australia has built great relationships with registered training organisations in each dairy region across the nation and these partnerships have helped us to deliver short courses and customised programs for dairy and processing organisations, individual farmers and people in the dairy service industry. We will continue to work with these partners and also universities and private trainers.

“We will seek to partner with the very best education providers in each area of education need, for example in agribusiness, human resources, farm business management and other ar-

eas that may include export, product development, innovation and marketing.”

GOTAFE, the education institution that delivers dairy vocational education and training across Victoria, as part of the NCDE has welcomed the change.

GOTAFE executive manager of Agriculture and NCDE Peter Carkeek said the shift in focus was a progressive step toward the ongoing success of the dairy industry.

“GOTAFE and the national alliance partners are dedicated to providing training and education that is relevant and innovative and promoting excellence that equates to whole business solutions for all participants in the industry,” Mr Carkeek said. “With the launch of the new-look NCDE, there is greater opportunity to showcase the breadth of training opportunities available to those within the dairy industry.

“The new direction looks beyond the development of on-farm skills at ways to provide people with the skills and knowledge needed to excel and make a real difference to their careers, their businesses and to the dairy industry.”



The new look NCDE

IN ADDITION to changing the structure of the centre, producers may have noticed the new look which includes an updated logo and a name change. The brand has been refreshed to reinforce Dairy Australia’s ongoing investment in the centre.

NCDE oration points to people power

Key points

- ✓ Well-educated industry is key to success
- ✓ Investment in people gives a competitive advantage

THE “three Ps” of our farming future are people, people, people, according to principal of Tocal College Dr Cameron Archer, AM.

Dr Archer put forward the notion that the future of the dairy industry is underpinned by people at the National Centre for Dairy Education (NCDE) inaugural oration last November. The NCDE is an alliance of education institutions around Australia in partnership with Dairy Australia that meets the education needs of the dairy industry. Tocal College is one of the partners in the NCDE.

The oration was titled ‘Education for the dairy industry — our future challenges’. It focused on and high-

lighted the importance of a well-educated industry to produce a respected product.

‘We need to inspire and encourage children at all levels of achievement to be interested in our primary industries.’

Dr Archer, who has been made a Member of the Order of Australia (AM) for his significant service to agriculture education, explained some of the challenges the industry faces. Dr Archer compared today’s industry (6400 farms with 1.6 million cows producing 9.2 billion litres of milk) to 1980 (22,000 farms with 1.8 million cows producing 5.4 billion litres of milk), highlighting that people are the future of dairyfarming.

“A new technology, a genetic marker, a treatment or medicine, processing method, smart farm technology, breeding strategy, dietary strategy, feed supplements can be around the world in a flash,” Dr Archer said.

“All of our competitors will have it. What they will do with it — will be up to their people. People, people, people are the three Ps for the future of farming ... where we can really have the competitive advantage is through our people.

“If you get the people right you can really make anything work but if you get the people side wrong, nothing can work. It is as simple as that.

“The future is about people, good people at all levels, committed people who see farming as a career, even a calling. To do this we need to inspire and encourage children at all levels of achievement to be interested in our primary industries.”

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and capability group manager Shane Hellwege said the themes of Dr Archer's oration were consistent with one of Dairy Australia's key priorities: to attract and retain, and grow the capability and skills of the people in the Australian dairy industry.

"Dairy Australia has a number of programs that attract new people to the industry," Mr Hellwege.

"We work across the school sector and our renowned secondary school program, Cows Create Careers is a great way for future generations to see the many career opportunities in the industry. From farmers and veterinarians to agronomists and cheese makers, the dairy industry provides many different career pathways.

"We have also built great relationships with registered training organisations in each dairy region across the nation. This alliance helps us make sure we are delivering the latest information to the dairy industry — it helps us get all our research and development work into resources and to the education system as quickly as possible.



Total College principal Dr Cameron Archer's AM oration focused on the important role education plays in the dairy industry.

"The ESKi (Employment Starter Kit initiative) and the People in Dairy website are also great resources for dairy farmers to get advice on how to recruit, select, induct, supervise and develop the right people to suit the job."

Dr Archer was speaking at the first annual oration of the NCDE.

The oration was delivered to 90 members of the Australian dairy industry including board members of Dairy Australia and Australian Dairy Farmers, NCDE education partners and Regional Development Program board and executive representatives.



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Award for promoting dairy careers

Key points

- ✓ Dairyfarmer acknowledged for promoting industry
- ✓ Cows Create Careers highlights dairy career opportunities

LOUI Lettieri, a dairyfarmer from Birregurra in Victoria, was recently acknowledged by Bellarine Secondary College for his involvement as a dairyfarmer advocate in Dairy Australia's Cows Create Careers farm module, with principal Alison Murphy presenting Mr Lettieri with a certificate and small gift.

Each year the college hands out the Fred and Olive Mason award to someone who has generously contributed to the school community. Principal Alison Murphy said Mr Lettieri was a deserving recipient for his work to promote the dairy industry as a rewarding and challenging career.

"Many students are unaware of the rewarding career opportunities the dairy

'I jumped at the opportunity to share my love of dairy ...'

industry has; Mr Lettieri's involvement with Cows Create Careers helps the students see dairy as an attractive career option," Ms Murphy said.

"We thank Mr Lettieri for providing our students with such a rich opportunity to engage in a meaningful way with the industry."

Mr Lettieri and his wife, Mary, are huge advocates for the industry. Mr Lettieri was approached to be part of the Cows Create Careers farm module five years ago and has never looked back.

Mr Lettieri said he was proud to be recognised for his work by the college.

"When I heard about the program, I jumped at the opportunity to share

my love of dairy with the students," Mr Lettieri said.

As part of the program, students look after two calves for three weeks. Mr Lettieri delivers the calves to the school and teaches the students how to look after them.

"I also invite the students out to my farm so they can see a dairy in action," he said. "They get to hear about breeding and genetics and I also get someone in to talk to them about the manufacturing side."

"There are so many jobs in dairy — it is not all about milking cows. There are opportunities for vets, technicians, field officers, nutritionists and for people to work in transport, genetics or marketing and sales."

"I hope I can keep doing Cows Create Careers, I really do enjoy it. Seeing the students at my farm and being able to teach them something about the dairy industry is fantastic." **D**



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BEFORE



AFTER



Bank looks at valuing natural capital

- Key points**
- ✓ Environment to be incorporated into lending
 - ✓ System needed to value environment
 - ✓ Market not only way to value things

By Matt Cawood

THE environment is making its way onto the books of National Australia Bank (NAB), under the column “natural capital”. Eventually, the bank hopes to redraft some of its lending terms around how well, or how poorly, businesses manage natural capital.

The environment has been conspicuously absent from financial decision making, but NAB is reviewing that gap after last year becoming the only Australian bank to sign onto the global Natural Capital Declaration.

The declaration registers that environmental risk is a substantial threat to the finance sector, while there are substantial benefits in incorporating environmental considerations into decision-making.

NAB’s agribusiness general manager, Khan Horne, said the bank’s commitment recognised that farmers who effectively managed natural capital — water, soil, energy — “generally have a more robust and resilient business model”.

“In the long-term, they are seeing improved profitability as a result of reduced input costs, or more consistent yields across time,” he said.

At the moment, NAB’s action on incorporating “natural value” into its agribusiness practices extends to having conversations with its bankers in the field, alerting them to the concept and asking them to consider how natural capital can feature in their programs.

“It’s a conversation piece about identifying best practice, and equipping our bankers with the confidence to have a conversation,” Mr Horne said.

“I’ve been around agricultural banking for 20-odd years. It was always intuitive to recognise soil quality, water quality. I can see that henceforth this will be closely linked to valuations,

‘The environment has been conspicuously absent from financial decision making, but NAB is reviewing that gap...’

cashflow budgets and loan evaluation ratios, all of which will link to our credit appetite.”

He foresees a time when an agribusiness’s management of natural capital will translate to more favourable lending — in credit or repayment terms, credit story or conditions or covenants.

“The first piece will be having those conversations; the second piece will be the financial implications,” Mr Horne said. “But that’s definitely where this is leading to.”

Yet right now, the only element of natural capital that NAB will address directly through lending is energy. Mr Horne said the bank was willing to talk ▶



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Dairyfarmer says going green 'saves money'

DAIRYFARMER John Fairley said: "Every time I go green, I save money."

Mr Fairley and his wife, Sally, dairy-farmers at Picton, New South Wales, have become pin-ups — literally — for NAB's 'natural capital' push.

The couple and their business, Country Valley, under which they bottle and sell their own milk, is featured in NAB's 2015 Agribusiness calendar, which carries the theme "Pioneering Natural Value".

Mr Fairley said he had long been interested in a more ecological approach to farming, but it came to a head after the costs of building a new dairy shed made it financially impossible to fertilise and spray his paddocks on the rotations he had been using.

To his surprise and delight, the soil regained a natural equilibrium and his pastures bloomed in the absence of inputs.

These days, the dairy only applies manure to its pastures. It sources green energy (14% cheaper than the conventional product they had been using previously, Mr Fairley said), installed solar panels and aimed to eventually install a methane biogas digester.



John Fairley: never done anything "green" that didn't work out financially favourably.

Before the current Federal Government was elected, Mr Fairley had government support that would have paid half the cost of the unit.

He lost the subsidy with the change of government, but found that his new NAB bank manager had been exposed to the favourable economics of biodigesters in

piggeries at a previous posting and was supportive of the idea.

Mr Fairley has a few pieces of the puzzle to put in place before he goes ahead with the unit, but so far, he claims, he's never done anything "green" that didn't also work out [to be] financially favourably.

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Change in attitudes

The concept of natural capital has been discussed for several decades, but economists worldwide have yet to satisfactorily bridge the divide between the hard, quantifiable world of numbers and the fuzzy, constantly-shifting realities of the environment.

But Rob Constanza, chair in Public Policy at the Crawford School of Public Policy in Canberra, said he believed things were changing.

"There's a change in worldview and a recognition that all these types of capital are required to produce economic output, and that they also feature in human wellbeing and other ways not picked up in the marketplace," Dr Constanza said.

"There has been a narrow view that only what you can sell on the market counts. But the things that are not marketed can be equally as valuable as the things that are marketed, if not more valuable. How do we bring those into the decision-making process?"

Financial institutions are becoming interested in non-marketed ecosystem services as the recognition grows of their value on a degrading planet.



Management of natural capital, such as by planting trees, could eventually translate to more favourable lending for Australian farmers.

"You can think of a farmer as not just producing crops, but fresh water, healthy soil, carbon sequestration and a range of other things that are not marketed, but they could be compensated for production of those services in some way."

Dr Constanza doesn't see a direct market in many ecosystem services as valid, but other concepts abound.

"Common asset trusts" is one idea. For instance, clean water is a common asset that potentially, businesses could be rewarded for contributing to or penalised for devaluing.

Most farmers are acutely aware

of the need to maintain natural capital.

A NAB survey found that in the past two to three years, 88% of fruit and vegetable growers have made changes to their businesses as a result of natural resource sustainability issues such as managing water scarcity (66%), soil health (52%), reducing energy costs (49%), minimising runoff (36%) and managing waste (32%).

In the same survey, 77% of grain growers and 76% of livestock producers reported that they have made natural capital improvements in their businesses in the past two to three years. **D**

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Warning on China market

Key points

- ✓ Chinese market regulation challenging
- ✓ Vital to have people on the ground
- ✓ Speed of change having impact
- ✓ Regulation playing a big role

By Louise Preece

WHILE Australia has signed off on the free trade agreement with China, one dairy analyst has sent out a cautionary word of advice to primary industries. The long-awaited deal has been hailed by many as a golden opportunity for numerous agricultural sectors across the country, but Rabobank's director of dairy research New Zealand and Asia, Hayley Moynihan, said Australia would be wise to learn a few lessons from NZ's experience with China.

"New Zealand's experience is certainly that the FTA doesn't provide a silver bullet in terms of dealing with regulation in the market place," she told a Gardiner Foundation event in Melbourne recently.

Ms Moynihan said the transformation of the infant milk formula market in China in past 12 to 18 months was an example of how quickly regulation could change.

"In NZ we have three brands (of infant formula) to choose from," she said. "In China, there's a whole aisle — going from geriatric formulas all the way to infant formulas."

"So it is vast. And while that's provided a lot of choice, it is also difficult to see where a lot of it comes from."



Hayley Moynihan: NZ learnt valuable lessons from recall of infant powder.

This uncertainty in country of origin, combined with the Chinese milk melamine scandal of 2008 (which saw six infants die from kidney stones and kidney damage and 54,000 hospitalised), led to a tightening of regulations.

Pricing of imported infant formula also became a concern.

"The Chinese Government undertook an investigation into pricing, which found foreign companies were being anti-competitive — and some were fined. They forced prices to come down more relative to domestic products," she said.

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'New Zealand's experience is certainly that the FTA doesn't provide a silver bullet ...'

This in turn forced consolidation of the sector, so the sector could be more effectively controlled. From 300-plus infant formula brands, the Government set a largely reduced target of about 100.

Supply chain audits were also introduced, and brands had to be certified.

"There were NZ manufacturers that missed out on that certification ... it certainly had an impact despite the warning," Ms Moynihan said.

"This provides an example of how things can change. This is a market that can change quite quickly."

She said when it came to market regulation, NZ had learnt that having established relationships in place on the ground was critical to getting product to the right places.

"It's about having investment in time and commitment, and actually having local people on the ground," she said.

Fonterra NZ had to recall products after suspected botulism-causing bacteria were found during safety tests — and China placed a temporary ban on whey products from NZ.

As a result of the recall, she said the country learnt some valuable lessons. A number of changes have occurred, including having more people on the ground in China. The biggest thing learnt was not to have a 'ship it and send it' attitude, she said.

"Without the investment in time, money and people, it is hard to capitalise on opportunities," Ms Moynihan said.

Although she said China was an exciting market place, she said the speed of change was having an incredible impact on the dairy market.

"It is not easy, it is changing rapidly, and the hand of regulation is playing a big role," she said.

NZ milk production drop tipped

FARMGATE milk prices have plunged in New Zealand for the 2014-15 season, and a drop in production is anticipated. Hayley Moynihan, who is Rabobank's director of dairy research New Zealand and Asia, said many NZ farmers would be doing it tough, with many unable to purchase supplementary feed through summer.

Cashflow would be tight, but she expected prices to recover at the end of 2015.

Ms Moynihan said NZ was more susceptible to changing global dairy prices, compared with Australia, because the country relied solely on exports to drive the industry.

While sharing her thoughts on the industry at a recent Gardiner Foundation event in Melbourne, she also revealed an uncertain future for exporting fresh liquid milk overseas. While New South Wales-based dairy co-operative Norco has found success with flying liquid milk to China, with the product retailing at \$9/litre in Shanghai, Ms Moynihan said the concept was a tricky one.

"There is a market opportunity there," she said. "But one of the things I observed this year in China is a compaction of price points in both the fresh milk and UHT category."

"The difference between premium and standard products has narrowed. It is risky and you are looking at that gap closing ... and potentially closing rapidly."

She said the carbon footprint could also become an issue.



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Nuffield Scholar steps into the future

Key points

- ✓ Nuffield scholarship provides inspiration
- ✓ Automated rotary dairy systems explored
- ✓ New ryegrass varieties and genomics studied

By Alexandra de Blas

GIPPSLAND dairyfarmer Aubrey Pellett wanted to look into the future to see how cutting-edge technology could transform dairy-farming and the dairy industry in the years ahead.

Winning a Nuffield Australia Farming Scholarship in 2014 gave him that opportunity.

"I was looking for new ideas and inspiration for our farming business and I wanted to be able to paint a picture of what's coming and how it will make us more efficient and profitable," Mr Pellett said.

The Gardiner Dairy Foundation, in partnership with Nuffield Australia, invests in an annual scholarship for the Victorian Dairy Industry. The scholarship starts with a Global Focus Program.

starts with a Global Focus Program. Mr Pellett joined farmers from around the world on a six-week tour of industries as diverse as goji berry farms in China, rice factories in the Philippines and farms across Europe and North America.

"It gives you a much broader perspective on what different countries are facing, exposure to international trade and opportunities to meet with

people such as those who helped form the US Farm Bill in Washington DC," Mr Pellett said.

Robotic milking

Mr Pellett took two individual study trips to focus on his areas of interest. One of his most exciting discoveries came while on a four-country tour of robotic milking technology manufacturers in Europe.

Most automated milking systems are developed for barn systems and lend themselves to voluntary rather than batch milking, which can be a challenge for the pastoral system in Australia where demands are more seasonal.

Voluntary milking can present difficulties when cows in late lactation are less motivated to be milked or when very hot, cold or windy weather conditions make cows reluctant to walk to the dairy.

The robotic technologies available in Australia can also be costly for herds larger than 300 head — such as his own herd of 450 cows in Hill End, Gippsland.

Mr Pellett was most inspired in Germany where he visited the world's first commercial dairy using a special rotary robotic milking system.

"The GEA DairyProQ, which is likely to be available in the Southern Hemisphere within the next few years, could be a game-changer for large Australian dairy farms," he said.

The cow walks into the stall on the rotary, the robotic arm attaches the machine to the cow and milks it. This

'I've now got a lifelong connection to the Nuffield network, which extends all around the world.'

is the only system with a robot on every bail, which improves throughput and allows more time for re-attachment should the cups detach during milking.

A 40-bail platform would allow 160-200 cows to be milked in an hour, although one of the system's advantages is that it is modular and the size can be varied depending on herd size.

"I think it's the best thing I've seen in terms of suitability to Australian conditions, because it can milk larger herds in a batch-milking system, it enables cows to be managed in adverse weather conditions and allows you to retain your focus on grazing management," Mr Pellett said.

He said he saw its potential not just in terms of productivity, but also for improvements in working conditions and relief from the "relentless" nature of dairyfarming.

A robotic system would mean fewer people would be needed at each milking and Mr Pellett believes the new technology could attract a different type of worker to the industry.

"The information that flows out of these systems is really terrific," he said. "All the production and milk quality figures are available for each



Visiting the Yili dairy factory in China. Back row: Steve Wolfram (Canada), Aubrey Pellett (Australia), Nigel Corish (Australia), Paul Olsen (New Zealand), Greg Gibson (Australia). Front row: Tania Chapman (Australia), Justine Dutheil (France), the tour guide, Finola McCoy (Ireland) and Nicky Mann (Australia).



In front of the White House. Back row: Nigel Corish (Aus), Steve Wolfram (Canada), Paul Olsen (NZ), Greg Gibson (Aus), Aubrey Pellett (Aus), Front row: Tania Chapman (Aus), Nicky Mann (Aus), Finola McCoy (Ireland), Justine Dutheil (France).



Australian Nuffield Scholars in Amsterdam Nigel Corish, Nicky Mann, Greg Gibson, Aubrey Pellett, Tania Chapman and Emma Germano.



Cows being milked by GEA DairyProQ in Germany.

milking, and some tools of herd management systems even weigh the cow, tell you when she is on heat and when she needs to be inseminated."

As he sees it, automation would shift the farmer's focus to higher value activities such as managing the profitability of the farm. "Am I allocating the right amount of feed, have I got the right cows, how are they performing, what changes do I need to make?" Mr Pellett said.

Pastures and fodder crops

Other technologies he investigated included developments in ryegrass genomics, which will see improved ryegrass cultivars being bred in half the time.

He looked at the development of beneficial endophyte fungi which, when introduced to ryegrass, could protect the crop from common pasture pests such as cockchafer, Black

Beetle, and nematodes — while being safer for stock to eat.

He also saw how dairyfarmers in New Zealand are improving productivity by using high-yielding fodder beet as a key grazing crop.

It's possible to grow more than 25 tonnes per hectare/dry matter of very high quality feed — an option he intends to explore on his own farm.

Nuffield Scholars prepare a report to share their new knowledge and make recommendations to the industry. Mr Pellett said he endorsed the development of a Pasture Index for Australia, as some countries had done, which would allow farmers to identify pastures most likely to perform well in their location.

Encouraging dairyfarmers to apply

It wasn't just the immediate learning

opportunities that encouraged Mr Pellett to apply for the Nuffield Scholarship.

"I was attracted by the quality of previous Nuffield Scholars that I had met, I learnt a lot from the people I travelled with and I've now got a life-long connection to the Nuffield network, which extends all around the world," Mr Pellett said.

He strongly recommends farmers apply, as the Nuffield name opened doors when organising his study tours, and the experience has inspired him to create a more successful farm business.

While many farmers hesitate because of the travel time away from farm and family, Mr Pellett said he believed it was manageable with good planning.

"It lifts you up out of your own day-to-day world and your own industry," he said. "It's definitely been a tremendous experience and I couldn't recommend it more highly."



The GEA DairyProQ milking platform that Aubrey Pellett saw in Germany and which he believes could be a game-changer for large farms.

Applications opening soon

THE Gardiner Foundation encourages dairyfarmers to consider the benefits of applying for a Nuffield scholarship to put their operation in a global perspective. Applications for 2016 Scholarships will open on April 1 and run until the end of June, 2015.

Scholarship details are at <www.nuffield.com.au>. Winners are announced at the Nuffield Australia National Conference, held later this year. The scholarship begins early 2016.

Contact: Website <www.gardinerfoundation.com.au>, phone (03) 8621 2900.

Cows and IronKids hit WA beach

Key points

- ✓ Event raises dairy profile
- ✓ Promotes dairy for muscle recovery
- ✓ Backed by latest science

WESTERN Australia's dairy-farmers helped put on a Legendairy display on the beaches of Busselton in December, headlining the Legendairy IronKids event as part of the annual Ironman Western Australia competition.

In a stunning show of support for the local dairy industry, nearly 300 competitors aged eight to 12 were joined on the sandy shore by 12 parading dairy cows and calves, along with 50 dairy industry personnel and an estimated 500 spectators and community members.

"Being involved in Legendairy IronKids is a great way to raise the profile of dairy and show that we're a

key element of the community," Western Dairy executive officer Esther Price said.

"The dairy industry makes a healthy product that helps children to grow and enjoy active lives, so the event was a natural fit."

"We handed out more than 1400 containers of flavoured milk and yogurt to the children and spectators, which was a great chance to drive home the message that milk is a valuable part of exercise as an excellent recovery drink."

The message is backed up by the latest science, and many professional athletes around the world are turning to flavoured milk as their first choice for a recovery beverage after exercise instead of traditional sports drinks.

The cow parade, led by local dairy-farmers, kicked off the event. Western Dairy chair Victor Rodwell, of Boyanup, WA, then started the race with



Victor Rodwell and dairy cow Rose fire the starter's whistle.

Photo provided by Delly Carr, Ironman.

the starter's whistle in one hand and his five-year-old Holstein, Rose, in the other.

"It was great to be able to showcase our people, animals and industry," Mr Rodwell said.

"The connection we made with the community was quite inspiring, because there were people who'd never been up close with cattle before."

The idea for integrating Legendairy with the IronKids event came from a Legendairy workshop held by Dairy Australia to brainstorm ideas with WA dairyfarmers for regionally focused opportunities to promote the industry.

"It's a great example of 'if you can dream it up, we can do it'," Ms Price said. "We had a group of farmers who came up with some fantastic ideas to connect dairy to the community, and we're delighted that we could make one of these into such a quick success."

The crowds were also treated to displays of local dairy products, free information, and Legendairy merchandise, and milking demonstrations were given throughout the day.

Calves were available for petting and bottle-feeding, and staff from the WA Department of Agriculture and Food also participated in information sessions.

"It was very rewarding to be involved with so many passionate young people in the industry, including dairy staff and researchers," Mr Rodwell said.

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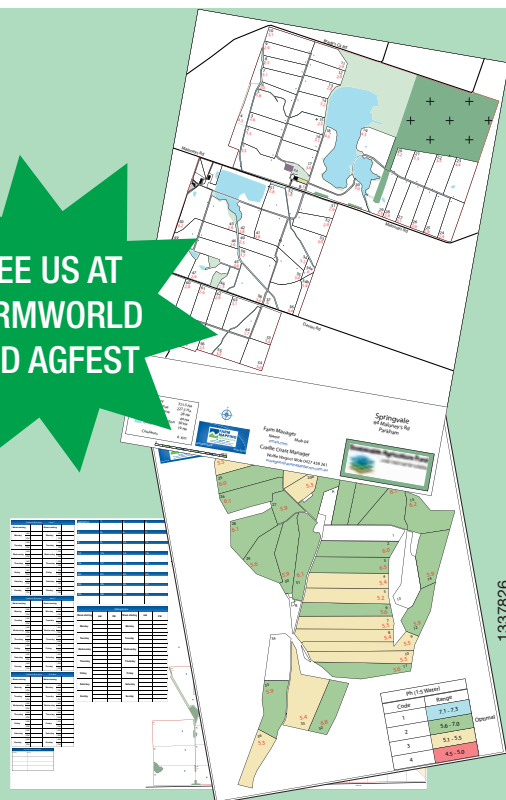
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References: 1. O. AlZahil *et al.* 2008, *J. Dairy Sci.* 91:1166–1174. 2. R. Martineau *et al.* 2007, *Canadian Journal of Animal Science*, 88, 335–338. © 2014 Zoetis Inc. All rights reserved. Zoetis Australia Pty Ltd Level 6, 5 Rider Boulevard, Rhodes, NSW 2138. www.zoetis.com.au 04/14 AM03119 PAL1105.

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A Legendairy footy fanfare

- Key points**
- ✓ Long history between AFL and dairy
 - ✓ Collingwood has large supporter base
 - ✓ Match day dairy activities planned

FOOTY rivalries might divide family dinner table conversations around the country, but for one Saturday afternoon in April, the Australian dairy industry will be celebrated on the national stage in a Legendairy Farmer Round clash between the Collingwood and Adelaide Football Clubs.

The nationally televised match, held at Melbourne's Etihad Stadium on April 11 in Round 2 of the 2015 AFL Premiership Season, will celebrate the dairy industry and particularly dairy-farming families and communities across Australia.

"The match is an opportunity to recognise all of the superb peo-

ple who make up our industry and highlight a superb product that is a mainstay in the diets of all Australians, particularly those that will be performing on the field," Dairy Australia's group manager for industry promotion and product innovation Isabel MacNeill said.

"Being involved with a community sport like the AFL at a high-profile event like this is a really positive thing."

Dairy and AFL have enjoyed a long history together, with footy an essential part of many regional communities. Today, some of the AFL's biggest stars hail from dairying backgrounds, including Collingwood captain Scott Pendlebury, who grew up in Sale, in the heart of Victoria's Gippsland dairy country.

"My grandfather owns a dairy farm in Gippsland, so I have grown up with a real appreciation for the industry and have seen firsthand the impor-

'Farmers coach and play footy, their kids play footy, and some farmers have represented clubs in football in the past'

tance of dairyfarming to local communities," Mr Pendlebury said.

"It will be great to use our Round 2 match to help recognise the great contribution dairyfarmers make to Australia."

The Legendairy Farmer Round is just one piece of a partnership Dairy Australia has developed with Collingwood Football Club, which has the largest membership base of any AFL club, and one of several significant Legendairy sporting partnerships planned throughout the coming year. ►

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Collingwood captain Scott Pendlebury will help the AFL celebrate the dairy industry at the Legendairy Farmer Round in April.

Others include a school health initiative with the Sydney Thunder cricket team and the Dental Association of Australia, a Legendairy swim event with Michael Klim, and a national partnership with Anytime Fitness gyms, among others.

"Collingwood is a strong community-based club, which is something that's really attractive because it aligns very much with our industry values," Ms MacNeill said.

"Similarly, footy is community focused. Farmers coach and play footy, their kids play footy, and some farmers have represented clubs in football in the past.



'The Legendairy Farmer Round is just one piece of a partnership Dairy Australia has developed with Collingwood Football Club, which has the largest membership base of any AFL club.'

"Footy can help build a positive association with the dairy industry, the products it produces and their nutritional contribution. It supports our industry values of being healthy and active and takes those messages to a wide group of people."

Collingwood will also promote the event and share stories of dairyfarmers with its fan base through social media and online, and a range of dairy-related activities at the stadium on match day will bring the industry right into the arms of fans.

The club's dietitians are also strong supporters of dairy foods, encouraging players to incorporate dairy into their diet to help them meet their nutritional goals and in their match preparation and recovery.

While the opening bounce might signal a battle between two competing flocks of birds, it's safe to say that it will be dairy that comes out on top of what is sure to be an exciting and memorable day.






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The role of dairy in health



By **Emma Glassenbury**
 accredited practising dietitian
 Dairy Australia

WELCOME to Dairy Australia's new column on what we're doing to promote dairy health and nutrition to all Australians.

Farmers don't need to be convinced about the value of dairy. We know dairy foods naturally contain 10 essential nutrients — but not all Australians realise there's a lot more to it than just calcium.

In this new feature in the *Australian Dairyfarmer*, we'll share a heap of fascinating new health research and the many activities taking place in the dairy nutrition area to improve Australians' health and wellbeing. There's a lot going on.

At Dairy Australia, we have a team of dedicated, accredited practising dietitians and nutritionists who are passionate about dairy foods and their health benefits. We're working on many initiatives, such as health education activities to increase dairy consumption, and we're supporting research projects in collaboration with world-renowned scientific organisations, both locally and overseas.

Research shows kids need more dairy

Just recently, in fact, research conducted by the CSIRO¹ for Dairy Australia revealed that children who don't include dairy foods at the first eating occasion of the day — in most cases, breakfast — don't catch up on their daily nutritional requirements throughout the rest of day.

Conversely, children who included dairy in their early morning routine went on to consume on average 29% more dairy foods for the remainder of the day, compared with those who did not start the day with dairy.

That's a huge difference, and it's a story we need to be sharing with the Australian public to close the concerning gap between nutritional requirements and actual consumption for Australian children. Put bluntly — most Aussie children simply aren't getting enough milk, cheese and yogurt.

The research gave us an excellent opportunity to get dairy on the national agenda at the start of the school year, and we've used it to generate publicity in news and print media nationally.

CSIRO's lead researcher, Malcolm Riley, said that children need to increase their dairy intake as they grow, with boys and girls recommended to have 1.5 serves a day at two years of age, jumping to 3.5 serves a day by the time they reach age 12.

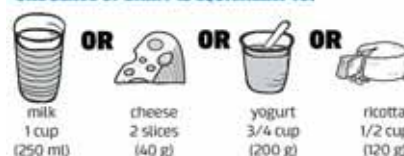
An alarming trend is that dairy foods are featuring less and less at breakfast time as children get older — with the worst offenders being girls. ▶

MINIMUM RECOMMENDED NUMBER OF SERVES FROM THE DAIRY FOOD GROUP

	Age (years)	No. of serves per day
Men	19-70	2 ½
	70+	3 ½
Women	19-50	2 ½
	50+	4
	Pregnant or breast feeding	2 ½
Children	2-3 girls and boys	1 ½
	4-8 boys	2
	4-8 girls	1 ½
	9-11 boys	2 ½
	9-11 girls	3
	12-18 girls and boys	3 ½

Adapted from 2013 Australian Dietary Guidelines. The dairy food group includes milk, cheese and yogurt and/or alternatives (1 cup (250ml) soy beverage or beverages made from rice or other cereals which contain at least 100 mg calcium per 100ml).

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◀ Overall, about 60% of Australian children aged two to 16 years fail to meet the recommendations of the Australian Dietary Guidelines for the dairy food group, jeopardising their health and crucial bone development.

As both a dietitian and a mum of three young children, I look at this with two different — but related — hats on.

First, as a dietitian, I see a tremendous opportunity to reinforce break-

fast as a critical time for putting milk, cheese and yogurt on the menu.

Through the Legendairy platform's Start and End Your Day with Dairy message, we're doing just that.

While starting the day with the dairy food group is clearly an important message, we're not forgetting that the end of the day is also a chance to fit in a serve of dairy, such as a milkshake, smoothie or after-school toastie.

If we can think of the dairy food group as bookends to start and end our day — and our children's day — we'll be well on our way to meeting our daily dietary recommendations. It's a strong example to be setting for our kids.

As a mum, it's an important reminder that I can make a difference with some simple lifestyle habits for my kids and give them an advantage from the moment they walk out the door to school. And now, with the school year underway, it's the perfect time to start.

So what exactly is a serve of dairy?

In 2013 the Australian Dietary Guidelines made updated serve recommendations for the dairy food group for all Australians. And there's no longer a simple answer when it comes to how much dairy food you need a day — it all depends on age and gender.

'An alarming trend is that dairy foods are featuring less at breakfast time.'

Not surprisingly, through our work we know that many Australians are confused about how much they need and what exactly a serve comprises.

We also know that most of us don't consume enough from the dairy food group, which means we are missing out on all the health benefits linked with milk, cheese and yogurt.

So, we're working hard to change this trend. To set the serves story straight, we've come up with a new graphic to help people more easily see how many serves they need from the dairy food group and what constitutes a serve.

This at-a-glance reckoner is on all our new fact sheets on the Legendairy website, and it's shown in this article as well.

For more information on how Dairy Australia is promoting dairy nationwide and tips for nutritious and delicious ways to start and end the family's day with dairy, visit <www.legendairy.com.au/startandend>. **D**

1 Riley, M.D.; Baird, D.L.; Hendrie, G.A. Dairy Food at the First Occasion of Eating Is Important for Total Dairy Food Intake for Australian Children. Nutrients 2014, 6, 3878-3894 <www.mdpi.com/2072-6643/6/9/3878>.

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Production heads towards modest growth



By **Glen Fisher**
Industry analyst
Dairy Australia

Key points

- ✓ Year-to-date production up +2.6%
- ✓ Seasonal conditions limit production in some areas
- ✓ New investments bolster positive sentiment

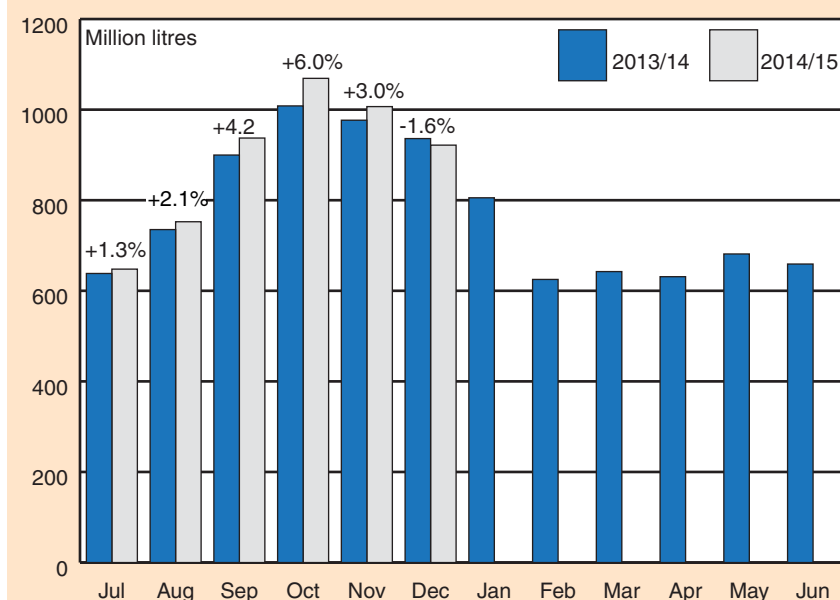
WITH what the Bureau of Meteorology (BoM) confirmed as Australia's warmest spring on record slowing but not derailing the 2014-15 season, at the time of writing, milk production is tracking towards +2% growth year-on-year at the national level.

Before the summer seasonal slowdown, reflected in the -1.6% decline for December (compared with December 2013), the milk flow had been supported by the continuation of generally positive production conditions, especially across the south-eastern dairying regions, and the maintenance of relatively high farmgate milk prices.

Despite December's softer numbers, the available data to hand, the year-to-date (YTD) figures show production tracking about +2.6% above the prior year's level. Overall, conditions have been supporting positive growth across most regions and states except for Western Victoria, Queensland and South Australia. In those regions, many farmers have been persistently challenged by the combination of adverse seasonal conditions persisting and relatively elevated input costs.

The overall situation for farmers across the country remains more positive, particularly in export-focused pockets of Victoria, NSW and Tasmania. Buoyed by generally favourable conditions and positive sentiment, production in Tasmania continues to stride ahead with solid, double-digit growth, up +12.4%. Meanwhile, improved seasonal conditions in both NSW (with timely rains supporting pasture growth for a later and higher peak) and Western

Figure 1: Australian Milk Production by Month



Australia (tracking for a stronger second half compared with recent years) helped those states record relatively strong increases of +4.0% and 4.4 respectively.

In Victoria, better rainfall patterns and good pasture growth have boosted production in a resurgent Gippsland (+6.1%), while less consistent rainfall but otherwise generally adequate conditions have supported continued growth also in Northern Victoria (+3.0%) despite mounting irrigation water costs representing a constraint. With the impacts of preceding dry seasons lingering, however, Western Victoria has experienced lower rainfall and a drier-than-hoped-for first half of the season (-2.3%).

On the export front, higher raw milk production supported a +1.8% increase in dairy product export volumes for the six months from July to December to 370,427 tonnes. At the same time, given still relatively low international dairy commodity prices prevailing particularly for whole milk and skim milk powders, there was a +13.3% decline in overall average export returns delivering a -11.7% decrease in total export value to \$1386 million.

Meanwhile, export dairy cow numbers were up year-on-year, 5.6%, although marginally softer average per head returns led to a slightly lower

3.1% increase in total export value to \$199 million.

Still, with national milk production having peaked higher for the first half of the 2014-15 season than in the preceding season, the full-year production outlook remains favourable at the national level. Positive factors supporting production in the back half of the season include major exporting companies' still relatively high farmgate pricing and the abatement of a potential El Niño event, given the BoM has ascribed a 'neutral' outlook on that potential dampener, with further upside potentially from cooler, wetter months mirroring January.

New investments are also continuing to stoke positive sentiment across different dairying regions: from Queensland, for example, with the Hope Dairies project centred on the South Burnett region, through Victoria, where encouraging developments include the 'rebirth' of the former Bonlac Camperdown site via Camperdown Dairy International; and over in Tasmania, where plans for a number of dairy farms are reportedly at various stages of progression. The investments themselves are testament to the conviction, long-term resilience and opportunity persisting in the Australian dairy industry. **D**

Contact: Glen Fisher, email <gfisher@dairyaustralia.com.au>.

Global milk supply market shows growth



By John Droppert
Analyst
Dairy Australia

- Key points**
- ✓ Prices starting to recover
 - ✓ New Zealand forecasts production fall
 - ✓ Strong growth in US production

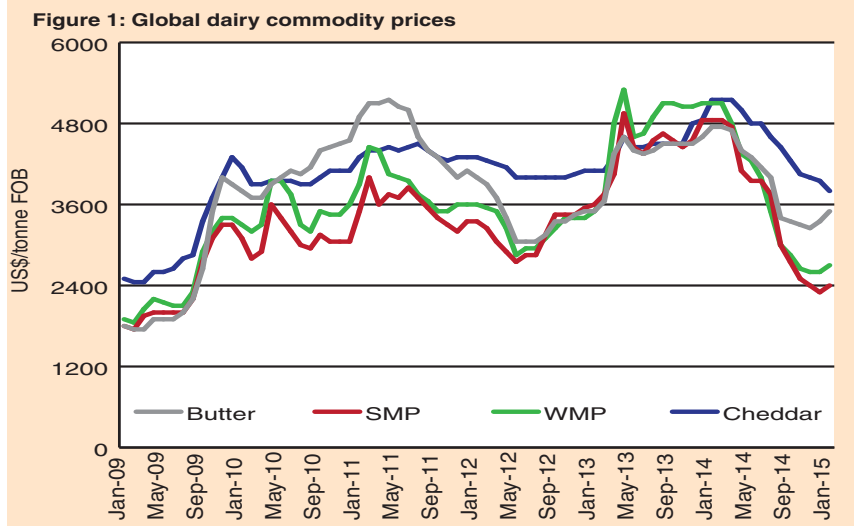
GROWTH in global milk supply is slowing and markets are paying attention. This is supporting a positive start to 2015 following months of downward trends.

However, despite favourable indications, commodity prices remain well down on the peaks of 12 months ago (and below five-year averages), with the restoration of greater supply-demand balance remaining susceptible to disruption.

Recent GlobalDairyTrade (GDT) auction results suggest the market may finally be lifting from a late 2014 floor, with the overall weighted average up 17% since the start of the calendar year. The February 17 event (#134) provided the biggest increase: 10.1% on average.

Milk powder — particularly whole-milk powder (WMP) — returns have been boosted by a deteriorating supply outlook as parts of New Zealand dry out. On February 12, the New Zealand Government made an 'adverse event' declaration for about half of the South Island: west of the Main Divide through Marlborough, Canterbury and parts of Otago, down to just south of Dunedin. This formalises the drought that has already prompted a rapid seasonal 'taper' in milk production after a strong start.

Fonterra recently surprised many by slashing its full season intake forecast to 3% below that of the 2013-14 season. Based on the data available to December (showing growth of 4% across the industry), monthly volumes would have to average about 15% below last season until May to meet this forecast.



Lower farmgate prices are certainly influencing a shift away from supplementary feeding and prompting early dry-off and cull decisions. Fonterra's price guidance was reduced to NZ\$4.70/kg milksolids (about A\$4.55/kg MS) in December, and most other processors are now at similar levels.

Production growth is also slowing in Europe, as farmgate prices tumble amid calls for further market intervention by the European Commission. The backbone of their response to date, the Private Storage Aid (PSA) program, has accumulated stocks of about 20,000 tonnes of SMP and just slightly more than 30,000t of butter, following several extensions. The opening date for sales into public intervention (where the commission buys, rather than subsidises storage of the product) was brought forward two months to January 1.

However, no product has been sold into storage at the time of writing: while European SMP traded close to intervention levels (1698/t, about US\$2000/t) for a time, the depreciating euro lifted prices. Hence, stocks are not particularly burdensome, and significant additions during the Northern Hemisphere peak are made less likely by increasing pressure on production margins. In addition, a number of member states (Ireland, Germany and Denmark among others) are expected to incur large super levy fines for exceeding quotas in the final 2014-15 year: per litre penalties are likely to be in excess of the farmgate price. Given these economics, Euro-

pean milk production is expected to slow further and perhaps turn negative during 2015.

US markets have been slower to adjust to changes in global prices, and strong margins have driven continued milk production growth, expected to last until the second half of 2015. Local analysts suggest many farmers have paid down significant amounts of debt and forward-purchased feed, boosting resilience in the face of declining market conditions. The exception is California, which remains in the grip of a severe drought. Nationally, the latest US Department of Agriculture forecast suggests 2.8% growth for the full year; a slight revision downwards.

Despite the growth in production, US exports saw a sharp reversal in late 2014 — down 7% in November. However, given a comparatively steady \$US, US dairy product is expected to return to export markets as the imbalance between domestic and international pricing moderates.

While the market remains supply driven, conflicting indications about China's import prospects, as well as the likely continuation of the Russian embargo, remain wild cards from a demand perspective. Across other markets, attractive pricing is supporting continued trade-up to dairy fats, while milk powders and liquid milk are seeing firm growth. Cheese volumes are experiencing more modest increases. The signs are positive, but any recovery is expected to be gradual, rather than dramatic.

Contact: John Droppert, email
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Parent#1.



Progeny.




Parent#2.

Italian ryegrass plots in November 2014. The first-cross progeny outperforms its parents, often by 20% or more.

Plant research to deliver big returns

Key points

- ✓ Ryegrass hybrid breeding on horizon
- ✓ Genomics used to select better grasses
- ✓ Identification of more than 100 endophytes



By Carlene Dowie

BREAKTHROUGHS in conventional plant breeding research at the Dairy Futures Co-operative Research Centre could deliver \$500-\$1000 a hectare to Australian dairy-farmers in the next 10 years.

Dairy Futures CRC's chief executive Dr David Nation said some of the research promised to change the way ryegrass-breeding programs were designed in the future, offering gains for farmers for decades to come.

None of this work involved genetically modifying (GM) plants. A GM program was also underway at the CRC but comprised only about 20% of its work, he said.

The advantage of the conventional plant-breeding research was that it could be used immediately by seed companies. Farmers could use any commercial varieties that were produced by the conventional programs without regulatory restriction.

"None of this (conventional research) involves anything that is regulated," Dr Nation said. "The technology that works can be used quite effectively by commercial partners without any delays or added costs that occur when a technology is regulated."

But the complex and lengthy proc-

ess of plant breeding means even initial gains from the program are still at least three years off for farmers.

Dr Nation said plant breeding was significantly more complex than animal breeding. Plant breeders were aiming to breed a stable population of plants rather than an individual specimen. This stable population then had to be able to produce seed in commercial quantities.

But the population also had to have some genetic diversity so that a bag of seed produced from it would be effective in the variety of different situations in which it could be planted.

'Plant breeding is significantly more complex than animal breeding.'

A typical plant-breeding program for ryegrass took 12 years from when the research began to having commercial seed available to farmers.

"Most of the breeding happens in year one to six and then you have up to six years of testing," Dr Nation said. "So some of these changes (from CRC research) will be really useful, but farmers won't see them until the new varieties come out the other end of that pipeline."

Plants were also more complex at a genetic level. In animal breeding, large blocks of DNA were shuffled from parent to child, but in plants, DNA was shuffled in smaller blocks, making it trickier to identify the impact of individual genes.

Plant breeders also did not have access to "family trees" of plants as ani-

mal breeders had, making it hard to identify the superior genes.

Dr Nation said there were a couple of advantages for plant breeders. Progeny testing was easier — a plant could be broken into pieces and tested in a variety of environments or for different things, while the generational interval was shorter, with plants having a shorter lifespan.

The CRC hopes to have three major areas of conventional plant breeding work completed by the time it finishes in 18 months: hybrid breeding, genomic selection and reselection and endophyte identification.

Hybrid breeding

"Hybrid breeding is the big shining light on the horizon," Dr Nation said. It had the potential to completely change ryegrass breeding and lead to the development of super varieties.

Conventional ryegrass breeding had always seen the creation of exceptional first-cross hybrid plants. But these had to be ignored by plant breeders because all of the benefits were lost during subsequent breeding to produce commercial quantities of stable seed.

In other plants, such as corn, rice and some horticultural crops, hybrids were able to be bred because of the way in which the plants were fertilised. Corn, for example, had separate male and female plants so crossbreeding was relatively simple in that plant breeders used a female population of one variety and a male population of the other.

But ryegrass had complex genes that controlled fertilisation. Not only did these prevent self-fertilisation, ►

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◀they also restricted pollen pathways, allowing only some plants to pollinate other plants.

Grasses also produced lots of pollen, meaning that it was not possible to control pollination in a field setting.

The CRC's research is unlocking the secrets of ryegrass pollination at a DNA level.

"The research aims to find the genes responsible for this function, understand them and have a DNA marker test for them," Dr Nation said.

This would allow breeders to create two populations of plants that could be put into a field together to produce large quantities of seed of exceptional hybrid plants — the type that plant breeders had always seen but had to ignore.

"It's working with understanding how these plants breed to create a paddock full of these plants," he said. "It's kind of been an impossible dream."

There is significant commercial interest in this concept. The CRC had plants in its glasshouse that could be deliberately crossed by knowing their fertilisation genes and it had now planted them out in the field in western Victoria.

"We are expecting within 18 months to be able to show that our approach will be successful," Dr Nation said.

The approach promises to turn ryegrass breeding on its head. It would allow seed companies to experiment with the crossing of different plants to develop hybrids.

"It's terribly exciting; we see this as the future of plant breeding," Dr Nation said.

Genomic selection and reselection

The CRC is also researching ways in which genomic selection of favourable genes could be applied to ryegrass breeding.

Dr Nation said the first stage was to understand how genetic gain worked in traditional plant breeding.

"To be able to get in and understand what genes are flowing from one part of the breeding program to the next and look for superior genes as well as superior performance is a huge opportunity for plant breeding," he said.

"It's a major global trend, regardless of what plant you are talking about. It's the hottest topic in maize, wheat and rice breeding."

In the past year, the CRC had been able to simulate ryegrass breeding programs and had identified areas

where DNA technology could be applied.

"Genomic selection has been complicated to develop but we have made significant gains in how you would do it," he said.

"This is building what we believe is an ability to between double and triple the rate of genetic gain in new varieties coming through."

DNA technology also offered the opportunity to improve existing varieties — either those already in the plant-breeding process or even in the marketplace.

It would allow plant breeders to use genomic markers to make one change to the existing variety, such as increase its energy content.

The CRC has developed the mathematical process that would allow representative plants to be taken from a pasture grown from a bag of seed, understand the DNA make up of those plants and then work out a way to increase the energy content but still maintain the genetic diversity in that bag of seed.

Dr Nation said the variety could then put be back into the final years of field testing, ideally demonstrating that variety handed back looked and performed across a range of environments like the variety it came from but had higher energy content.

"That opens the door to a whole new practical fast-impact space of taking varieties and improving them," Dr Nation said. "It also works for farmers because typically farmers build trust in varieties knowing that they work on their farm. So we are able to take a variety that they know works and make an improvement that's important to them."

Endophytes

The identification and testing of new endophytes is a long-standing program at the CRC. Endophytes are fungus that live in the plant and confer advantages to the plant.

Traditionally wild-type endophytes have been toxic to animals and caused problems such as ryegrass staggers.

Dr Nation said the CRC has scoured global seedbanks to identify new endophytes that were still advantageous to the plant, such as providing it with resistance to certain insects, but without the animal health issues.

It had produced complete DNA sequences of more than 100 different types of endophytes.

It had also developed a rapid low-cost test that allowed endophytes to



Ryegrass in a glasshouse at the research centre at Hamilton that is part of the conventional pasture breeding program being run by the Dairy Futures CRC.

be quickly identified. The cost was \$1 per test and took six days compared with the traditional test that cost \$30 and took six weeks.

This gave farmers, agronomists and plant breeders a quick means of ensuring what endophyte was in any pasture — an important means of quality control.

Dr Nation said the next step was in identifying the 'perfect' endophyte for each pasture variety. The natural state for ryegrass was to have an endophyte, and the ideal combination would allow the plant and the endophyte to thrive.

As a result of research, endophytes had gone from being seen as something that needed to be eliminated in ryegrass pastures because of animal health issues to something that conferred specific advantages on the plant, such as insect resistance, and now to something that would enhance the plant as a whole.

Dr Nation said seed companies now offered ryegrass seed with one or two endophyte options but in future all seed would be sold with the specific endophyte that best suited that variety.

Commercial focus

Strong commercial relationships had been one of the advantages of the Dairy Futures CRC, Dr Nation said. The plant breeding research sector is no different.

It has a long-standing relationship with Dutch plant breeding company Barenbrug and its Australian arm Heritage Seeds and with PGG Wrightson Seeds.

These relationships ensure the research has a commercial focus and developments can be brought to the market.

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Pasture drives dairy production

Key points

- ✓ Run-off block converted to dairy
- ✓ Rich volcanic soils and irrigation
- ✓ Simple farming system



By Carlene Dowie

A SIMPLE pasture-based system targeting high production per hectare and per cow is how a young sharefarmer is building wealth in the dairy industry.

Clinton Theodore, who started his dairy career with a school-based apprenticeship, began sharefarming at Alvie in Western Victoria this season on a property he had managed for the previous two seasons.

The property is owned by a partnership, Alvie Properties, including Phil Harris, from Larpent, Vic, for whom Mr Theodore has worked since he was at school.

Mr Harris said the 174-hectare property was bought by the partnership in 2006 as it had a 990-megalitre irrigation licence and they were looking for a property to help drought proof their operations.

The farm had one centre pivot irri-

gator, which was recommissioned by the partners, and another five were constructed to give an irrigated area of 125ha.

The farm was gradually converted from dryland lucerne production to irrigated perennial pasture and run as a cropping operation, providing hay for the partners' farms and producing high-quality small-bale lucerne for the horse industry. When the drought ended, Mr Harris continued to buy hay from the partnership for his dairy operation.

Four years ago he set about converting the farm back to dairy with the plan to put Mr Theodore on as manager. Mr Theodore worked alongside him in converting the property — which included dividing paddocks, putting in laneways and rebuilding an old dairy on the farm (including installing automatic cup removers and all for a cost of about \$60,000).

The farm is designed to be a one-man operation. The emphasis is on producing high quality perennial ryegrass pastures and getting the cows to eat as much of this as possible. They are also fed 2.5 tonnes/cow/year of pellets through the dairy.

This season Mr Theodore is milking 240 cows and plans to build numbers.

Per cow production is 675 kilograms of milk solids or 10,000 litres. The effective milking area is 125ha and per hectare production is about 1200kgMS.

Mr Theodore said the combination of highly fertile soils on the volcanic plain, good irrigation and regular applications of nitrogen were the keys to high pasture utilisation, estimated at 11-12t/ha.

The paddocks are sown to a mix of Banquet and Extreme perennial ryegrasses from PGG Wrightson Seeds. The pastures are resown every three to four years to maintain younger pastures, which produce more under irrigation.

Mr Theodore said pastures were managed by visual observation with the emphasis on ensuring cows were always going onto high quality fresh pastures. Pastures were topped if required after the cows went out to maintain quality.

If the pasture was starting to become rank, paddocks were pulled out of the rotation and cut for hay. This season more than 1200 rolls of hay had been produced on the farm through this system, he said.

In summer the farm was on about a 16-day rotation but that pushed out ►

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Providing opportunities for the next generation

A FAMILY farm business succession plan prompted the conversion of the run-off block at Alvie into a dairy farm.

Phil Harris said his family undertook a succession planning process with consultant John Mulvany about four years ago. Initially this involved individual interviews with him, his wife, Kate, his son, Alistair, his daughter, Sophie Hester, and employee Clinton Theodore to work out what everyone wanted.

As a result of that process, Mr Harris decided to take step back from the farm. His daughter and his son became shareholders in the business and took on the day-to-day operation.

Phil and Kate have almost completed their move from the main farm, having nearly finished renovating an old home-stand into which they plan to move later this year. A cruise on the Queen Mary is also planned.

Mr Theodore was also looking for more opportunities. So Mr Harris contacted the partners with whom he had bought the Alvie farm and put to them the plan to convert it to an operating dairy with Mr Theodore as the manager.

He had first met Mr Theodore when he



Sophie Hester, Clinton Theodore, Phil Harris and Alistair Harris on the Alvie farm that Mr Theodore has taken on as a sharefarmer as part of the Harris family succession planning process.

had come to the farm as a Year 9 student to do work experience, subsequently employing him as a school-based apprentice. "He was a beaut kid," Mr Harris said. Mr Theodore went on to be named Western Victorian Apprentice of the Year while working at the Harris farm.

Mr Theodore started at Alvie as a manager. But the plan was always for him to eventually move into sharefarming and then hopefully into farm ownership.

Mr Harris said his partners, who had large agricultural holdings, were "thrilled to bits to be able to give a young person an opportunity". It was hoped Mr Theodore would be able to step purchase the farm from each partner.

So far things have gone to plan. Mr The-

odore bought the herd and machinery at the start of this season.

Mr Harris said the sharefarming arrangement was going well, with them getting together once a month to do the accounts.

Mr Theodore said the step to sharefarming was initially tough because cash flow was tight, with expenses at the start of the season before income started to flow.

But the two years managing the property had set him up well because it meant when he bought in, he knew how it operated and could keep it ticking along.

Mr Theodore said Mr Harris was a great manager — he kept an overview of things but allowed him to make his own decisions.

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Cows graze high-quality perennial ryegrass pastures on the Alvie, Victoria, property sharefarmed by Clinton Theodore.

to 26-28 days in the wet months. In winter, if it gets too wet, cows were allowed to give pastures only a "light nip over" and some of the conserved hay was fed out.

Mr Theodore said nitrogen was spread every round — between 50-70kg/ha, depending on the length of the rotation. No other fertiliser was required.

Paddocks for grazing were selected on a simple system with the aim of ensuring cows were given a mix of an old pasture and a new pasture every milking.

A road goes through the middle of the property so cows graze pastured on the dairy side of the road at night,

so cows didn't cross the road in the dark.

Mr Theodore said the farm was irrigated 24 hours a day for about six months of the year with the bore pumping about 270,000 litres an hour. Water was applied on a six-day complete pivot operation, allowing about 25 millimetres to be applied across the whole farm in that time.

Visual observation was also used to manage moisture in the pastures. If there was summer rain, irrigation would be suspended for a couple of days but plants would be observed for any signs of water stress, Mr Theodore said.

All resowing occurred in the spring. This allowed Mr Theodore to use pad-

docks that were earmarked for renovation as sacrifice paddocks in the winter, which were usually wet, causing the volcanic soils to sometimes become boggy.

Mr Theodore said setting up the farm for dairying from scratch had its advantages. It had allowed laneways and paddocks to be set up where it best suited the farm.

"The simple farm system is ideal for a one-person operation," he said. Everything on the farm was set up with simplicity in mind; for example premixed pellets were fed. "Mixing is just another job and when it is you just doing everything you haven't got time for that," he said.



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Key points

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- ✓ Introducing novel endophytes to existing pasture challenging
- ✓ Choose renovation process to suit farming system



By Pat Bloye and Frank Mickan, Dairy extension officers — agronomy, Ellinbank Centre, Department of Economic Development, Jobs, Transport and Resources

UNPREDICTABLE seasonal patterns have been the trend, Australia-wide. As a result and from a pasture's perspective, one of the most difficult tasks that has faced plant breeders is the persistence of perennial ryegrass pastures.

In temperate regions of Australia, the summers are tending to be hotter, drier and sometimes longer lasting, although not always, as this summer has proved up to the end of January.

The autumn break and spring cut-off are also becoming more variable.

Recently, the introduction of novel endophyte has meant perennial pastures (mainly ryegrass) have the potential for increased persistence and subsequent productivity through the growth of healthier plants.

Novel endophytes have been bred from "standard" endophyte pastures to produce selected alkaloids (compounds), giving farmers the opportu-

nity to minimise certain pasture pest effects along with reducing endophyte-related animal health issues.

However, successfully introducing these novel endophytes into an existing pasture containing standard endophytes can be challenging.

Endophytes have a well-evolved relationship with ryegrass, termed mutually symbiotic, meaning that both plant and endophyte benefit from the relationship.

Although the endophyte does share nutrients with the plant, it also helps the plant obtain nutrients (through healthier and more extensive root growth) and provides specific pest resistance for the plant.

'... farmers can now benefit from plant protection and minimise the potential for animal health effects.'

Endophytes live in the base of the plant and are transferred into the seed during the reproductive phase of the plant's life cycle. So endophytes are only transferred from plant-to-plant via seed, not through the soil or roots.

Most perennial ryegrass pastures in Australia are infected with a standard endophyte, which offers some plant protection against pasture pests,

however, they do have the potential to cause some animal health issues. These health issues are most prolific during the warmer months and may severely impact cow production or even result in death.

With the introduction of novel endophyte, farmers can now benefit from plant protection and minimise the potential for animal health effects.

Unfortunately the practicality of introducing novel endophytes into older pastures containing standard endophyte is often where the wheels fall off.

An examination of different scenarios allows a comparison of the effectiveness of different techniques of introducing novel endophyte pastures and the effects of the standard endophyte remaining in the pasture.

It is important to remember that pasture renewal processes are not a one-size-fits-all approach. The renovation process must suit the individual farming system — there are no short-cuts.

Scenario one: Oversow existing standard-endophyte pasture with novel-endophyte pasture seed

This technique will most likely have the lowest up-front cost (no spraying or cultivation), although it also has the poorest chances of success.

As the existing pasture has not been killed, the likely composition of the sward could be around 50:50 (stand- ▶



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◀ ard endophyte:novel endophyte). Initially, this may be seen as a “50% is better than nothing” result. However, experience by farmers and seed company representatives suggests grazing stock will generally prefer to graze plants containing novel endophyte. As a result, the newer pastures will tend to be over-grazed before cattle move onto the older existing pastures, impacting on productivity and persistence of the newer pastures.

Across time, the novel-endophyte-containing plants will thin out, leaving room for the existing pastures to once again dominate the pasture sward. Overall, it is a simple and cheap option but it would be difficult to sustain the novel endophyte in the sward in the long-term.

Scenario two: After first autumn rains, germinated pastures are sprayed and novel-endophyte pasture oversown

By allowing the existing pastures to germinate before spraying with a non-selective herbicide, a high percentage kill of older-type perennial pastures can be expected (~75-90%). Perennial ryegrass seeds have limited dormancy and usually survive for less than a year, with a small percentage lying dormant in some soils for up to two years.

Given the relatively short-lived dormancy of perennial ryegrass seeds, this technique is more likely to sustain the novel endophyte compared with scenario one.

Although the contamination of standard endophyte in this scenario will be much less compared with scenario one, the technique requires the older pastures to germinate, which occurs after rainfall or irrigation. Given that autumn rainfall is unpredictable, this may allow for an early spray and oversow or it may require waiting late into the autumn before beginning.

The latter will significantly reduce pasture production. Research suggests that for every three weeks' delay in sowing from early March, pasture yield can decrease by about 600 kilograms of dry matter per hectare, per year. In this scenario, the risks of a delayed autumn break needs to be balanced against the potential production costs.

Scenario three: Paddock renovation process across one or two years

This is the most labour-intensive and expensive technique, requiring careful



Ensure feeds made from older existing pastures are not fed out on novel-endophyte pastures.

management and significant planning. However, it should result in establishing a pasture sward containing more than 90% novel endophyte.

If sowing a summer crop, spray out the existing pasture in spring (preferably before any seed set), to kill the current plants and significantly reduce the amount of seed produced. Generally the best kill will come if the pasture is actively growing.

Ensure the equipment used is calibrated to accurately and evenly apply herbicide at specified label rate and is carried out at the correct time. For a one-year program, re-sowing the paddock back to perennial pasture containing novel endophyte in autumn will generally result in a reasonably pure sward (~80-95%) with minimal contamination of standard endophyte pastures. If opting for a one-year program, keep an eye out for germinating weeds in autumn.

If a two-year renovation program has been planned, sow a non-endophyte containing forage through the winter period, such as a winter forage cereal or brassica or short-term ryegrass, being careful not to use a hybrid that may contain endophyte.

After the winter forage, the common strategy is to sow a second summer crop. In this case, an early maturing crop should give flexibility to allow earlier sowing of the newer pasture the following autumn.

If a later-maturing-type forage is sown and not grazed/taken off as conserved fodder until mid-late autumn, the delayed sowing will cost the farmer growth and animal production.

Another option, after spraying the winter forage out as late as possible in year two, is to leave the paddock fallow during summer, spray out in early autumn and sow the new pasture.

The two-year renovation program should eliminate most, if not all, existing standard endophyte pastures and other weeds so the likely purity of the novel-endophyte pasture should be more than 95%. This increases the likelihood of achieving the greatest benefits and sustaining the novel-endophyte pastures.

Managing the novel endophyte

To get the most significant gains out of a novel-endophyte perennial pasture, a high level of purity of novel endophyte must be maintained. Many hays (and some baled silages) will contain viable seed, and, if containing standard endophyte, can easily “re-contaminate” the paddocks where fed out.

To prevent this from occurring feed back on older pastures, using hay rings or feeder troughs where necessary and/or practical and keep good records.

To capitalise on pasture productivity and persistence with novel endophyte, it is important to maintain correct grazing management techniques — grazing ryegrass at two to three leaves and leaving four to six centimetres residual behind.

Given that there are many different types of novel endophyte on the market, offering various forms of protection, speak to a local agronomist to determine which endophyte is most relevant to the local area. D

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Keys to successful pasture establishment



1. Sowing seed at correct depth.



2. Sowing at correct soil temperature.



3. Control insect pests quickly.

Timeliness drives success for pasture

Key points

- ✓ Timing critical to successful pastures
- ✓ Strict attention to detail vital
- ✓ Pasture Improvement Initiative to provide info



By Frank Mickan,
Pasture and fodder conservation
specialist, Ellinbank Centre,
Department of Economic
Development, Jobs, Transport and
Resources

WAS the fodder crop a letdown this season? Was the ryegrass in head when harvested for silage? Do the poop clumps stand out

post-grazing? Is the grass lighter green than normal? Was the germination rate way down in the newly sown pasture? Were there gaps along the seed rows? Did the newly-sown seedlings spring out of the ground only to stop dead in their tracks? Did the weeds win the race?

These and many other questions and issues arise from farmers (and contractors) every year with their existing or newly renovated or over-sown pastures and fodder crops. Unfortunately, the seed supplier is generally not to blame and neither usually is the contractor.

The weather coming in too dry or too wet after sowing can be a legiti-

'It's no wonder farmers are often disappointed with pasture improvement.'

mate reason, provided the farmer investigated the weather websites as much as possible before deciding to go ahead.

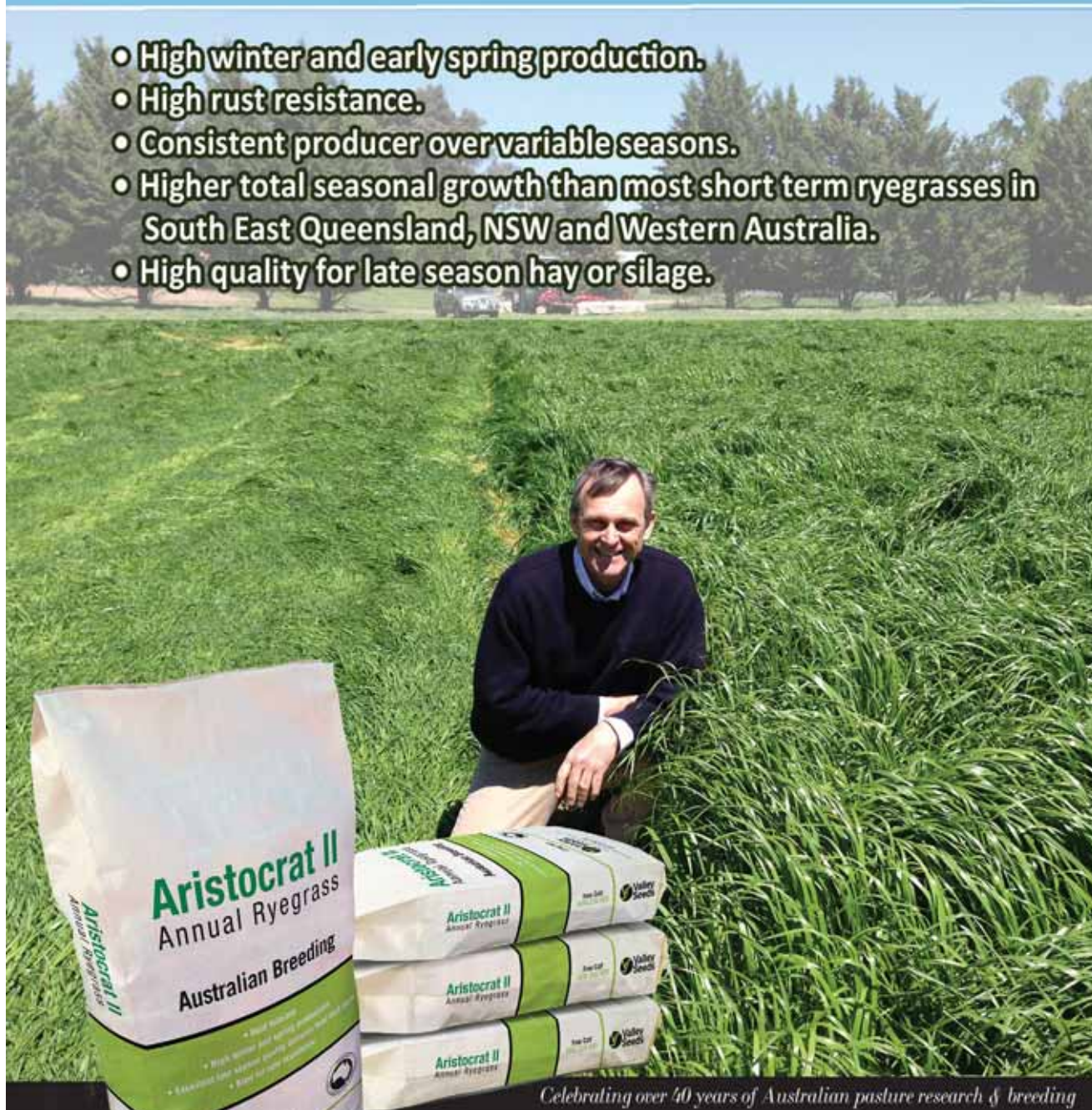
There are so many mistakes and poorly timed or incorrect management decisions at any number of critical steps that can mean a healthy and long-surviving pasture or crop is not ►

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'Research has shown that for every three weeks' delay in sowing from early March, pasture yield decreased by about 600 kilograms of dry matter per hectare (kg DM/ha) and resulted in greater weed growth.'

- ◀ achieved. It's no wonder farmers are often disappointed with pasture improvement.

The answer is simple but often not so easy to enact.

To successfully establish pastures (and crops) and to ensure their potential longevity is achieved requires strict attention to detail. Timely decisions (and subsequent actions) do not happen for many reasons, some of which are uncontrollable (weather and contractor issues) but many can be controlled.

Many activities associated with establishing successful pastures rely on critical timing. Other factors include sowing depth, "snug-as-a-bug" seedbed, pre-sowing and post-sowing weed and insect control and grazing management.

Timing vital

Let's take one example. Plans are in place to have seed in the ground

Pasture Improvement Initiative underway

REPUTABLE service providers in the pasture and fodder crop production world know the importance of timely operations. However, there are still so many occasions on farm where these do not occur, despite much information being available to overcome most of these issues.

Having felt the need to improve the outcomes of pasture and crop improvement on farm, a group of like-minded organisations involved in the pasture and livestock industries collaborated under the banner of the Pasture Improvement Initiative (PII).

The overall vision of PII is to set aside commercial considerations and deliver practical, generic and scientifically rigorous tools to help farmers improve their pastures.

The PII's goal is to collate current industry information and provide a clearing house for existing knowledge on pasture species, establishment and management across all livestock seed and fodder sectors, which

delivers easy-to-find, easy to understand, locally relevant and practical information for producers and suppliers alike.

Collaborating with government and industry, the group is in its early stages but its impact will be seen sooner rather than later, right along the supply chain. For more information about PII, visit website <www.pastureimprovementinitiative.com.au>.

Several pasture improvement strategies during 2014's summer were instigated at the Ellinbank Dairy Research Centre, as well as an experiment looking at alternative pasture species and chicory for the dairy industry being conducted (see story page 109).

This project was co-funded by the department and Dairy Australia. A field day is being planned to be held at the Ellinbank Centre in Gippsland in late March, early April. A representative from PII will attend to share the initiative's plans for the coming year.

at a particular time, but instead it is planted three weeks' late. Admittedly weather may interfere here, but many other reasons or excuses could be overcome by better planning and preparation.

Research has shown that for every three weeks' delay in sowing from early March, pasture yield decreased by about 600 kilograms of dry matter per hectare (kg DM/ha) and resulted in greater weed growth. The March and April sowings also gave an extra three grazings. This figure will vary according to follow-up climatic conditions, weed and insect control.

If 80% of the 600kg DM/ha pasture was actually eaten (480kg DM/ha) and it was 11 megajoules of metabolisable energy per kilogram of DM (MJ ME/kg DM), and 8 MJ ME, a conservative value, was used to produce one litre of milk at \$0.40 cents/litre, the farm has just lost \$264/ha by not sowing on time. Now multiply this figure by the actual area sown late, (say 10ha in this example), and the loss is \$2648. This shows why it is worth getting everything right. **D**

Contact: Frank Mickan, phone (03) 5624 2259, email <frank.mickan@ecodev.vic.gov.au>.

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Auto fetching on the horizon

Key points	✓ Increased milkings when cows auto fetched
	✓ Reduced number of cows on long milk intervals
	✓ Pasture allocation still critical

AUTOMATIC fetching technologies on the horizon may allow farmers with automatic milking systems (AMS) to increase the number of milkings that occur overnight.

FutureDairy project leader Associate Professor Kendra Kerrisk said that Australia's grazing-based AMS usually saw a dip in the number of milkings that occurred between 2am and 5am, a time when grazing cows typically rested.

"This is quite different to European AMS farms where cows are housed indoors under artificial light and the number of milkings is spread evenly throughout the day and night," Assoc Prof Kerrisk said.

"Increasing the number of overnight milkings on Australian AMS farms has the potential to reduce the interval between milkings and therefore improve udder health and increase milk production in the longer-term.

"In some cases it also has the po-

'... if too much pasture were allocated, the cows' response to autofetching would differ.'



FutureDairy postgraduate student Ashleigh Wildridge is investigating the potential value of autofetching for robotic milking farms.

tential to allow the number of cows milked per robot to increase by up to 10%."

To assess the potential value of automatic fetching technologies in this context, FutureDairy post-graduate student Ashleigh Wildridge conducted a study that simulated auto fetching to determine the likely impact on overnight milkings.

The study was conducted on Grant and Leesa Williams' automatic milking farm at Hallora in West Gippsland, Victoria. The Williams milk 250 cows with four AMS box units and a three-way grazing system.

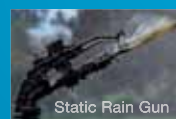
To simulate the effects of automatic fetching, Ms Wildridge visited a paddock of cows due for milking, quietly moved them into the laneway and shut the gate. She was then able to track their milking times through data recorded by the AMS. Conducted across three weeks, the study involved two different fetching times: 11pm and 1am.

"I wanted to find out whether the cows would take themselves up to the dairy to be milked or if they'd just hang around in the laneway; and if the time of fetching made any difference," Ms Wildridge said.

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Technology can be used in conventional milking systems

FUTUREDAIRY postgraduate student Ashleigh Wildridge said she was aware of three products that could potentially be used to automatically fetch dairy cows from a paddock.

While Ms Wildridge's research is focused on their application for automatic milking systems, the technologies have potential uses for conventional milking dairy systems and other livestock farms.

Fence walker: launched by Lely in 2014. Designed for strip grazing, an electrified wire moves forward across time but can be set to move backwards and drive the cows back into the laneway, controlled by two robots, one at each side of the paddock.

Virtual fencing: under development by CSIRO. Cows wear collars fitted with GPS receivers programmed to know where the virtual fence is located. Collars emit a noise warning when cattle approach the boundary line. If they continue they receive a mild electric shock similar to an electric fence. Co-ordinates could be set to change at a certain time at night to send cows out of the paddock.



A prototype of the robotic herder being developed at the University of Sydney.

Robotic herder: Dairy Unmanned Ground vehicle (DUGV). Can be set to calmly move behind cattle and herd them

out of the paddock. Currently under development at the University of Sydney. Initial results are encouraging.

"Most of the cows did continue from the laneway up to the dairy to be milked. And the time of fetching — 11pm or 1am — didn't make much difference."

The trial showed a three-fold decrease in the number of cows with a milking interval of more than 16 hours. This is important because a milking interval of more than 16 hours can increase the risk of udder health issues such as mastitis.

"So automatic fetching technology

could be a useful tool to encourage milking during the night, especially for cows that are less motivated to move voluntarily, for example cows in late lactation," she said.

Ms Wildridge said that accurate pasture allocation was still the most important tool for encouraging voluntary cow movement in grazing based AMS.

"Autofetching technology may be an additional tool to enhance voluntary cow movement but accurate

pasture allocation will continue to be critical," she said.

"For example, if too much pasture were allocated, the cows' response to autofetching would differ; we'd expect them to be more likely to loiter or rest in the laneway." D

Contact: FutureDairy Associate Professor Kendra Kerrisk mobile 0428 101 372, email <kendra.kerrisk@sydney.edu.au>. FutureDairy's major sponsors are Dairy Australia, DeLaval and the University of Sydney.



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Annual ryegrass Forage EBVs based on replicated trials 2006-2014

Cultivar	Ploidy	Variety or brand	Mean			Flowering Days from Tetila		ME MJ/kg DM	CP %	NDF %	Extra meat value \$/ha	Extra milk value \$/ha	No. of trials
			Winter yield	Spring yield	Total yield	NSW	WA						
LATE FLOWERING (>+8 days)													
SF Adrenalin	tetraploid	variety	109	126	116	+9	+16	11.08	23.95	45.88	+\$404	+\$1020	34
SF Speedyl	tetraploid	variety	109	131	118	+12	+18	11.08	26.31	46.27	+\$421	+\$998	35
SF Pinnacle	tetraploid	variety	110	142	122	+10	+18	10.87	26.78	48.05	+\$349	+\$812	11
SF Sultan	diploid	variety	107	132	117	+10	+11	10.94	25.17	47.91	+\$328	+\$746	41
Zoom	tetraploid	variety	95	126	107	+14		10.84	23.57	46.64	+\$208	+\$575	8
Winter Star II	tetraploid	variety	103	124	112	+8		10.74	23.14	48.47	+\$186	+\$483	41
Arnie	diploid	variety	108	119	114	+7	+16	10.68	23.10	48.45	+\$212	+\$464	7
Jivet	tetraploid	variety	96	120	106								4
MID FLOWERING (+5 days to +8 days)													
SF Catalyst	tetraploid	variety	103	107	107	+5	+7	10.66	21.47	45.24	+\$221	+\$580	12
SF CatapulT	tetraploid	variety	106	113	110	+6	+7	10.70	22.79	46.91	+\$215	+\$525	29
Tama	tetraploid	variety	104	117	110	+7		10.83	23.82	48.13	+\$201	+\$506	4
Abundant	tetraploid	variety	108	109	108	+6	+11						12
Mach 1	tetraploid	variety	99	122	108								7
Aristocrat 2	tetraploid	variety	104	103	106								4
T Rex	tetraploid	brand	103	110	105	+8							12
Burst	tetraploid	variety	102	84	98								2
Progrow	diploid	variety	93	102	94								2
EARLY FLOWERING (-2 days to +4 days)													
Winter Hawk	diploid	variety	114	112	114			10.86	23.16	47.45	+\$299	+\$681	3
SF Flyer	diploid	variety	108	109	108	+1	0	10.84	23.57	46.64	+\$225	+\$586	38
SF Sprinter	tetraploid	variety	109	112	111	+4		10.66	23.66	48.32	+\$171	+\$417	40
OreTet	tetraploid	brand	104	104	104	0	0	10.73	22.32	47.85	+\$164	+\$390	2
Sungrazer T	tetraploid	brand	103	105	103			10.64	25.17	49.46	+\$38	+\$134	17
Maximus	tetraploid	variety	102	107	105	0		10.45	22.86	49.70	+\$12	+\$53	20
Atomic	tetraploid	brand	105	101	102		+2						5
Surrey 2	diploid	variety	102	105	103								8
Grassmax	diploid	brand	104	109	102	-1	+9						6
Tetila	tetraploid	brand	100	100	100	0	0	10.40	22.40	49.23	\$0	\$0	35
Rocket	tetraploid	brand	101	106	99								4
Tetrone	tetraploid	brand	107	102	97								3
R2	tetraploid	brand	118	97	96	0	0						2
Double Crop (Dargo)	tetraploid	variety	104	95	92								2

Relative rankings have been undertaken by comparing all yields as a percentage of Tetila.

Feed quality data undertaken prior to all grazings from trials at Gundagai and Lismore (NSW) with hundreded means reported.

Variety or brand?

The Australian Seed Federation has spent considerable effort over the past few years helping producers better understand the origins of varieties or brands that they are considering planting.

Products in blue font are for brands which have not met the ASF criteria - source ASF Seeds database January 2015.

To be confirmed as a variety on the ASF site, companies must have either Plant Breeders Rights or seed certification under OECD or ASA schemes.

A brand is largely a name that may or may not be trademarked. The seed may be fit for purpose but there is no scheme to let buyers know much about it.

It may or may not be the same product at any time.

Italian ryegrass Forage EBVs based on replicated trials 2006-2014

Cultivar	Ploidy	Variety or brand	Winter yield	Spring yield	Summer yield	Total yield	Flowering Days from Tetila		ME MJ/kg DM	CP %	NDF %	Extra meat value \$/ha	Extra milk value \$/ha	no. of trials
							NSW	WA						
LATE MATURITY (>+11 days)														
SF Indulgence	diploid	variety	98	106	103	102	+14	+21	11.35	21.87	43.45	+\$163	+\$446	41
Momentum	diploid	variety	96	104	107	101	+14		11.39	22.82	43.70	+\$158	+\$424	24
Asset AR37	diploid	variety	106	107	102	106			11.32	24.67	45.34	+\$132	+\$362	7
SF Emmerson	tetraploid	variety	97	104	98	100	+13	+18	11.33	22.50	44.00	+\$101	+\$308	38
Feast II	tetraploid	variety	101	103	104	102	+12		11.20	22.51	44.44	+\$67	+\$224	37
SF Accelerate	diploid	variety	104	107	113	105	+12	+21	11.07	21.65	45.39	+\$90	+\$215	42
Tonuss	diploid	variety	99	104	109	101	+15		11.22	23.85	45.77	+\$50	+\$130	24
Maverick GII	diploid	variety	95	103	106	100	+14		11.14	22.05	44.95	+\$35	+\$114	27
Nourish	tetraploid	variety	95	99	105	97	+14		11.23	20.55	44.23	+\$7	+\$110	24
Concord 2	diploid	variety	113	108	88	110			10.91	20.11	46.91	+\$47	+\$75	4
Jeanne	tetraploid	variety	90	97	81	94	+14		11.26	20.65	44.12	-\$15	+\$52	15
Hulk	diploid	variety	99	98	100	99	+12		11.09	21.49	45.15	+\$11	+\$44	36
Crusader	diploid	variety	100	100	100	100	+12	+18	11.10	22.29	46.08	\$0	\$0	42
Icon	diploid	variety	82	105	93	97	+11		11.02	21.31	45.44	-\$12	-\$15	2
Warrior	diploid	variety	92	101	98	98	+12		11.08	21.39	45.58	-\$20	-\$31	6
Aston	tetraploid	variety	99	93		96		+18	11.22	22.74	45.14	+\$1	-\$32	7
Knight	diploid	variety	106	104	98	105			10.83	20.94	47.64	-\$52	-\$152	7
Emmerson/Indulgence	4n/2n	blend	103	112		107	+13							5
Thumpa	tetraploid	variety	99	111		103								2
Turbo	diploid	variety	97	94	104	95								3
Awesome	diploid	brand	99	88		93								2
Denver	tetraploid	brand	88	81		84								2
MID MATURITY (< +11 days)														
Sonik	diploid	variety	101	100	90	100	+10		11.03	23.45	45.98	-\$21	-\$42	20
Diplex	diploid	brand	107	98	85	101	+7		10.85	24.65	46.50	-\$22	-\$99	11
Charger	diploid	brand	106	96	70	97	+7		10.78	21.00	47.28	-\$188	-\$449	8

Relative rankings have been undertaken by comparing all yields as a percentage of **Crusader**.

Feed quality data undertaken prior to all grazings from trials at Shepparton (VIC), Gundagai and Lismore (NSW) with hundredised means reported.

Notes for Annual and Italian ryegrass:

Yield data is hundredised means from a minimum of 2 and up to 42 trials per variety/brand.

Feed quality analysis undertaken by NSW DPI Feed Quality Service at Wagga Wagga.

Meat and milk values estimated using Seed Force's. Animal Performance Calculator™ based on the following assumptions:

- Meat at 65% feed utilisation, based on 300kg steer with 44MJ for maintenance and 45MJ/kg lwg at \$1.70/kg
- Milk at 75% feed utilisation, based on 600kg cow with 100MJ for maintenance/exercise/pregnancy and 5.5MJ/litre at \$0.45 per litre

No summer data means that those varieties have only been trialed by Seed Force in areas that finish in early December in annual growing regions.

Where cells have no data it means that tests have not been undertaken on those varieties or brands.

Extra meat and milk values are estimated differences per ha compared to control cultivars with numbers in red being negative to control.




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Make the most from nitrogen

Key points

- ✓ Restrictions on nitrogen use
- ✓ Strategic application most cost effective
- ✓ Ensure extra feed grown is required



By Alison Hall,
TIA Dairy Centre

AS NITROGEN fertilisers make up a large portion of fertiliser costs on cropping and dairy farms, it is important to make the most of the nitrogen being applied.

Poor nitrogen use efficiency in pastures can be a large cost to the business, through both lost production and profit.

There is an increasing awareness about the environmental risks of losses of nitrogen via leaching and runoff, increased greenhouse gases and pollution of groundwater, rivers, streams and estuaries.

Many countries have much stronger regulation and restrictions on nitrogen use as a result of these environmental concerns. Restrictions on nitrogen usage are common in New Zealand and the European Union, and closer to home, in Queensland catchments that can affect the Great Barrier Reef.

Studies have shown farms with low nitrogen use efficiency can lose more than 300 kilograms of nitrogen per hectare a year (kg N/ha/year), which is equivalent to 660kg urea per hectare, resulting in a large cost to the farm and to the environment.

To make the most of nitrogen applied to pasture, one of the first steps is to ensure there are no other major limiting factors. These can include:

- Ensure there is adequate moisture — avoid applying nitrogen when there is little moisture, and when there is too much, for example during heavy rain periods.
- Check for soil fertility levels — of phosphorous, potassium and sulphur, to ensure there are no limiting nutrients for pastures.
- pH and salinity levels.
- Check pasture species — response rates and utilisation will vary depending on the pasture species (for example, ryegrass is one of the most responsive pasture species to nitrogen).
- Temperature — low temperatures (soil temperature of less than eight degrees Celsius) will mean plants will not take up and utilise nitrogen as efficiently.

'If the extra feed is not needed in spring, it may be more economical to apply the nitrogen in autumn ...'

Similarly, when temperatures are higher than 25°Celsius in summer, ryegrass plants also become less active at taking up nitrogen.



Response rates to nitrogen fertiliser during spring can be high, but it is important to also consider the cost associated with conserving the extra feed grown.

Another important factor to consider to make the best use of nitrogen fertiliser, is to ensure that the extra feed that will be produced is really needed. Ensure the business can fully utilise the extra feed grown.

For instance, response rates to nitrogen fertiliser during spring can be high, but it is important to also consider the cost associated with conserving the extra feed grown if the cows are not going to be able to utilise the feed through grazing alone.

If the extra feed is not needed in

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Guidelines for nitrogen management

- Before each nitrogen application, calculate the likely growth response, and compare the cost of the extra pasture produced to other feed options. The Tasmanian Institute of Agriculture (TIA) Dairy Centre has developed a Nitrogen Response Rate Calculator, that can assist in making these decisions, which can be found under the Tools section on the TIA website at <<http://www.utas.edu.au/tia/centres/dairycentre/publications-and-tools/tools>>.
- High stocking rates and stocking intensity result in higher losses of nitrogen, from increasing urinary deposition. High densities of stock in small areas (eg calving pads) result in high point source losses of nitrogen.

- Apply nitrogen only when pasture is actively growing. To maximise yields, apply nitrogen in the first few days after the pasture has been grazed.
- Avoid applying nitrogen near streams and riparian zones, and over drainage lines within paddocks.
- Avoid applying more than 50kgN/ha in a single application, and applying nitrogen at intervals less than 21 days (30kgN/ha in spring) to 28 days (50kgN/ha), as this practice increases nitrogen losses significantly.
- Where annual nitrogen application rates exceed 250kg N/ha/year, soil testing for pH changes should be conducted and liming may be required to prevent soil acidification.
- If applying nitrogen in summer months,

consider applying two to three days prior to grazing. This minimises wind speed through greater plant cover at ground level, reducing the amount of nitrogen lost as ammonia through volatilisation.

- Avoid applying nitrogen on waterlogged soils, particularly if soil temperature is above 10°C, as this increases loss through higher denitrification rate.
- When soils are near field capacity (mid-July to September), or on free draining soils (such as sandy soils), avoid applying nitrogen fertiliser before a heavy rainfall and for two to five days after heavy rains, depending on how readily the soils drain. If nitrogen must be applied, apply lighter rates to assist in reducing the losses of nitrogen through leaching.

spring, it may be more economical to apply the nitrogen in autumn when response rates are still reasonable, and there may be a greater demand for feed in early winter.

Being more strategic with applications of nitrogen fertilisers according to feed demands may assist in improving the nitrogen use efficiency on the farm and reduce costs.

There are a number of options avail-

able to improve utilisation of nitrogen on the farm. The key things to consider are applying the right product, at the right rate, in the right place and at the right time.

This information was presented at a series of field days held in Tasmania last year. NRM North and NRM South in conjunction with the Tasmanian Institute of Agriculture, Impact Fertilisers, RMCG, Incitec Pivot and AgVita

held the days that focused on improving nitrogen use efficiency in pastures and crops.

More information on nitrogen management can be found on the Fert\$mart website <dairyingfortomorrow.com.au>.

Contact: Adrian James from NRM North phone (03) 6333 7784.

Article courtesy of *Tassie Dairy News*.



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Agronomic Selection Criteria			Market Information			Intellectual Property Status		Background Information
Type Species	Flowering, Activity or Characteristics	Ploidy	Brand Name	Variety *	Australian Marketer	PPR**	TM***	Plant Breeder
ANNUAL RYEGRASS								
Annual Ryegrass (<i>Lolium rigidum</i>)	Early	Diploid	Fantastic	✓	Upper Murray Seeds			AMPAC
	Early		Guard	✓	Valley Seeds			
	Early		Wimmera		Many			
	Early		Safeguard	✓	Valley Seeds			
Annual Italian (<i>Lolium multiflorum</i> ssp. <i>westewoldicum</i>)	Early	Diploid	Diploid Tetila®		Valley Seeds		Y	Valley Seeds
	Early	Diploid	Grassmax®		Heritage Seeds		Y	Oregro (USA)
	Early	Diploid	SF Flyer®	✓	Seed Force		Y	Oregro (USA)
	Early	Diploid	Thunder		Many			
	Early	Diploid	Winterhawk	✓	Seed Force		Y	Oregro (USA)
	Early	Tetraploid	Betta Tetila		Parkseeds Pty Ltd			Parkseeds Pty Ltd
	Early	Tetraploid	Diamond T		PGG Wrightson Seeds			Oregro (USA)
	Early	Tetraploid	New Tetila		Vicseeds			Vicseeds
	Early	Tetraploid	Phantom	✓	Upper Murray Seeds		Y	Sheldon Agri
	Early	Tetraploid	SF Catalyst	✓	Seed Force		Y	Oregro (USA)
	Early	Tetraploid	SF Catapult	✓	Seed Force		Y	Oregro (USA)
	Early	Tetraploid	SF Sprinter	✓	Seed Force		Y	Oregro (USA)
	Early	Tetraploid	Sungazer® T		PGG Wrightson Seeds		Y	Oregro (USA)
	Early	Tetraploid	Tetron		Seed Distributors		Y	Pasture Genetics
	Early	Tetraploid	Tetila		Many			
	Mid Season	Diploid	Aristocrat II	✓	Valley Seeds	Y		QDPI
	Mid Season	Diploid	Devour		Specialty Seeds			Specialty Seeds NZ
	Mid Season	Diploid	Noble	✓	Valley Seeds	Y		QDPI
	Mid Season	Diploid	Progrow	✓	Valley Seeds	Y		PGG Wrightson Seeds (NZ)
	Mid Season	Diploid	SF Sultan	✓	Seed Force		Y	RAGT (France)
	Mid Season	Tetraploid	Abundant	✓	Irwin Hunter			DLF Seeds (USA)
	Mid Season	Tetraploid	Astound	P	Valley Seeds	P		Valley Seeds
	Mid Season	Tetraploid	Burst (BurstARG)	✓	Vicseeds	Y		Mendelian Enterprises (Ross Downes)
	Mid Season	Tetraploid	Grasslands Tama		Many			
	Mid Season	Tetraploid	Mach 1	✓	Agricom		Y	Grasslands Innovations Ltd
	Mid Season	Tetraploid	Maximus	✓	Heritage Seeds	Y		Barenbrug (USA)
	Mid Season	Tetraploid	R2 Ryegrass		Upper Murray Seeds			Sheldon Agri
	Mid Season	Tetraploid	Rocket		Seed Distributors			Sheldon Agri
	Mid Season	Tetraploid	SF Adrenalin	✓	Seed Force		Y	RAGT (France)
	Mid Season	Tetraploid	T Rex		Heritage Seeds		Y	Barenbrug (USA)
	Mid Season	Tetraploid	Winter Star II® (WSRII)	✓	PGG Wrightson Seeds	Y	Y	Grasslands Innovations Ltd
	Mid-late Season	Tetraploid	Vortex	✓	Heritage Seeds	P		Heritage Seeds (AUS)
	Late Season	Diploid	Arnie	✓	Heritage Seeds	Y		Barenbrug (France)
	Late Season	Tetraploid	Ace Ryegrass		Upper Murray Seeds			Sheldon Agri
	Mid Season	Tetraploid	Atomic Ryegrass		Upper Murray Seeds			Sheldon Agri
	Late Season	Tetraploid	Bullet	✓	Cropmark Seeds		Y	Cropmark Seeds
	Late Season	Tetraploid	Jivet	✓	Seed Distributors			DLF Trifolium
	Late Season	Tetraploid	Zoom	✓	Cropmark Seeds		Y	Cropmark Seeds
	Late Season	Tetraploid	SF Pinnacle	✓	Seed Force			RAGT (France)
	Late Season	Tetraploid	SF Speedyl	✓	Seed Force		Y	RAGT (France)
Italian Ryegrass (<i>Lolium multiflorum</i>)	Early	Diploid	Dargo (DoubleCrop)	✓	Vicseeds	Y		Independent Plant Breeders
	Mid Season	Diploid	Achieve	P	Valley Seeds	P		Valley Seeds
	Mid Season	Diploid	Asteroid	P	Valley Seeds	P		Valley Seeds
	Mid Season	Diploid	Eclipse	✓	Valley Seeds	Y		PGGWrightson/Valley Seeds
	Mid Season	Diploid	Kano	✓	Specialty Seeds	Y		Cropmark Seeds, NZ
	Mid Season	Tetraploid	Amass	P	Valley Seeds	P		Valley Seeds
	Mid Late season	Diploid	Charger LM	P	Upper Murray Seeds	Y		Sheldon Agri
	Late Season	Diploid	Asset	P	Agricom	P		Grasslands Innovations Ltd
	Late Season	Diploid	Asset AR37	P	Agricom	P		Grasslands Innovations Ltd
	Late Season	Diploid	Awesome	P	Upper Murray Seeds	P		Sheldon Agri
	Late Season	Diploid	Blade	✓	Smyth Seeds	P	Y	Cropmark Seeds, NZ
	Late Season	Diploid	Concord® II (Supercruise)	✓	PGG Wrightson Seeds	P	Y	Grasslands Innovations Ltd
	Late Season	Diploid	Crusader	✓	Agricom	Y		Grasslands Innovations Ltd
	Late Season	Diploid	Diplex®	✓	Seed Distributors		Y	Sheldon Agri
	Late Season	Diploid	Hulk	✓	Heritage Seeds	Y		AgriSeeds (NZ)
	Late Season	Diploid	Icon	✓	Seed Distributors			DLF Seeds
	Late Season	Diploid	Knight	✓	Agricom	P		Grasslands Innovations Ltd
	Late Season	Diploid	SF Accelerate®	✓	Seed Force		Y	RAGT (France)
	Late Season	Diploid	SF Indulgence	✓	Seed Force			RAGT (France)
	Late Season	Diploid	SF Momentum®	✓	Seed Force			RAGT (France)
	Late Season	Diploid	SF Tonuss	✓	Seed Force			RAGT (France)
	Late Season	Diploid	Sonik	✓	Cropmark Seeds	Y	Y	Cropmark Seeds, NZ
	Late Season	Diploid	Surge	✓	Notman Seeds	Y	Y	Cropmark Seeds, NZ
	Late Season	Diploid	Tabu	✓	Heritage Seeds	Y		AgriSeeds (NZ)
	Late Season	Diploid	Turbo	✓	Valley Seeds	Y		Cropmark Seeds, NZ
	Late Season	Tetraploid	Aston	✓	Heritage Seeds	Y		AgriSeeds (NZ)
	Late Season	Tetraploid	Denver®		Upper Murray Seeds			Michael Obention
	Late Season	Tetraploid	Feast® II (FSTII)	✓	PGG Wrightson Seeds		Y	Grasslands Innovations Ltd
	Late Season	Tetraploid	Nourish (KLM 138)	✓	PGG Wrightson Seeds	Y		Grasslands Innovations Ltd
	Late Season	Tetraploid	Jeanne	✓	Seed Distributors, Irwin Hunter & Co.			DLF Trifolium
Short Term Hybrid Ryegrass (<i>Lolium boucheum</i>)	Late Season	Tetraploid	SF Emmerson	✓	Seed Force			RAGT (France)
	Late Season	Tetraploid	Thumpa	✓	Agricom	P		Grasslands Innovations Ltd
	Very early	Diploid	SafeGuard	✓	Valley Seeds			SARDI
	Early	Diploid	Guard	✓	Valley Seeds			SARDI
	Mid Season	Diploid	Maverick GII	✓	PGG Wrightson Seeds	Y		Grasslands Innovations Ltd
	Mid Season	Tetraploid	Ohau	✓	Agricom			Grasslands Innovations Ltd
	Mid Season	Tetraploid	Ohau AR37	✓	Agricom			Grasslands Innovations Ltd
	Late Season	Diploid	Turbo	✓	Valley Seeds			CropMark Seeds (NZ)
	Late	Tetraploid	Aber Niche	✓	Upper Murray Seeds			IBERS
	Late	Tetraploid	Perun	✓	Seed Distributors			DLF Seeds

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Tim Cashin
Leongatha, Victoria



Italian Ryegrass

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Tim Kooloos
Leongatha, Victoria



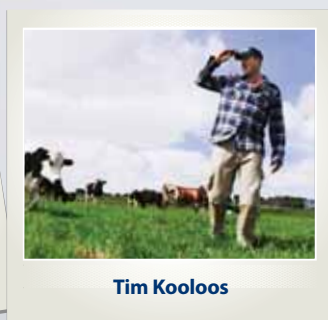
Perennial Ryegrass

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Agronomic Selection Criteria			Market Information			Intellectual Property Status		Background Information
Type Species	Flowering, Activity or Characteristics	Ploidy	Brand Name	Variety *	Australian Marketer	PPR**	TM***	Plant Breeder
Hybrid Ryegrass - Festulolium Hybrid	Late	Tetraploid	SF Splice AR1	✓	Seed Force			Cropmark Seeds NZ
PERENNIAL RYEGRASS								
Perennial	Early	Diploid	Boomer	✓	Valley Seeds	Y		Valley Seeds
	Early	Diploid	Everlast	P	Upper Murray Seeds	P		Sheldon Agri/Pasture Genetics
	Early	Diploid	Fitzroy	✓	PGG Wrightson Seeds	Y		VIC DPI
	Early	Diploid	Kangaroo Valley		Many			
	Early	Diploid	Kangaroo Valley Gold®		Upper Murray Seeds		Y	Sheldon Agri
	Early	Diploid	Kidman	✓	Heritage Seeds	Y		AgriSeeds, NZ
	Early	Diploid	Matilda®		Parkseeds Pty Ltd		Y	Parkseeds Pty Ltd
	Early	Diploid	Meridian AR1	✓	Heritage Seeds	Y		AgriSeeds, NZ
	Early	Diploid	Roper	✓	Valley Seeds	Y		Valley Seeds
	Early	Diploid	SF Tenacity®		Seed Force			
	Early	Diploid	Skippy		Vicseeds			
	Early	Diploid	Valley®		Seed Distributors		Y	Pasture Genetics
	Early	Diploid	Victorian		Many			
	Mid season	Diploid	Arrow AR1	✓	Heritage Seeds	Y		AgriSeeds, NZ
	Mid season	Diploid	AusVic	✓	Vicseeds	Y		Innovative Plant Breeders
	Mid season	Diploid	Avalon (+ AR1)	✓	Vicseeds	Y		VIC DPI
	Mid season	Diploid	Award Ryegrass	✓	Upper Murray Seeds	P		Sheldon Agri
	Mid season	Diploid	Blitz	✓	Specialty Seeds			Specialty Seeds NZ
	Mid season	Diploid	Bolton	✓	Vicseeds	Y		VIC DPI
	Mid season	Diploid	Camel	✓	Valley Seeds	Y		Valley Seeds
	Mid season	Diploid	Drylander®		Seed Distributors		Y	Pasture Genetics
	Mid season	Diploid	Extreme® (XTM) AR1	✓	PGG Wrightson Seeds	Y		Wrightson Seeds, NZ
	Mid season	Diploid	Extreme® (XTM) AR37	✓	PGG Wrightson Seeds	Y		Wrightson Seeds, NZ
	Mid season	Diploid	Excess AR1	✓	PGG Wrightson Seeds	P		Grasslands Innovations Ltd
	Mid season	Diploid	Excess AR37	✓	PGG Wrightson Seeds	P		Grasslands Innovations Ltd
	Mid season	Diploid	Grasslands Nui		Many			
	Mid season	Diploid	Helix - Festulolium	✓	Cropmark Seeds	Y	Y	Cropmark Seeds, NZ
	Mid season	Diploid	Jumbuck	✓	Upper Murray Seeds	Y		Sheldon Agri
	Mid season	Diploid	Kingsgate	✓	AgriCom			Grasslands Innovations Ltd
	Mid season	Diploid	Kingston	✓	AgriCom	Y		Grasslands Innovations Ltd
	Mid season	Diploid	Prolong	✓	Valley Seeds	Y		Valley Seeds
	Mid season	Diploid	Samson AR1	✓	AgriCom	Y		AgResearch, NZ
	Mid season	Diploid	Samson AR37	✓	AgriCom	Y		Grasslands Innovations Ltd
	Mid season	Diploid	SF Joule AR1®	✓	Seed Force		Y	RAGT FR
	Mid season	Diploid	Shootout®		Seed Distributors		Y	Pasture Genetics
	Mid season	Diploid	Tomson®		Seed Distributors		Y	Pasture Genetics
	Mid season	Diploid	Wintas II		Tasglobal Seeds			
	Mid season	Tetraploid	Endure	P	Vicseeds	P		VIC DPI
	Mid-Late	Diploid	Ansa	✓	Seed Distributors			DLF Seeds
	Mid-Late	Diploid	Bronte		Irwin Hunter Seed Dist.			DLF Seeds (USA)
	Mid-Late	Diploid	MegaRich		Specialty Seeds			Specialty Seeds NZ
	Mid-Late	Tetraploid	Kai	✓	Cropmark Seeds			Cropmark Seeds, NZ
	Late	Diploid	Aber Magic	✓	Upper Murray Seeds	Y		IBERS
	Late	Diploid	Bronte	✓	Seed Distributors			DLF Seeds
	Late	Diploid	Expo AR37	✓	PGG Wrightson Seeds			Grasslands Innovations Ltd
	Late	Diploid	Impact 2	✓	Heritage Seeds	Y		AgriSeeds, NZ
	Late	Diploid	Matrix - Festulolium	✓	Cropmark Seeds	Y	Y	Cropmark Seeds, NZ
	Late	Diploid	One50	✓	AgriCom	Y		Grasslands Innovations Ltd
	Late	Diploid	One50 AR1	✓	AgriCom	Y		Grasslands Innovations Ltd
	Late	Diploid	One50 AR37	✓	AgriCom	Y		Grasslands Innovations Ltd
	Late	Diploid	Platinum	✓	Valley Seeds	Y		Cropmark Seeds, NZ
	Late	Diploid	Prospect AR37 (PSPT)	✓	AgriCom	P		Grasslands Innovations Ltd
	Late	Diploid	Revolution - Festulolium	✓	Seed Force	Y	Y	Cropmark Seeds, NZ
	Late	Diploid	Ultra - Festulolium	✓	Notman Seeds	Y	Y	Cropmark Seeds, NZ
	Late	Tetraploid	Aber Gain	✓	Upper Murray Seeds			IBERS
	Late	Tetraploid	Base AR37	✓	PGG Wrightson Seeds	P		Grasslands Innovations Ltd
	Late	Tetraploid	Halo AR37	✓	AgriCom			Grasslands Innovations Ltd
	Late	Tetraploid	Optima	✓	Seed Distributors		Y	Pasture Genetics
	Late	Tetraploid	Tanker	✓	Seed Distributors			DLF Seeds
Perennial hybrid	Very Late	Diploid	Bealey	✓	Heritage Seeds	Y		AgriSeeds, NZ
	Early	Diploid	Barberia	✓	Heritage Seeds	Y		Barenbrug, FR
	Mid season	Tetraploid	Jeta	✓	Seed Distributors			DLF Seeds
	Late	Diploid	Impact AR1	✓	Heritage Seeds			AgResearch, NZ
	Late	Tetraploid	Banquet II (BQT II) Endo5	✓	PGG Wrightson Seeds	Y	Y	Wrightson Seeds, NZ
	Late	Tetraploid	Shogun	✓	Heritage Seeds	Y		AgriSeeds (NZ)
TALL FESCUE								
Mediterranean	Mid Season		Astonish	P	Valley Seeds	P		Valley Seeds
	Mid Season		Charlem	✓	Upper Murray Seeds	P		Sheldon Agri
	Mid Season		Flecha	✓	AgriCom	Y		Grasslands Innovations Ltd
	Mid Season		Fraydo	✓	Heritage Seeds	Y		VIC DPI
	Mid Season		Origin	P	Seed Distributors	P		Sheldon Agri
	Mid Season		Prosper	✓	Heritage Seeds	Y		Barenbrug, FR
	Mid Season		Resolute	✓	PGG Wrightson Seeds	Y		Grasslands Innovations Ltd
	Mid Season		SF Medallion®	✓	Seed Force		Y	Gentos ARG
	Mid Season		Temora	P	PGG Wrightson Seeds	P		Grasslands Innovations Ltd
Temperate	Early		Ability	P	Valley Seeds	P		Valley Seeds
	Early		Au Triumph	✓	Many			
	Early		Barnaby	✓	Heritage Seeds	P		CRC FFI & NSW DPI & DAFWA
	Early		Dovey	✓	Heritage Seeds			Barenbrug, UK
	Early		Hummer MaxP	✓	AgriCom	P		Grasslands Innovations Ltd
	Early		Martin II	✓	Seed Distributors			DLF International, USA
	Early		Quantum II MaxP	✓	PGG Wrightson Seeds	P		Grasslands Innovations Ltd
	Early		SF Royal Q-100	✓	Seed Force			Gentos ARG
	Mid Season		Advance MaxP	✓	AgriCom	Y		Grasslands Innovations Ltd



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CLAAS Harvest Centre

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CLAAS



Agronomic Selection Criteria			Market Information			Intellectual Property Status		Background Information
Type Species	Flowering, Activity or Characteristics	Ploidy	Brand Name	Variety *	Australian Marketer	PPR**	TM***	Plant Breeder
	Mid Season		Demeter		Many			
	Mid Season		Kentucky 32		Seed Force			
	Mid Season		Pastoral	✓	Upper Murray Seeds	P		Sheldon Agri
	Mid Season		SF Festival		Seed Force			Pickseeds
	Mid Season		SF Finesse-Q	✓	Seed Force		P	RAGT
	Late		Boschhoek	✓	Upper Murray Seeds			
	Late		Martin 2	✓	Seed Distributors			
	Late		Tower	✓	Seed Distributors			DLF Seeds
PHALARIS								
Temperate	Semi Winter Dormant		Australian	✓	Many			
	Semi Winter Dormant		Australian II	✓	Heritage Seeds	Y		CSIRO
	Semi Winter Dormant		Australian Original®	✓	Upper Murray Seeds		Y	Sheldon Agri
	Semi Winter Dormant		Australis®		Seed Distributors			Pasture Genetics
	Semi Winter Dormant		Fosterville		Tasglobal Seeds			
	Semi Winter Dormant		Grazier		Upper Murray Seeds			Sheldon Agri
	Semi Winter Dormant		Maru		PGG Wrightson Seeds			Grasslands Innovations Ltd.
	Semi Winter Dormant		Uneta	✓	Many			
	Winter Active		Advanced AT	✓	Heritage Seeds	Y		CSIRO
	Winter Active		Amplify	P	Valley Seeds	P		Valley Seeds
	Winter Active		Holdfast	✓	Heritage Seeds			CSIRO
	Winter Active		Holdfast GT	✓	Heritage Seeds	Y		CSIRO
	Winter Active		Landmaster	✓	Heritage Seeds	Y		CSIRO
	Winter Active		Lawson	✓	Heritage Seeds	Y		Barenbrug, Argentina
	Winter Active		SF Maté	✓	Seed Force			Gentos ARG
	Winter Active		Siroian	✓	Many			CSIRO
	Winter Active		Sirosa	✓	Many			CSIRO
	Winter Active		Stockman	✓	Upper Murray Seeds	P		Sheldon Agri
	Summer Dormant		Atlas PG	✓	Heritage Seeds	Y		CSIRO
COCKSFOOT								
Temperate	High Summer Dormancy		Kasbah	✓	Heritage Seeds			
	High Summer Dormancy		Sendace		Tasglobal Seeds			TAS DPI
	Moderate Summer Dormancy		Currie		Many			
	Moderate Summer Dormancy		Gobur		Vicseeds			Innovative Plant Breeders
	Moderate Summer Dormancy		Uplands	✓	Tasglobal Seeds	Y		TAS DPI
	Summer Active		Admiral	P	Valley Seeds	P		Valley Seeds
	Summer Active		Ambassador®		Seed Distributors		Y	DLF International, USA
	Summer Active		Drover	✓	Upper Murray Seeds	P		Sheldon Agri
	Summer Active		Grassly	✓	Heritage Seeds			RAGT, FR
	Summer Active		Howlong	✓	Heritage Seeds			Barenbrug, FR
	Summer Active		Kara	✓	Agricom			Grasslands Innovations Ltd.
	Summer Active		Megatas	✓	Tasglobal Seeds	Y		TAS DPI
	Summer Active		Oxen		Seed Distributors, Upper Murray Seeds, Ballard Seeds			
	Summer Active		Porto		Many			
	Summer Active		Savy		Agricom			Grasslands Innovations Ltd.
	Summer Active		SF Greenly	✓	Seed Force			R2n RAGT
	Summer Active		SF Lazuly	✓	Seed Force			R2n RAGT
	Summer Active		Tekapo		PGG Wrightson Seeds			Grasslands Innovations Ltd.
	Summer Active		Vision	✓	Cropmark Seeds		Y	AgResearch, NZ
	Summer Active		Wana	✓	Cropmark Seeds	Y	Y	AgResearch, NZ
	Summer Active		Yarck		Vicseeds			Innovative Plant Breeders
Mediterranean	Summer Active		SF Medly	✓	Seed Force			INRA (France)
OTHER PERENNIAL GRASSES								
Grazing Brome	Winter/Spring Active		Gala	✓	Agricom			Grasslands Innovations Ltd
Pasture Brome	Spring/Summer Active		Bareno	✓	Heritage Seeds			Barenbrug, FR
	Spring/Summer Active		Excultas		Tasglobal seeds			TAS DPI
	Spring/Summer Active		Nandu Brome	✓	Upper Murray Seeds			Institute of Biological, Environmental and Rural Sciences (IBERS)
Prairie Grass	Winter/Summer		Atom		Agricom			Grasslands Innovations Ltd
	Winter/Summer		Free Flow Matua		Seed Force			AgResearch, NZ
	Winter/Summer		Matua		PGG Wrightson Seeds			Grasslands Innovations Ltd
	Winter/Summer		SF Jeronimo	✓	Seed Force			Gentos ARG
	Winter/Summer		Lakota	✓	PGG Wrightson Seeds			Grasslands Innovations Ltd
Pucinelia			Menemen		Many			
Timothy Grass			Grasslands Charlton		Agricom			Grasslands Innovations Ltd
Veldt Grass			Mission		Many			
Wallaby Grass	Medium Soils		Taranna		AusWest Seeds			
TROPICAL GRASSES								
Angleton grass (<i>Dichanthium aristatum</i>)	Late Maturing, Especially suited to alkaline cracking-lays soils		Floren	✓	Progressive Seeds	Y		QLD DPI
Bahia Grass (<i>Paspalum notatum</i>)			Argentine		Many			
	Not selected by stock		Pensacola		Many			
Bambatsi Panic (<i>Brachiaria decumbens</i>)	Heavy clays		Bambatsii		Many			
			Signal Grass		Many			
			Mulato II	✓	Heritage Seeds	Y		CIAT

Agronomic Selection Criteria			Market Information			Intellectual Property Status		Background Information
Type Species	Flowering, Activity or Characteristics	Ploidy	Brand Name	Variety *	Australian Marketer	PBR**	TM***	Plant Breeder
Brunswick Grass (<i>Paspalum nicorae</i>)	Rhizomatous for sands		Blue Dawn		Progressive Seeds			Enviroseeds
Buffel Grass (<i>Cenchrus ciliaris</i>)	Red loams and clays Fertile friable soils Loams, friable clays		American		Many			
			Biloela		Many			
			Gayndah		Many			
			Nunbank		Many			
			Lakota	✓	Heritage Seeds	Y		Pogues Seed
			Narrowleaf		Many			
Carpet Grass (<i>Axonopus affinis</i>)								
Creeping Blue grass (<i>Bothriochloa insculpta</i>)	Nutritious leafy Feed / Late flowering Heavier soils		Bisset		Selected Seeds, Others			
Couch Grass (<i>Cynodon dactylon</i>)			Hatch Common		Many Many			
			Giant Bermuda		JH Williams & Sons			
Desmanthus Digit Grass (<i>Digitaria ciliaris</i>)	Clay soils Tufted - sands and loams		Marc Premier		Progressive Seeds Many			DPI&F QLD Enviroseeds
Finger Grass (<i>Digitaria milanjiana</i>)	More suited to wet tropics Stolons - sands, loams		Jarra		Many			
			Strickland	✓	Progressive Seeds	Y		CSIRO
Forest Blue Grass (<i>Bothriochloa blakelyi</i>)	Wide range of soils		Swann	✓	Progressive Seeds	Y		QLD DPI
Green Panic (<i>Megathyrsus maximus</i> var. <i>pubiglumis</i>)			Petrie		Many			
Guinea Grass (<i>Megathyrsus maximus</i>)	Wet tropics Wet tropics Friable clays		Hamil Common Common		Many Many Many			
Hamil Grass (<i>Panicum maximum</i>)	Tougher than green		Common Common		Many Many			
Humidicola (<i>Uroahloa humidicola</i>)	Wet tropics, waterlogged		Common		Many			
Indian Blue Grass (<i>Bothriochloa pertusa</i>)			Bowen		Many			
			Keppel		Many			
Kikuyu (<i>Pennisetum clandestinum</i>)			Medway Common Whittet		Selected Seeds Many Many			
			Acacia Plateau Consol	✓	Seed Force Many	Y		
Lovegrass (<i>Eragrostis curvula</i> var. <i>conferta</i>)								
Mitchell Grass (<i>Astrebala</i> spp)			Common		Many			
Molasses Grass			Common		Many			
Panic (<i>Ara paspalum</i>)			Common		Many			

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Agronomic Selection Criteria			Market Information			Intellectual Property Status		Background Information
Type Species	Flowering, Activity or Characteristics	Ploidy	Brand Name	Variety *	Australian Marketer	PPR**	TM**	Plant Breeder
Panic (<i>Megathysrus maximus</i>)	Gatton type with broader leaf		G2®	✓	Australian Premium Seeds	Y		Dr DS Loch
Panic (<i>Panicum laxum</i>)			Shadegro	✓	Australian Premium Seeds	Y		
Panic (<i>Panicum maximum</i>)			Common		Many			
Panic Grass			Megamax 049	✓	Heritage Seeds		P	CRC FFI & NSW DPI & DAFWA
			Megamax 059	✓	Heritage Seeds		P	CRC FFI & NSW DPI & DAFWA
Panicum maximum x P. infestum	Well drained, fertile soils		NuCal™ Guinea grass		Progressive Seeds			
Para Grass	Ponded pasture		Common		Many			
Paspalum s+A49:N49palum spp)			Broadleaf		Auswest Seeds			
Pearl Millet	Late flowering		Maxa Millet		Australian Premium Seeds		Y	
Purple Pigeon Grass (<i>Setaria incrassata</i>)	Heavy soils		Common		Many			
Queensland Blue Grass (<i>Dichanthium sericeum</i>)	(Native) sands to clay soils		Scatta™	P	Progressive Seeds	P		Enviroseeds
Rhodes Grass (<i>Chloris gayana</i>)	For high rainfall zone		Callide		Many			
	Fine stem and leaf, medium flowering		Finecut	✓	Selected Seeds Pty Ltd	Y		Dr DS Loch
	Salt tolerant, very fine leaf & stem. Even flowering for hay		Gulfcut	✓	Selected Seeds Pty Ltd	Y		Dr DS Loch
	Resilient type		Katambora		Many			
	Cold tolerance, late flowering		Mariner®	✓	Australian Premium Seeds	Y		Dr DS Loch
	Nematode resistant		Nemkat	✓	Heritage Seeds	Y		QLD DPI
			Pioneer		Many			
	Salt tolerant, strongly stoloniferous, high DM yield		Reclaimer	✓	Selected Seeds Pty Ltd	Y		Dr DS Loch
	Fine leaf and stem, salt tolerance		Sabre®	✓	Australian Premium Seeds	Y		Dr DS Loch
	Salt tolerant pioneer type. Medium flowering		Salcut	✓	Selected Seeds Pty Ltd	Y		Dr DS Loch
	Fine stem and leaf, late flowering		Tolgar®	✓	Australian Premium Seeds	Y		Dr DS Loch
	Improved Pioneer, medium flowering		Topcut	✓	Selected Seeds Pty Ltd	Y		Dr DS Loch
	Large leaf, fine stem, late flowering		Toro®	✓	Australian Premium Seeds	Y		Dr DS Loch
Sabi Grass (<i>Urochloa masambicensis</i>)	Tufted species		Nixon		Many			
	Stolon - light to heavy soils		Sarajii	✓	Progressive Seeds	Y		CSIRO
Setaria (<i>Setaria spp</i>)			Kazungula		Many			
	Frost tolerant		Narok		Many			
	Frost tolerant		Solander		Many			
	Frost tolerant		Splenda		Heritage Seeds			
Signal Grass (<i>Brachiaria decumbens</i>)			Signal		Many			
Siratro	Rust resistant		Common		Many			
SUB CLOVER								
Brachycalyinum	Early		Losa	✓	Heritage Seeds	Y		LODI Italy
	Early		Mawson (B55)	✓	Heritage Seeds	P		SARDI
	Mid		Antas	✓	Heritage Seeds	Y		LODI Italy
	Mid		Clare		Many			SARDI
	Mid		Clare 2®		Seed Distributors		Y	Pasture Genetics
	Mid		Mintaro	✓	Heritage Seeds	Y		SARDI
Subterraneum	Early		Daliak		Many			DAFWA
	Early		Dalkeith	✓	Many			DAFWA
	Early		Dalsa®		Seed Distributors		Y	Pasture Genetics
	Early		Izmir	✓	AusWest Seeds & Irwin	Y		DAFWA
					Hunter			
	Early		Nungarin	✓	Many			
	Early		Urana	✓	AusWest Seeds, Stephen	Y		DAFWA
					Pasture Seeds, Irwin			
	Early-Mid		Bindoon	✓	PGG Wrightson Seeds	Y		DAFWA
	Early-Mid		York		Heritage Seeds			
	Early-Mid		Seaton Park		Many			
	Mid		Campeda	✓	Heritage Seeds	Y		LODI Italy
	Mid		Coolamon	✓	AusWest Seeds, Stephen	Y		DAFWA
					Pasture Seeds, Irwin			
					Hunter			
	Mid		Junea	✓	Many			NSW DPI
	Mid		SF Narrikup	✓	Seed Force	P		DAFWA
	Mid		Woogenellup	✓	Many			DAFWA
	Mid-Late		Denmark	✓	Heritage Seeds	Y		DAFWA
	Mid-Late		Goulburn	✓	PGG Wrightson Seeds	Y		DAFWA
	Mid-Late		Karridale	✓	Many			NSW DPI
	Mid-Late		SF Rosabrook	✓	Seed Force	P		DAFWA
	Late		Ovaflow®		Seed Distributors		Y	Pasture Genetics

Agronomic Selection Criteria			Market Information			Intellectual Property Status		Background Information
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Yanninicum	Very Late		Leura	✓	PGG Wrightson Seeds			VIC DPI
	Early-Mid		Trikkala		Many			
	Mid		Hatrik®		Seed Distributors		Y	Pasture Genetics
	Mid		Meteora		Many			VIC DPI
	Early		Monti	✓	Heritage Seeds	P		SARDI
	Mid		Narrikup		Many			
	Mid		Riverina	✓	AusWest Seeds, Stephen	Y		NSW DPI
	Mid				Pasture Seeds, Irwin			
	Mid		Trikkala	✓	Hunter			VIC DPI
	Late		Gosse	✓	Many	Y		VIC DPI
	Late		Napier		Heritage Seeds			
					Many			
PERSIAN CLOVER								
Hard Seeded	Early season		SARDI® Persian		Seed Distributors	Y	Y	SARDI
	Early-mid season		Nitro Plus	✓	Heritage Seeds			DAFWA
			Morbuk		Auswest Seeds			
			Prolific		Heritage Seeds, Ballard			
			Thunder		Seeds			
Soft Seeded	Mid season		Flash	✓	Auswest Seeds	Y		Seed Genetics International
	Mid season		Lightning	✓	Seed Genetics Int.	Y		IPB
	Late season		Laser	✓	Heritage Seeds	Y		IPB
	Mid-late season		Lusa	✓	Heritage Seeds	Y		VIC DPI
	Mid-late season		Turbo®		Tasglobal Seeds	Y		
	Late season		Enrich		Seed Distributors		Y	Pasture Genetics
	Late season		Turbo Plus		Many			Specialty Seeds NZ
	Late season		Anchor		Upper Murray Seeds			Michel Obtention
			Maral (Shaftal)		Auswest Seeds			
			RD8		Many			
					Auswest Seeds			
OTHER ANNUAL CLOVER								
Arrowleaf	Early		Cefalu	✓	Heritage Seeds, West	Y		DAFWA
	Late		Zulu II	✓	Coast Seeds			
	Late		Zulumax®		Heritage Seeds		Y	Pasture Genetics
	Late		Seelu		Seed Distributors			
Balansa	Very Late		Arro Tas	✓	Many	Y		TAS DPI
	Early		Enduro®		Tasglobal Seeds	Y		AgriCol, RSA
	Early		Frontier	✓	Seed Distributors	Y	Y	DAFWA
	Early		Cobra		Heritage Seeds			Pristine Forage Technologies
	Mid		Border	✓	Seed Distributors	Y		Seed Genetics International
	Mid		Taipan	✓	Seed Genetics Int.	Y		Pristine Forage Technologies
	Mid		Paradana	✓	PGG Wrightson Seeds	Y		
	Late		Bolta	✓	Many	Y		PIRSA
	Late		Viper	✓	Heritage Seeds	Y		Pristine
					AusWest Seeds, Stephen			
					Pasture Seeds, Irwin			
					Hunter			
Berseem	Late		Vista	✓	Heritage Seeds	P		SARDI
	Mid-Late		Elite II	✓	Heritage Seeds	Y		IPB
	Mid-Late		Memphis	✓	Upper Murray Seeds	Y		Michel Obtention
	Late		Alexandria®		Seed Distributors		Y	Pasture Genetics
Bladder	Multi-cut		Carmel		Many			
	Early-Mid		Agwest Bartolo	✓	Seed Distributors, PPA,		Y	DAFWA
					Ballard Seeds, PGW			
					Seeds			
Crimson	Mid-Late		Blaza	✓	Heritage Seeds	Y		Pristine Forage Technologies
	Mid-Late		Caprera		Many			
Gland Purple			Prima		Many			
			Electra		Auswest Seeds, Upper			
					Murray Seeds			
Rose	Early		SARDI Rose		Seed Distributors		Y	SARDI
			Hykon		Many			
Sulla	Mid-Late		Moombi	✓	PGG Wrightson Seeds			SARDI
	Mid-Late		Wilpena	✓	PGG Wrightson Seeds	Y		SARDI

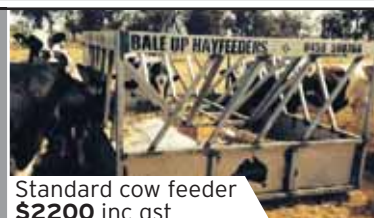
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SERRADELLA								
Yellow (Hard Seeded)	Early - Mid		Charano	✓	Heritage Seeds	Y		
	Early - Mid		Elgara		Many			
	Early - Mid		Madeira		Many			
	Mid (WA)		Santorini	✓	Ballard Seeds	Y		DAFWA
	Mid - Late		Avila		Many			
Yellow (Med-Hard Seeded) French	Early (WA)		Yelbeni	✓	Ballard Seeds, WR Hagboom & Co	Y		DAFWA
	Early		Yellotas		Auswest Seeds, Tasglobal Seeds			
	Mid (WA), hard seeded		Margurita	✓	Ballard Seeds	Y		DAFWA
(Hard Seeded)			Serratas		Tasglobal Seeds, Auswest Seeds			
(Soft Seeded)	Mid		Cadiz	✓	Ballard Seeds, Heritage Seeds	Y		
	Early - Mid		Eliza	✓	Ballard Seeds	Y		DAFWA
BISERRULA								
BISERRULA	Mid-Late (WA), hard seeded		Casbah	✓	Many			DAFWA
			Mauro	✓	Many	Y		
VETCH								
Wooly Pod	Mid (Low hard-seed)		Capello	✓	Heritage Seeds	Y		
	Mid (High hard-seed)		Haymaker Plus	✓	Heritage Seeds	Y		
	Mid-Late (High hard-seed)		Namoi		Many			
	Early - wooly pod - soft seed		RM4	✓	Heritage Seeds	P		SARDI
	Early - common - soft seed		Volga	✓	Heritage Seeds	P		SARDI
	Mid - common - soft seed		Rasina	✓	Heritage Seeds	Y		SARDI
	Late - common - soft seed		Morava	✓	Heritage Seeds	Y		SARDI
B.benghalensis	Late - common - soft seed		Timok	P	Seed Distributors	P		SARDI
	Late		Benatas		Auswest, Stephen Pasture Seeds			Tasglobal Seeds
MEDIC								
Barrel	Early season		Caliph	✓	Seed Distributors		Y	SARDI
	Early season		Cheetah	✓	Stephen Pasture Seeds	Y		
	Mid season		Jester	✓	Heritage Seeds	Y		SARDI
	Mid season		Lynx	✓	PGG Wrightson	Y		
	Mid season		Paraggio	✓	Many			
	Mid season		Sephi		Many			
	Mid-Late season		Jemalong		Many			
	Late season		Mogul	✓	Seed Distributors		Y	SARDI
	High hard seed		Santiago	✓	Many			
	Mod hard seed		Scimitar	✓	Heritage Seeds	Y		SARDI
Burr	Spineless		Cavalier	✓	Seed Distributors		Y	SARDI
	SU tolerant		Sultan SU	✓	Heritage Seeds	P		SARDI
	Vey Hard seeded		Bindaroo®	✓	Seed Distributors		Y	QDPI
Button Gama	Good aphid tolerance		Paraponto	✓	Many			
Murex	High hard seed		Zodiac		Many			
Snail	Early season		Silver®		Seed Distributors		Y	QDPI
			Sava		Many		Y	
			Kelson		Many			
Sphere Strand	Late season		Orion	✓	Many			
	Mid season		Angel	✓	Heritage Seeds	Y		SARDI
	Early season		Jaguar	✓	Seed Distributors		Y	Pristine Forage Technologies
	Early season		Harbinger		Many			
	Mid season		Harbinger AR		Many			
WHITE CLOVER								
Large leaved			Aber Normous	✓	Upper Murray Seeds			Institute of Biological, Environmental and Rural Sciences (IBERS)
			Excel Ladino	✓	Seed Genetics Int.	Y		Seed Genetics International
			Grasslands Kopu II		PGG Wrightson Seeds			
			Haifa		Many			
			Jumbo	✓	Seed Distributors			DLF Seeds
			Mainstay	P	Agricom	P		AgResearch, NZ
			Osceola		PGG Wrightson Seeds			
	Late		Quest	✓	Seed Force Pty Ltd	Y		Grasslanz Technology Ltd
			Super Ladino	✓	Auswest Seeds	Y		
			Waverly		Upper Murray Seeds			
			Will Ladino		Agricom			
			WinterWhite	✓	Seed Genetics Int.	Y		Seed Genetics International
			WinterWhite II	✓	Seed Genetics Int.			Seed Genetics International
			Grasslands Bounty	✓	PGG Wrightson Seeds	Y		Grasslands Innovations Ltd
Medium-Large leaved			Grasslands Tribute	✓	Agricom			
			Grasslands Trophy		Agricom			
	Mid-late		Mink	✓	Heritage Seeds	Y		VIC DPI
			Weka	✓	Heritage Seeds	P		Agriseeds, NZ
Medium leaved			Aber Dance	✓	Upper Murray Seeds			Institute of Biological, Environmental and Rural Sciences (IBERS)
			Altitude		Heritage Seeds			Grasslands NZ
			Braidwood	✓	Seed Genetics Int.			Seed Genetics International
			Canterbury	✓	Specialty Seeds	Y		Seed Genetics International

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Small leaved			Demand	✓	Cropmark Seeds	Y	Y	AgResearch, NZ
			Grasslands Huia		Many			
			Grasslands Pitau		Many			
			Grasslands Sustain		Seed Force			
			Irrigation		Many			
			Super Huia	✓	Auswest Seeds	Y		
			Storm	✓	Heritage Seeds			
			Reisling	✓	Seed Distributors			DLF Seeds
			Aber Ace	✓	Upper Murray Seeds			Institute of Biological, Environmental and Rural Sciences (IBERS)
			Colt		Upper Murray Seeds			
			Grasslands Prestige	✓	Agicom	Y		AgResearch, NZ
			Grasslands Tahora II	✓	PGG Wrightson Seeds			Grasslands Innovations Ltd
			Nomad	✓	Agicom	Y		AgResearch, NZ
LOTUS								
	<i>Lotus corniculatus</i>		Leo Ltus		IJH Williams & Sons			
STRAWBERRY CLOVER								
	Erect		Palestine		Many			
	Semi-erect		Lucilla		PGG Wrightson Seeds			
	Prostrate		O'Connors	✓	Many			Grasslands Innovations Ltd.
RED CLOVER								
Early maturing	Low		Astred	✓	PGG Wrightson Seeds	Y		TAS DPIWE
	Low		Grasslands Broadway		Agicom			
	Medium		Rubitas	✓	AusWest, Stephen Pasture Seeds, TasGlobal	Y		
	Medium		Grasslands Colenso		Agicom			Grassland Innovations Ltd
	Medium		Renegade		Seed Distributors		Y	DLF Seeds
	High		SF Rossi	✓	Seed Force	P		R2n RAGT
Early-mid maturing	Low		Hamua		Many			AgResearch, NZ
	Very Low		Grasslands Relish	✓	Agicom	P		TasGlobal
Mid season maturing								
Late season maturing	Low		Rajah	✓	Seed Distributors		Y	DLF Seeds
	Medium		Redquin		Many			Sheldon Agri
	High		Red 812		Upper Murray Seeds			AgriSeeds (NZ)
	High		Tuscan		Heritage Seeds			AgResearch, NZ
	High		Turoa		Many			AgResearch, NZ
	High		Pawera		Many			AgResearch, NZ
TROPICAL LEGUMES								
American Jointvetch (<i>Aeschynomene americana</i>)	Frost susceptible, late flowering		Glenn		Auswest Seeds			
ATRO Siratro (<i>Macroptilium atropurpureum</i>)	Late flowering		Lee		Auswest Seeds			
			Aztec Atro	✓	Queensland Agricultural Seeds, PGG Wrightson Seeds, Selected Seeds	Y		
			Siratro		Many			
Axillaris (<i>Macrotyloma axillare</i>)			Archer		Many			
Burgundy Bean (<i>Macroptilium bracteatum</i>)	Light-Heavy soils		B1 Burgundy®		Heritage Seeds		Y	CSIRO



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Agronomic Selection Criteria			Market Information			Intellectual Property Status		Background Information
Type Species	Flowering, Activity or Characteristics	Ploidy	Brand Name	Variety *	Australian Marketer	PPR**	TM***	Plant Breeder
			Cadarga		Heritage Seeds		Y	
			Presto	✓	Heritage Seeds	Y		Heritage Seeds
			Garnet	✓	Heritage Seeds	Y		Heritage Seeds
			Burgundy		Auswest Seeds			
			Juanita		Many			
Butterfly Pea (<i>Clitoria ternatea</i>)			Blue Pea		Many			
			Milgarra		Many			
Centro (<i>Centrosema pubescens</i>)			Cardilo		PGG Wrightson Seeds			
			Common Centro		Many			
Cowpea (<i>Vigna unguiculata</i>)			Caloona		Many			
			Poona		Many			
			Red Caloona		Many			
			Black Stallion		Aust. Premium Seeds			
			Ebony	✓	Heritage Seeds	Y		CSIRO
Creeping Vigna (<i>Vigna parker</i>)			Shaw		Many			
Desmanthus (<i>Desmanthus virgatus</i>)			Jaribu		Many			
	Clay soils		Marc	✓	Progressive Seeds	Y		DPI&F QLD
Desmodium (<i>Desmodium intortum</i>)			Greenleaf		Many			
Forage Peanut (<i>Arachis pinto</i>)	Pinto peanut		Amarillo		Many			QDPI
			Bolton		PGG Wrightson Seeds			
Glycine (<i>Neonotonia wightii</i>)			Cooper		Many			
			Malawi		Many			
			Tinaroo		Many			
Joint Vetch (<i>Aeschynomene paniculata</i>)			Common		Many			
Lablab (<i>Lablab purpureus</i>)	Late maturing		Highworth		Many			
	Early maturing		Koala	✓	Many	Y		
	Very late maturing		Rongai		Many			
Leucaena (<i>Leucaena leucocephala</i>)			Cunningham		Many			
			Peruvian		Many			
			Taramba	✓	Many	Y		
			Wondergraze	✓	Leucseeds Pty Ltd	Y		
Lotononis (<i>Lotononis bainesii</i>)			Miles	✓	Many	Y		

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Agronomic Selection Criteria			Market Information			Intellectual Property Status	Background Information
Type Species	Flowering, Activity or Characteristics	Ploidy	Brand Name	Variety *	Australian Marketer	PBR**	TM*** Plant Breeder
Roundleaf Cassia (<i>Chamaecrista rotundifolia</i>)			Wynn		Many		
Siratro (<i>Macroptilium atropurpureum</i>)			Common		Many		
Stylo (<i>Stylosanthes hippocampoides</i>)	Caribbean, drier, cooler climates		Amiga		Heritage Seeds		CSIRO
	Late flowering		Beefmaker®		Australian Premium Seeds	Y	
	Fine stem		Oxley		Many		
	Caatigna		Primar		Many	Y	
	Shrubby		Seca		Many		
	Warm/moist climate		Siran		Heritage Seeds		CSIRO
	Caatigna		Unica		Many	Y	
	Caribbean		Verano		Many		
HERBS							
Chicory	Short term		Commander		Heritage Seeds		Suba & Unico, Italy
	Short term		Grouse	✓	Agricom		Grasslands Innovations Ltd
	Perennial		Balance®		Seed Distributors	Y	Pasture Genetics
	Perennial		Chico®		Cropmark Seeds	Y	Suba & Unico, Italy
	Perennial		Choice	✓	Agricom	Y	Grasslands Innovations Ltd
	Perennial		Le Lacerta	✓	Valley Seeds	Y	Fadisol
	Perennial		Puna	✓	PGG Wrightson Seeds	Y	Grasslands Innovations Ltd
	Perennial		Puna II	✓	PGG Wrightson Seeds	Y	Grasslands Innovations Ltd
Plantain	Perennial		SF Punter		Seed Force	P	Suba & Unico, Italy
	Perennial		Ranger®		Seed Distributors	Y	Pasture Genetics
	Perennial		SF Boston		Seed Force		
	Perennial		SF Endurance		Seed Force		
	Perennial		Tonic	✓	Agricom	Y	Grasslands Innovations Ltd

This Pasture Variety Database is sourced from the Australian Seeds Federation and its members and is intended for information purposes only.

* Variety Confirmation: Confirms if a brand of a species qualifies for the use of the term 'variety' by way of meeting one or more of the definitions for a 'variety' as nominated by the International Union for the Protection of New Varieties of Plants, Organisation for Economic Cooperation and Development or Plant Breeders Rights.

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GROWING BETTER PASTURES

Opportunity in diverse pasture

Key points

- ✓ Diverse mixtures offer an opportunity for the shoulder season
- ✓ Reduce nitrogen leaching losses
- ✓ Management challenges



By Keith Pembleton
Dairy Centre
Tasmanian Institute of Agriculture

As levels of ryegrass utilisation on dairy farms reach their economic maximum a question often asked is “where will the next gain in productivity in the feedbase come from?” A potential method of achieving further productivity gain is to use diverse pasture mixtures, meaning pasture mixtures containing three or more species.

A recent review into diverse pasture mixtures presented at the 2014 Australasian Dairy Science Symposium investigated the potential opportunities that diverse pastures might provide as well as the perceived challenges around their use on dairy farms.

Each of these opportunities and challenges will be summarised below.

Opportunities for diverse pasture mixes to achieve productivity gains

Increasing the diversity of pasture species is proposed to increase the total annual dry matter (DM) productivity of pastures. This opportunity is well founded on ecological theory, as increasing the number of species present means there is a greater chance of gaps being exploited within the pasture.

Research in Australia and New Zealand investigating this opportunity for dairy pastures has reported a range of results from no benefit to a benefit of 15% in annual DM productivity. However, in all experiments diversity in species lead to improvements in the production of shoulder season pasture (summer and/or autumn).

Furthermore, research in Tasmania has shown this benefit will occur with as little as three sown species present. In all cases the increase in summer and autumn pasture production was associated with the characteristics of the additional species (e.g. heat tolerance and deep-rooted habit with species such as plantain, chicory or lucerne) rather than the diversity itself.

Diverse pasture mixtures are also proposed to have better nutritive value than simple pastures.

This is particularly true for neutral detergent fibre content and in cases of low nitrogen fertiliser use, crude protein content. However, this improved nutritive value does not necessarily translate into an improvement in milk production.

Experiments investigating the milk production of cows grazing diverse pasture mixtures compared with simple pastures have identified a range of responses.

However, these experiments have used a range of forage allocation levels and there may be an interaction effect between pasture type and forage allocation rate (see Figure 1).

Experiments that allocated cows less than 20 kilograms ►

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Fed unstable forages, a cow with borderline rumen function can easily develop Sub Acute Ruminal Acidosis (SARA). When SARA occurs, rumen function isn't optimized to make the best use of any ration. SARA is simply an occupational hazard for the modern dairy cow, and costs are estimated at more than **\$1.00** per cow daily.^{1,2}

Keep Silage Stable During Feedout

Aerobic instability during feedout can often cause

Keep forages stable during feedout and help maintain rumen function — and performance.

spoilage yeasts, bacteria and mold to grow. Spoilage yeasts are found naturally on all growing crops. Once feedout surfaces are exposed to oxygen, the yeasts will start to multiply. Research-proven forage inoculants, such as **Lalsil HC** can help combat aerobic instability.

Unstable forages pose a real threat to rumen function and performance — especially during summer months when the risk of SARA can be greater.

In fact, a study showed that the presence of spoilage yeast from 10⁵ to 10⁹ colony-forming units (CFU) per gram equivalents in corn silage routinely and significantly reduced rumen pH by 0.4 units.³

Comparison of Studies Feeding Aerobically Unstable Forages

Forage	Inclusion Rate in the Ration Dry Matter	Milk Yield Reduction	Dry Matter Intake Reduction
Aerobically unstable high-moisture shell corn (HMSC) ⁴	33% ⁴	3.2 kgs. per cow daily ⁴	No Change ⁴
Aerobically unstable HMSC ⁵	29% ⁵	1 kg per cow daily ⁵	No Change ⁵
Aerobically spoiled corn silage ⁶	5.4% ⁶	—	-7.4% reduction ⁶

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¹ Enemark, J.M.D. 2008. The monitoring, prevention and treatment of sub-acute ruminal acidosis: A review. *The Veterinary Journal* 176: 32-43.

² Kleen J. L. and C. Cannizzo. 2012. Incidence prevalence and impact of SARA in dairy herds. *Anim. Feed Sci. Technol.* 172: 4-8.

³ Santos M.C. et al. 2011. Spoilage yeast in silage have the potential to directly impact rumen fermentation. *J. Dairy Sci.* 94 (E-Suppl.1): 207 (Abstr.).

⁴ Hoffman P.C. & S. M. Ocker 1997. Quantification of milk yield losses associated with feeding aerobically unstable high moisture corn. *J. Dairy Sci.* 80, (Suppl.1):234 (Abstr.).

⁵ Kendall C., and D.K. Combs, and P.C. Hoffman 2002. Performance of dairy cattle fed high moisture shell corn inoculated with *Lactobacillus buchneri*. *J. Dairy Sci.* 85 (Suppl.1): 385 (Abstr.).

⁶ Whitlock, L. A. et al. 2000. Effect of level of surface spoiled silage on the value of corn silage based rations. *Cattlemen's Day*. 3 Mar. 2000: 22-24.

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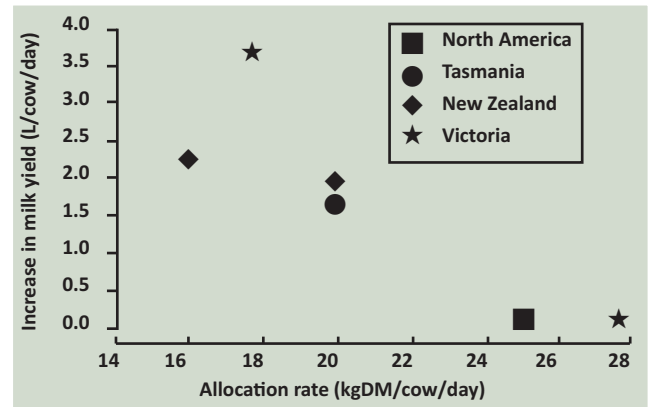


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GROWING BETTER PASTURES

Figure 1: Experiments with higher allocation rates have not measured an increase in milk production from diverse pasture mixtures while experiments with allocation rates of 20kgDM/cow/day or less have measured an increase in milk production.



DM/ cow/day (above a post-grazing residual of 1500kg DM/ha or five centimetres) had the greatest response with a milk production benefit of between 1.4 and 3.5 litres/cow/day when grazing diverse pasture mixtures.

Investigating this interaction to determine the forage allocation level that achieves the greatest benefit is a focus of the More Milk From Forages project being funded by Dairy Australia and delivered by the Tasmanian Institute of Agriculture.

Recent research undertaken in New Zealand by Lincoln University and Dairy NZ has identified that diverse pastures can reduce nitrogen (N) leaching losses from dairy farms by 19% when 50% of the farm area is sown to diverse pastures. This appears to be due to the inclusion of specific species such as plantain and chicory in the pasture mixture.

When grazed, these species are able to modify the concentration of N in the urine of cows and hence increases the distribution of urinary nitrogen across the pasture.

This phenomenon is a continued research focus into the use of diverse pastures in New Zealand.

Challenges for diverse pastures on dairy farms

While there are benefits to using diverse pasture mixtures on dairy farms they do present some challenges in terms of their management. Diverse pasture mixtures that contain both legumes and forbs/herbs can be particularly challenging in terms of broadleaf weed control.

A recent New Zealand wide survey undertaken by Ag Research identified that diverse pasture mixtures are more resilient to weed incursion than simple pastures in beef and sheep grazing systems. Unfortunately this was not the case for higher input dairy systems.

Farmers are advised to consult their agronomist with regard to potential herbicide options for diverse pastures.

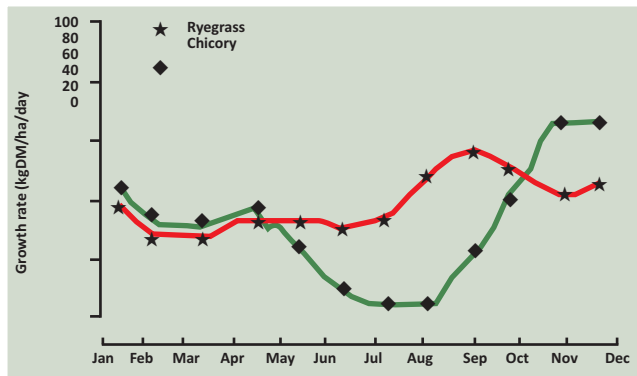
Alternative application methods may also be useful for the control of specific weeds, for example, using a wick wiper to control thistles in spring when they grow above the other pasture species.

Grazing management in pastures that contain multiple species is another challenge. When multiple species are present there will need to be some compromise in rotation length and grazing intensity. However, the period of the year when this compromise has to occur may be species specific.

For example for diverse pastures containing lucerne the grazing interval would have to be increased in autumn to allow taproot reserve re-accumulation.

GROWING BETTER PASTURES

Figure 2: At Terang, Vic, deeper-rooted species such as chicory are able to exploit the reduced growth of ryegrass caused by dry conditions making it an ideal species to include in a mixture to improve production during the summer dry months experienced at this location.



Furthermore if the benefits of a diverse pasture can be achieved with only one or two additional species (as suggested by research undertaken in Tasmania) the chances of grazing the management requirements of the species in the pasture coming into conflict are reduced.

Managing fertiliser inputs for diverse pastures is also more complex than simple pastures. Some species, like lucerne, have a greater potassium requirement than other species, while the pH and phosphorus requirement of most legumes is higher than that of grasses and the forbs.

Nitrogen fertiliser use can potentially shift the competitive advantage of diverse pastures away from the legume to the grass and herb species. However, this is dependent on grazing intensity, with more intensive grazing (to target residuals of 1400 kgDM/ha compared to 1800kgDM/ha) able to maintain favourable levels of clover in ryegrass pastures even under high nitrogen fertiliser use.

If using nitrogen fertiliser on diverse pastures it is important to ensure that the pastures are grazed to a stock density to ensure the extra forage grown is fully utilised.

Possibly the greatest challenge for farmers wishing to use diverse pasture mixtures is the benefits offered are due to specific species attributes rather than the diversity itself. This means if the correct species are not selected to include in the mixture the benefits of a diverse pasture mixture will not be realised.

When considering which species to sow it is important to think about the cause of limitations in the current pasture base and consider species with attributes that could alleviate these limitations.

Such species selection will be regionally specific and in some cases may even be farm or paddock specific.

Figure 2 presents an example for Terang, Victoria, where high temperatures and water deficits limit the growth rate of ryegrass during November and December. It is during those months that chicory is more productive due to its deep-rooted habit and heat tolerance.

Consequently this species would be a suitable candidate to include in a diverse pasture mixture at this location.

In conclusion, diverse pasture mixtures offer opportunities to increase shoulder season pasture growth, milk production and reduce nitrogen leaching losses from dairy pastures. While diverse pastures mixtures present management challenges not present for simple pastures, these can be overcome.

Article courtesy of Tassie Dairy News





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Perennial pasture mix delivers in Tas

Key points

- ✓ Diploid, tetraploid ryegrass and white clover pastures
- ✓ Two-pass sowing improves establishment rate
- ✓ Pivots allow good moisture management

THE pastures across Richard and Emily Gardner's property Annandale in Tasmania's Midlands have to be fit for purpose in what is an impressive and complex mix of irrigated and dryland enterprises, including a newly established 750-cow dairy.

For the Gardners, a carefully chosen mix of perennial pasture species offers a resilient, flexible and productive feed source that complements the livestock and cropping components of their diverse enterprise mix.

"The reasons Tasmanian farms can sustain diverse farming systems is that our properties are diverse by nature," Mr Gardner said.

"On Annandale we have native run country, with shallow ironstone soils that we largely manage for conservation values, through to fertile country ideal for livestock, dryland and irrigated cropping, including poppy production. The establishment of sizeable irrigation scheme in the Midlands means we have recently incorporated a 750-cow dairy into the mix."

Perennial ryegrass and white clover

Perennial ryegrass and white clover form the grazing platform of the Gardners' dairy operation.

"We have 230 hectares under an off-the-shelf high-productivity combination, which incorporates a mix of diploid and tetraploid perennial ryegrass varieties and white clover," Mr Gardner said.

"Establishing the white clover component of the mix is the real challenge. To date our best success has come from a two-pass sowing approach. In the first pass we sowed 75% of the ryegrass seed and we went back with the second pass, at an angle to the first, with the remaining 25% of the ryegrass and 100% of the clover.

"We also changed the sowing depth for the second pass — making it a bit shallower for the clover. It worked well."

According to Mr Gardner, one of the keys for success is establishing pas-

ture under pivots is he can manage risk by managing the moisture on the surface. "This allows us to be less precise with the seedbed preparation," he said.

Utilising livestock to manage pastures

Mr Gardner is currently using 300 yearling heifers to manage the excess growth in his new pastures — to get on top of the excess feed. Later they will be used to manage spring growth on the dryland sheep pastures, which are predominantly phalaris, with some ryegrass.

"Sheep still form an important component of our operation — even with irrigation, we still have a significant area of dryland pasture that can't be reliably used for cows during the winter — we don't even incorporate that country when we do our feed budgets because the seasons are so unreliable," he said.

Lucerne delivers multiple options

Further from the dairy Mr Gardner has established irrigated lucerne pastures, which he uses for hay and silage production (to supplement grazing for the dairy cows during winter) and fattening lambs.

"The lucerne also plays a key role in our irrigated cropping program — a four-to-five-year lucerne phase followed by two years of poppies," he said.

"We've recently shifted to a more winter-active lucerne variety (10 score compared with 7 score) and the growth has been phenomenal this past winter. The winter-active lucerne is ideal as it establishes quickly and we are looking for year-round production.



Richard and Emily Gardner have selected pastures species for their adaptability to the climate, landscape and ability to provide productivity and persistence in their diverse range of enterprises.

"Not all of our irrigated cropping country is suitable for lucerne, so we also grow a few grazing cereal crops (oats, wheat, triticale) following poppies. Unlike the lucerne, the cows can graze these paddocks during winter or we can use them for hay and silage production.

"Dryland lucerne is also an important part of the livestock part of the operation because of its seasonal versatility — response to small amounts of summer rainfall — lucerne is so responsive to compared with the grasses."

Farming is always challenging, but developing a complementary mix of enterprises and finding the best pastures and crops to support those enterprises certainly helps to achieve a productive, profitable and sustainable balance.

Contact: Richard Gardner, Annandale mobile: 0419 374 511, email: <r.gardner@bigpond.com>.

To read more stories about farmers who are maximising the potential of their operations through a productive pasture feedbase go to <www.pastureimprovementinitiative.com.au>. The Pasture Improvement Initiative is a pasture and livestock industry collaboration that aims to boost the productivity, profitability and sustainability of Australia's pasture feed base and in doing so, create value for livestock producers and stakeholders along the supply chain.

Farm at a glance

Farmers: Richard and Emily Gardner
Location: Tunbridge, Tasmania
Property size: 2600ha
Average annual rainfall: 465mm plus pivot irrigation
Soils: Highly variable shallow duplex soils — sands to heavy clays
Mixed farming system: 750-cow dairy, sheep (prime lamb + wool), irrigated (230ha) and dryland pastures and irrigated cropping (poppies, grazing winter cereals)

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(l-r) Full sister to dam: Larcrest Cale-ET VG-89. Dam: Seagull-Bay Snowman Darling VG-85. Photos: Beth Herges.

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(l-r) Dam: Ladys-Manor PL Shandra-ET VG-87 (photo Billy Heath). Dam: Ammon-Peachy Shauna-ET VG-87 (photo Beth Herges). Dam: Farnear Sharp of Adeen-ET EX-90 (2nd lact) (photo Beth Herges). MGD: De-Su 7012-ET EX-92 (photo Beth Herges)

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Coloured cow tops IDW competition



All breeds champion Wallumlands Sunstorm 8 with IDW helpers Ellie Lord, Ellie Falkenberg and Rachel Lucich; Greater Shepparton City councillor Fern Summer, co-owners Ben Govett, Glen Gordon and Daniel Bacon and breeder Terry Tidcombe.

By Laura Griffin

FOR the first time, an Illawarra cow has won International Dairy Week all breeds champion.

Wallumlands Sunstorm 8 is the first coloured cow to win, making it only the second time a breed other than Holsteins has topped the country's premier dairy event since it started in 1990, according to event director Brian Leslie.

The show-topper is owned by three friends — Glen Gordon, Cohuna, Victoria, Daniel Bacon, Tennyson, Vic, and Ben Govett, Dingee, Vic.

The trio were so impressed when they saw her at last year's IDW (she came second in her class) as a cow with potential to succeed at IDW that they bought her following the event from breeder Terry Tidcombe, Tatura, Vic, who had a tear in his eye when they brought out to

- ✿ **Judge:** Laurie Chittick - Australia
- ✿ **Grand Champion Illawarra:** Wallumlands Sunstorm 8, Gordon, Bacon & Govett, Cohuna, Vic.
- ✿ **Champion Cow:** Wallumlands Sunstorm 8 Gordon. **Reserve:** Winganna Empire Plum, Coburn Family, The Sisters, Vic.
- ✿ **Intermediate Champion:** Lara Twister Gladly, E Ferguson, Toolamba, Vic. **Reserve:** Llandovery JR Joan, Hayes Family, Girgarre, Vic.
- ✿ **Junior Champion:** Llandovery Blush's Jinny, Hayes Family. **Reserve:** Lemon Grove Molly, E Ferguson.
- ✿ **Exhibitor Encouragement Award:** Brooke & Justin Evans, JJ & BL Evans, Lacey, Vic.
- ✿ **Premier Sire Award:** Llandovery Jinnys Empire, ABS.
- ✿ **Premier Breeder:** Hayes Family.
- ✿ **Premier Exhibitor:** Hayes Family.

the arena when she was named all breeds champion.

Mr Gordon said they were "pretty ecstatic" to have the first coloured cow to top IDW, and it was made all the sweeter by sharing it with his best mates.

Super, super dairy cow wins Illawarras

UNBELIEVABLE, judging great dairy cows — is how Illawarra judge and breed doyen Laurie Chittick described his first experience as an International Dairy Week judge. Top of his list of traits he was looking for were "complete dairy cows with good udders".

Those traits were all shown by the grand champion exhibit and champion cow, Wallumlands Sunstorm 8, shown by trio of enthusiasts — Glen Gordon, Cohuna, Victoria, David Bacon, Tennyson, Vic, and Ben Govett, Dingee, Vic.

Mr Chittick said Sunstorm 8 was a "super, super dairy cow" and would prove to be the equal of past champions at IDW.

He congratulated the owners on the presentation of the January 2011 drop in-milk female, which also won *The Australian Dairyfarmer* best udder for the breed.

Sunstorm 8, bred by Terry Tidcombe, was bought by the trio in June last year after they had identified her at IDW 2014 (second in class) as a cow with potential to succeed at IDW. Greg Gordon said Sunstorm 8 was judged Supreme All Breeds at the 2014 Shepparton Show.

He said they planned to get the cow, which is run with his herd at Cohuna, back for IDW in 2016.

Earlier in the day Sunstorm 8 had to see off another high quality dairy cow in Lemon Grove Buttercup 335 shown by D. Ashe and Nicholson family, Girgarre, Vic.

Buttercup came second in the class and was given an honourable mention by the judge in the broad ribbon judging.

Mr Chittick said Buttercup's "time will come".

During the class judging he said Buttercup was a young cow that was developing nicely and the industry would see more of it in the future. "Unfortunately she had to come up against a super dairy cow in Sunstorm," he said.

Reserve senior champion was an aged cow, Winganna Empire Plum, sired by Llandovery Jinnys Empire, and shown by the Coburn family, The Sisters, Vic.

In the Intermediate broad ribbon judging it was Erin Ferguson, Toolamba, Vic, who showed the winner, Lara Twister Gladly, a two-year-old in-milk heifer sired by Hs Twister.

Twister Gladly impressed the judge who said he knew he was in for a good day when he saw her class of in-milk heifers.

"Wherever you look at her she is an ideal heifer," he said.

Reserve intermediate was Llandovery JR Joan shown by the Hayes family.

In the junior champion broad ribbon it was the Hayes family's Llandovery Blush's Jinny that received the sash.

Reserve was the entry of Erin Ferguson, Lemon Grove Molly, which was earlier second to Blush's Jinny in the class.

The Llandovery prefix was prominent and sire Llandovery Jinnys Empire took out the premier sire award.

The Tidcombe name again came to the fore when Wallumlands Dame Zara 7 was given an honourable mention in the heifer championship.

Mr Chittick thanked Brian Leslie for the invitation to judge at IDW where he had exhibited from 1999 to 2014.

He said it took a lot of thought before deciding to step into the ring where he had shown for many years.

—By Alastair Dowie



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Trifector win by Elmar Hosteins

By Laura Griffin
and Carlene Dowie

IN AN International Dairy Week first for any breed, the Hore family's stud Elmar Holsteins, Leitchville, Victoria, won all three broadribbons in the senior Holstein cow class — champion, reserve and honourable mention.

And the feat was all the more impressive because all three were from the same maternal line that can be traced back to Elmar Leader Jessica that was grand champion cow at IDW 2003.

This year's senior champion Holstein Elmar Ice Jessica went onto win grand champion

Judge Ken Proctor, England, was impressed with the grand champion as soon as it walked into the ring for its six-year-old class and said was a "powerhouse out of a great cow family".

He highlighted the "million dollar" cow's width, capacity and veination of udder and was particularly impressed by the "snugness" of her fore udder and teat placement.

He said the capacity of April 2009 drop cow walked so smoothly "... as if she's on coasters".

"And look at that top-line, as I've said before today, that's the kind of



Holstein Australia president David Johnston and UK judge Ken Proctor present grand champion Holstein exhibit to the Hore family, Elmar Holsteins, Leitchville. They are pictured with (back) Steven and Deanne Hore, Mitch Flemming, Kelsie Hore, (front) Brady and Marty Hore.

top-line you could put a spirit level on," Mr Proctor said.

Her paddock mate Elmar Goldwyn Jessica 11-ET was reserve senior cow and won best udder of the breed.

Steven Hore said they would try to get Elmar Ice Jessica in-calf and show it at the Winter Holstein Fair and IDW 2016.

He said the family, including wife Deanne, sons Brady and Marty and daughter Kelsie, would sit down and discuss the breed-topping cow's future.

"We might flush her for some embryos because a lot of farmers here (in Australia) and in the US and Canada want to buy her embryos," he said. "We try to breed good cow families with corrective mating and giving the animals an opportunity to grow out and be shown."

"But we are dairyfarmers first, so those cows will be treated as the others are ... well they might get a bit of special treatment."

Of the six cows and three heifers the Hore family took to IDW, the milkers took four firsts of class, four best udders of class; and they also won the two breeders' group classes.

Bluechip Genetics, Zeerust, Vic, dominated in the preliminary Holstein classes taking the Intermediate and Junior Champion Awards.

The Intermediate Champion three-year-old Paringa Windstorm Ezra also won the Intermediate Champion Award at the inaugural Victorian Winter Fair at Bendigo last year.

Bluechip Genetics principal Dean Malcolm bought the cow with his fa-

ther Phil Malcolm at Shepparton, Vic, in 2013 for \$17,000.

"We paid a bit for her but it's cheap buying now," Dean Malcom said.

The cow was dried off immediately after the Winter Fair and was fresh for IDW, just two-and-a-half weeks in milk.

Judge Ken Proctor said the cow was "very solid". It deserved to be champion for its dairyness, particularly the width and height of the udder.

The Reserve Intermediate Champion was Avonlea Winbrook Lulu 2 IMP-ET, exhibited by Elmar Holsteins and R Blackburn, Leitchville, Vic.

Mr Proctor said she impressed with an udder that was going to last. "She has a top-line you could lay a spirit level on," he said.

The Junior Champion was Bluechip Goldchip Bonnie.

The almost two-year-old heifer, owned in partnership with Fairvale Holsteins, pipped the heifer that sold for the top-price at the IDW World Wide Sires Evolution Sale.

Mr Proctor said the winning heifer had great balance; it was immature but would grow out well. "She's smart, young and will keep that way," he said.

The heifer was the youngest in its class and when judging the class Mr Proctor said it was unusual to put the youngest animal first.

"But when the youngset animal is the best you must," he said. "Her style and body balance is terrific."

The Reserve Junior Champion was Avonlea YF Windbrook Cinnamon, which was bought for \$27,000 at the sale by LGL & KN Marshall.



- ✱ **Judge:** Ken Proctor - England
- ✱ **Grand Champion:** Elmar Ice Jessica, Elmar Holsteins, Leitchville, Vic.
- ✱ **Champion Cow:** Elmar Ice Jessica.
- ✱ **Reserve:** Elmar Goldwyn Jessica 11-ET, Elmar Holsteins.
- ✱ **Intermediate Champion:** Paringa Windstorm Ezra, Bluechip Genetics & P Malcolm, Zeerust, Vic.
- ✱ **Reserve:** Avonlea Winbrook Lulu 2 IMP-ET, Elmar Holsteins & R Blackburn.
- ✱ **Junior Champion:** Bluechip Goldchip Bonnie, Bluechip Genetics & Fairvale Holsteins, Zeerust, Vic. **Reserve:** Avonlea YFWindbrook Cinnamon-ET, Cinnamon Partners, Main Beach, Qld.
- ✱ **Exhibitor Encouragement Award:** Justin Johnson, Glomar Holsteins, Bandalaguah, Vic.
- ✱ **Premier Sire:** Attwood, World Wide Sires
- ✱ **Premier Breeder:** Bluechip Genetics.
- ✱ **Premier Exhibitor:** Bluechip Genetics.

Third time lucky for Didjago

- Judge:** Duncan Hunter - England
- Grand Champion:** Encore Pardner Didjago, G Bawden & R Burgmann, Warragul, Vic.
- Champion Cow:** Encore Pardner Didjago. **Reserve:** Boldview Far Knightstar, Boldview Farms, Jervois, SA.
- Intermediate Champion:** Paschendaale P.R.Blossom-ET Eagles Partnership, Gooloogong, NSW. **Reserve:** Roland Lodge Poker Corn, Canobie Partnership, Drouin West, Vic.
- Junior Champion:** Hurlstone Mabel Twilight, Hurlstone Ag High School, Glenfield, NSW. **Reserve:** Katandra Farms Burdette Two-Didj, G Bawden & R Burgmann.
- Exhibitor Encouragement Award:** James Dillon, Waaia, Vic.
- Premier Sire:** Des Chamois Poker, Semex.
- Premier Breeder:** Scott Bramley, Boldview Farms.
- Premier Exhibitor:** Scott Bramley Boldview Farms.

Ayshires

By Laura Griffin

INTERNATIONAL judge Duncan Hunter of England was blown away by the feature Ayrshire show at International Dairy Week. "The quality of cattle was absolutely brilliant; I came here with no expectations and every single class was my extreme pleasure to judge," Mr Hunter said.

Mr Hunter awarded grand champion Ayrshire to Encore Pardner Didjago, exhibited by Glen Bawden and Rebecca Burgmann, Majestic Holsteins and Katandra Farms, Warragul, Vic.

It was Encore Pardner Didjago's third show and its best result yet. It won champion senior cow in 2013 and reserve champion cow last year.

He said the 2005-drop cow had a near perfect structure, even after having seven calves.

"The top two cows (reserve senior being Boldview Far Knightstar, exhibited by Boldview Farms, Jervois, South Australia) were some of the best senior cows I've had the privilege of judging," he said.

Ms Burgmann's father, Lloyd, bought her dam in the 1990s, who at 20 years old is still in Glen and Rebecca's herd.

It will be the final show for the



Warragul's Glen Bawden, with his daughters Lily, 7, and Scarlett, 4, leads grand and champion Ayrshire cow Encore Pardner Didjago

9.5-year-old champion cow. "She's only given us bull calves so we might flush her and see if we can get some heifers on the ground," Mr Bawden said.

"It's great that three judges have said she is worthy of being in a champion line-up."

The feature show's intermediate champion was Paschendaale PR Blossom-ET, Eagles Partnership, Gooloogong, NSW. Judge Mr Hunter said she was very handy and had fantastic length and "dairyness right through".

The junior champion heifer Hurlstone Mabel Twilight was one of only two Hurlstone Ag High School, Glenfield, NSW, brought to IDW. It was only

the second year the school has had a team at the event and last year it had a heifer that received an honourable mention.

Teacher Sandra Hackett said this year's was a terrific result for a heifer bred at the school.

"We milk 50 cows a day so we don't have the same depth in our herd as a lot of the other competitors who are milking hundreds," Ms Hackett said.

Former student Emma Ludington, who was supporting the show team, said they knew they had a good heifer in Mabel Twilight, affectionately known as Whiskey, but it was a huge honour for the judge to agree in singling her out in the junior classes. D



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Win best feeling in the world

By Carlene Dowie, Laura Griffin and Alastair Dowie

A YOUNG dairyfarmer, who has been attending International Dairy Week since he was two weeks old, was thrilled when the cow he prepared was named the grand champion Jersey at the event. "This is the best feeling in the world," Gavin Broad said.

The three-year-old cow, Broadlin Illusion, was bred by Lisa and Lynton Broad, on their farm at Lockington, Victoria. The Broads, who were all in tears after the win was announced, have been attending International Dairy Week since the Jersey event was introduced and the win was their first IDW broadribbon.

Lynton Broad said the win was "mind boggling".

He said he had not expected to win the grand champion after winning the intermediate champion award. "She's only three years old — it's unbelievable," he said.

He paid tribute to his son Gavin



The grand champion Jersey cow Broadlin Illusion with chairman of Norco Greg McNamara, Jersey Australia president Peter Ness, handler Ross Easterbrook, owners (at rear) Lynton, Lisa, Gavin and (at front) Toni and Cassie Broad.

who he said had prepared their team of seven for the event. "He's extremely keen and loves doing it," he said.

Gavin said he had dedicated the whole month before IDW in getting the

cows set for the event. "There's nothing like that (winning)," he said.

The judge Hank Van Exel, United States, said the cow had great character. It was dairy, long and strong with a beautiful mammary system, feet and legs, he said.

The senior champion cow was shown by Matt Templeton, of Mooroopna, Vic, who was judging an on-farm Jersey challenge when he saw

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- ✿ **Judge:** Hank Van Exel - United States of America
- ✿ **Grand Champion:** Broadlin Illusion 2817, L & L Broad, Lockington, Vic.
- ✿ **Champion Cow:** Yandavale Sambo Darcy, S&H Menzies, N Paulger & M Templeton, Nowra, NSW. **Reserve:** Brunchilli Sambo Priscilla, Brunchilli Farming Trust, Finley, NSW.
- ✿ **Intermediate Champion:** Broadlin Illusion 2817. **Reserve:** Rivendell Brunchilli Jadestorm Olivia, Rivendell Jerseys, Nowra, NSW.
- ✿ **Junior Champion:** Quamby Brook Verbatim Genie-IMP-ET LR, SJ & CR Thompson, Bracknell, Tas. **Reserve:** Rivendell Glory Annabell, Rivendell Jerseys, Nowra, NSW.
- ✿ **Exhibitor Encouragement Award:** Darrynvale - Elle Hourigan, Wangaratta, Vic.
- ✿ **Premier Sire Award:** Tower Vue Prime Tequila, Agri-gene.
- ✿ **Premier Breeder:** Brunchilli Farming Trust, Finley, NSW.
- ✿ **Premier Exhibitor:** Brunchilli Farming Trust, Finley, NSW.

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Gavin Broad with the champion intermediate cow Broadlin Illusion at International Dairy Week.



Junior champion Jersey heifer at IDWY 2015 with Dylan Jewell, ABS Warrnambool, Victoria and Jo Thompson, Bracken all, Tas leading her champion heifer.

◀Yandavale Sambo Darcy and he knew he had to have the cow.

Only six weeks after buying her from Darrin and Jeanette Grevett, Eerwah Vale, Queensland, the April 2008-drop cow won senior champion Jersey cow, making her owners Mr Templeton, Nicola Paulger and Hayley and Stewart Menzies, Rivendell Jerseys, of Nowra, NSW, ecstatic.

"I saw her in the paddock and right away I wanted to buy her. I loved the cow's overall balance and dairyness," Mr Templeton said.

"She's so youthful, you can see it in her udder; that's the kind of cow I like to have because they have longevity."

Once she calves again, the owning partnership might flush her.

Mr Van Exel agreed, saying she

was a stylish, well-balanced cow and a "tremendous individual". "You just can't fault that beautiful, mammary system," Mr Van Exel said

It was a successful day in the showing ring for the Menzies' Rivendell Jerseys, which also won reserve junior and reserve intermediate.


The long trip from Bracknell in Tasmania for the Thompson family was rewarded first thing in the Jersey ring when their heifer was crowned Junior Champion.

The heifer, shown by Lindsay Sandra Thompson and their son Cameron, Quamby Brook Verbatim Genie was imported as an embryo and sired by Verbatim Response, and came from the first class of the day. **D**




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Yandavale Sambo Darcy was sashed senior champion Jersey. She is pictured here with two of her co-owners Nicola Paulger (front) and Hayley Menzies.

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NEXT GENERATION
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Koala 7 a four-time winner

By Alastair Dowie

FOUR successive judges representing Scotland, the United States and two from Australia have failed to find a better Guernsey cow at International Dairy Week than Florando SD Koala 7.

The 10-year-old dam shown by the Joyce and Gass families, Golden Gate Guernseys, Tennyson, Victoria, was crowned champion Guernsey, grand champion Guernsey exhibit and best udder Guernsey at the 2015 IDW, its fourth consecutive win at the event.

This year's judge, Allan Clark, was the latest to acknowledge Koala 7's dominance of the breed at IDW. He said he really admired the cow; the quality of Koala 7 and the entrants at this show was the reason "why I love judging dairy cows".

Steve Joyce, who has led the cow through its reign at IDW, was thrilled with the cow's continued success.

When asked how he got the cow up for each year, he said "she's just a freak".

While Koala 7 dominated the broad ribbons, an even more impressive run was continued by breed legends LF and JM Cleggett's Brookleigh Guernsey stud, Glencoe, South Australia, in the award for premier breeder and premier exhibitor.

Reserve champion Guernsey was Glenally Spc Clara shown by G and S Tivendale, Murchison, Vic.

The Tivendales had a successful show earlier exhibiting the junior champion heifer Glenally Esp Karina and their heifer Glenally Mrls Hetty received an honourable mention in the heifer section.

Reserve junior champion was Kookaburra Kringle Stormy, which had made the trip from Morpeth in the NSW Hunter Valley, shown by DJ and JJ Clarke and family and WW Gibson.

Mr Clark said he loved the young heifers in the show and singled out Esp Karina for special mention with its "tremendous dairyness".

In the judging for Intermediate Champion it was an entry from the



Andrew Hunt, Bullvine, Toronto, Canada, sashing the Grand Champion Guernsey exhibit at International Dairy Week, Florando SD Koala 7 held by part owner Gary Joyce.

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Brookleigh stud, Brookleigh Geo Breaktime that was victorious ahead of the Tivendale family's Glenally stud, Glenally Mrls Della.

Brookleigh followed up with an honourable mention for its entry, Brookleigh Glistening. D

- ✱ **Judge:** Allan Clark - Australia
- ✱ **Grand Champion:** Florando Sd Koala 7, Golden Gate Guernseys, Tennyson, Vic.
- ✱ **Champion Cow:** Florando Sd Koala 7. **Reserve:** Glenally Spc Clara, G & S Tivendale, Murchison, Vic.
- ✱ **Intermediate Champion:** Brookleigh Geo Breaktime, LF & JM Cleggett, Glencoe, SA. **Reserve:** Glenally Mrls Della, G & S Tivendale.
- ✱ **Junior Champion:** Glenally Esp Karina, G & S Tivendale. **Reserve:** Kookaburra Kringle Stormy, DJ & JJ Clarke & Family & WW Gibson, Morpeth, NSW.
- ✱ **Exhibitor Encouragement Award:** James Peck, J Peck, Murchison, Vic.
- ✱ **Premier Sire:** Golden J Les George, Agri-Gene.
- ✱ **Premier Breeder:** LF & JM Cleggett, Glencoe, SA.
- ✱ **Premier Exhibitor:** LF & JM Cleggett.

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Ben Govett (in white leading with supreme champion Brown Swiss exhibit Tandara Jolt Sarajevo 55), said the stud's successful show was only possible thanks to the hard work of friends and family including (front from left) Matt Dennis, Sarah Chant, Pam Guy, Jayden Drake, Demi Rodgers, Elise Krause, Michaela Shrimpton, (back) Bill and Judy Govett and Sandy Cole.



Judge Rebekah Mast, US, presents the junior champion Brown Swiss heifer to Ashridge Rufus Tessa led by Ashleigh Noonan, Invergordon, Vic.

Local Brown Swiss world class

By Laura Griffin

IN HER first trip down under, international judge Rebekah Mast, US, was really impressed by the Brown Swiss shown, saying the class winners would all hold their own

against cattle in the United States and Switzerland.

"I wasn't surprised because there are great breeders of Brown Swiss cattle in Australia, but it was impressive how they came out — there wasn't any animal out there today

that didn't deserve to be," Ms Mast said. "Throughout the cow classes in particular, they all had beautiful udders."

And it was the Govett family's Tandara Brown Swiss cattle that impressed her the most — they won best udder (with Tandara Etvei Heidi 217, which was also reserve senior champion), reserve junior champion (with Tandara Jublend Wabash 22, owned with Jayden Drake, Dingee), reserve intermediate champion (with Tandara

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- ✿ **Judge:** Ms Rebekah Mast - United States of America
- ✿ **Grand Champion:** Tandara Jolt Sarajevo 55, Tandara Brown Swiss, Dingee, Vic.
- ✿ **Champion Cow:** Tandara Jolt Sarajevo 55. **Reserve:** Tandara Etvei Heidi 217, Tandara Brown Swiss.
- ✿ **Intermediate Champion:** Chapple Valley Edison Sherry, Jonathon Jennings, Chapple Vale, Vic. **Reserve:** Tandara Zaster Lola 39, Tandara Brown Swiss.
- ✿ **Junior Champion:** Ashridge Rufus Tessa, J & A Noonan, Invergordon, Vic. **Reserve:** Tandara Jublend Wabash 22, Tandara & Jayden Drake, Dingee, Vic.
- ✿ **Exhibitor Encouragement Award:** Kenny Osbourne, MR & KJ Osbourne, Jamberoo, NSW.
- ✿ **Premier Sire Award:** Superbrown Edison, CRV.
- ✿ **Premier Breeder:** Tandara Brown Swiss.
- ✿ **Premier Exhibitor:** Tandara Brown Swiss.

Brown Swiss

Zaster Lola 39) and senior and grand champion (with Tandara Jolt Sarajevo 55).

In fact, when Ms Mast pulled three cattle out to award the broad ribbons for the senior champion, all were from the Govett family's stables.

'In judging the grand exhibit, Ms Mast said October 2006-drop Tandara Jolt Sarajevo 55 had a great combination of strength, width and dairyness. Despite her age, she is still so well put together and stands and walks so well.'

In judging the grand exhibit, Ms Mast said October 2006-drop Tandara Jolt Sarajevo 55 had a great combination of strength, width and dairyness.

"Despite her age, she is still so well put together and stands and walks so well," she said.




Ben Govett with Tandara Etvei Heidi 217 that was judged to have the best udder and was reserve champion Brown Swiss cow.

Ms Mast said Sarajevo's depth of rib put her over the other competitors.

It would come as no surprise that Tandara Brown Swiss went on to be named premier breeder and exhibitor. Ben Govett was ecstatic with the results, and put it down to a lot of hard work across the months of preparation by family and a wide group of helpers.

The family has been breeding

Brown Swiss for more than 30 years, and Mr Govett said the animals they exhibited today were a result of 20 years of their own breeding.

Other broad ribbons were awarded to junior champion Heifer Ashridge Rufus Tessa, exhibited by J & A Noonan, Invergordon, Vic, and intermediate champion to Chapple Valley Edison Sherry, exhibited by Jonathon Jennings, Chapple Vale, Vic. 

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Northern Vic youth takes show award

YOUNG northern Victorian cattle handler Erika Quinn took out the coveted International Dairy Week grand champion heifer with an outstanding Holstein female. Ms Quinn, of Cohuna, Victoria, emerged from 230 entries in the ABS Australia/Ridley All Breeds National Youth Show to win the title.

Judge, Matt Templeton, Coomboona Holsteins, Toolamba, Victoria, described the Lirr Drew Dempsey daughter, Beclah Park Dempsey Nola, as exhibiting dairy strength, frame and carrying a beautiful udder. The July-drop 2012 heifer was out of High Green Bolton Noni and owned by Gorbros Holsteins, Cohuna.

Mr Templeton awarded the heifer senior champion in-milk before giving her the nod as grand champion.

Georgia Sieben, 12, of Torumbarry, Vic, showed the Toc-Farm Goldsun sired in-milk Holstein heifer Brindabella Gold Sun B Jess to senior champion in-milk heifer (junior leader and reserve grand champion heifer on behalf of owners, S & J Sieben, Torumbarry, Vic.

Zoe Hayes, Girgarre, Vic, was named as the most successful youth handler of the show. She showed Llandovery Blush's Jinny to junior champion heifer (senior leader) while the reserve went to Shanae Fisher, Shepparton, Vic, with Red Field Doorman Bambi 3186-ET.

Erika Quinn has a strong record at IDW, winning the junior champion heifer (senior leader) last year with Gorbros Stanley Cup Kassie-ET, but this



Judge Matt Templeton with handler Erika Quinn, Cohuna, and the grand champion heifer, Beclah Park Dempsey Nola, at IDW.

year was her first on the halter of a grand champion.

The Year 12 student at Cohuna Secondary College worked for four weeks preparing the heifer at Gorbros Holsteins for this year's event.

Miss Quinn's family farm is expanding from 500 to 600 cows with the installation of a new dairy, and she plans to forge a career in the industry.

"I didn't know what to expect today and was overwhelmed to win," she said.

ABS Australia and New Zealand general manager James Smallwood said the company had been committed to supporting the youth show since the late 1990s.

"For us at ABS, the youth show is a nice fit for what we do, and it's one way we can give back to the industry which supports us," he said. **D**



Marcus Rees, ABS Australia, congratulates Brock Neal, Coorimung, Vic, for exhibiting the honourable mention grand champion heifer.

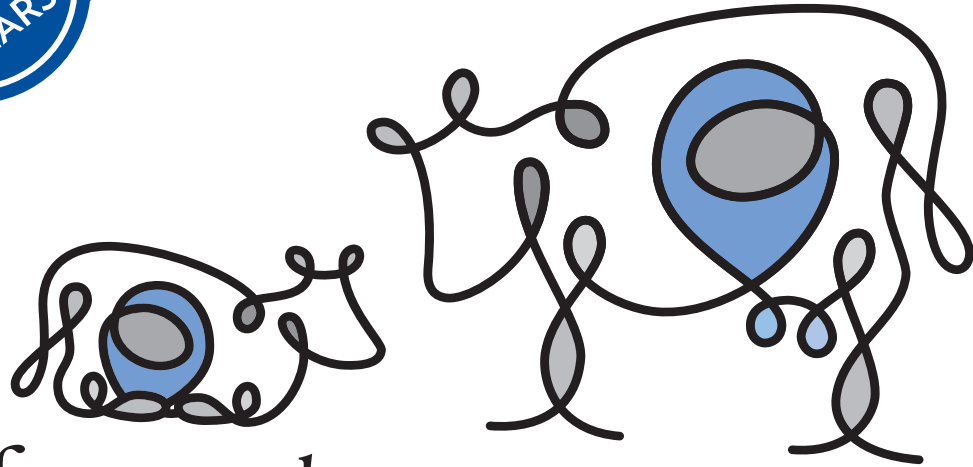
Youth Show	✱ Judge All Breeds National Youth Show: Matt Templeton - Australia	2, Brock Neal, Bushlea Farms, Koonwarra, Vic.
	✱ Judge Youth Showmanship Classes: Glen Gordon - Australia	✱ Senior Champion in Milk Heifer - Junior Leader: Brindabella Gold Sun B Jess, Georgia Sieben, S & J Sieben, Torumbarry, Vic. Reserve: Miami Tequila Cowslip 4660-ET, Brady Hore, Philmar Dairy Company, Tocomwal, NSW.
	✱ Junior Champion Heifer - Senior Leader: Llandovery Blush's Jinny, Zoe Hayes, Hayes Family, Girgarre, Vic. Reserve: Red Field Doorman Bambi 3186-ET, Shanae Fisher, K Smolenaars, Sale, Vic.	✱ Grand Champion Heifer: Beclah Park Dempsey Nola, Erica Quinn. Reserve: Brindabella Gold Sun B Jess, Georgia Sieben.
	✱ Junior Champion Heifer - Junior Leader: Avonlea Windbrook Cinnamon Mitchell Atkins, JH & CJ Gardiner, Cardinia, Vic. Reserve: Whyndell H.G. Bonny, Jett Easterbrook, J Easterbrook, Tatura, Vic.	✱ Most Successful Youth Handler Award: Zoe Hayes.
	✱ Senior Champion in Milk Heifer - Senior Leader: Beclah Park Dempsey Nola, Erika Quinn, Gordon Brothers, Cohuna, Vic. Reserve: Bushlea Gov Favorite	✱ Senior Champion Handler Leader Aged 18-20: Deandra Tanner.
		✱ Intermediate Champion Handler Leader Aged 14-17: Katie Anderson.
		✱ Junior Champion Handler Leader Aged 8-13: Jessica Eagles.



Junior paraders Anna Dickson, Terang, and Jake Rundle, Ecklin South, with Jersey heifer Boggabilla HG Bell.

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Record Holstein heifer sale tops at IDW

By Laura Griffin

THE three sales during held during International Dairy Week (IDW) had strong results thanks to a combination of confidence and the “top notch” breeding on offer, IDW director and auctioneer Brian Leslie said.

The feature breed Ayrshires and Jerseys both achieved the event highest sale average and the Holstein sale achieved the second highest in IDW’s history.

The biggest sale of the event was the World Wide Sires Evolution sale, which saw 38 lots go under the hammer. The sale topped at \$27,000 for lot seven, Avonlea YF Windbrook Cinnamon, offered by J & C Gardiner, of Cardinia, Vic, and achieved an average of \$8668.

LGJ&KN Marshall, Main Beach, Queensland, fended off spirited bidding to secure the top-price February 2014-drop heifer as part of a syndicate, and it was its only purchase of the sale.

Windbrook Cinnamon’s maternal line has enjoyed show success: its dam Lindsand VF Aspen Cinnamon-ET, VG89, won champion dam at last year’s Royal Melbourne Show, and its second dam was 2009 IDW champion.

It is by excellent 97 sire, Gillette Windbrook-ET-BLF-CVF-BYF CANM7816429.

Only one other Holstein broke the \$20,000 barrier, with lot 11, Wellerleigh Atwood Ambrosia (imp ET, US) fetching \$22,000. Mr Leslie drew attention to its dam EK-Oseeana Ambrosia-ET EX95-2E, which had nine excellent and 20 very good daughters at the time the catalogue was printed.

It was knocked down to the Hill family of Cudgewa, Vic, who also bought lot 4 Lightning Ridge Halogen Brini for \$10,000.

Correction

ASTORY titled ‘Scrutiny Helps Gene Development’ in the January-February 2015 edition of the *Australian Dairyfarmer* made reference to the winning Jersey cow at the 1998 Royal Melbourne Show being shown by the Burgmann family. The Champion Jersey Cow at the 1998 show was in fact Boggabilla Bell, shown by RJ Rundle & Sons.



Top-priced Jersey at IDW 2015 sale with vendors Patrick Nicholson, Girgarre, Victoria, and Brian Leslie, DLS, buyer Frank Walsh, Tongala, Vic, who paid \$15,100, and handler Tahnee King.

They were among seven buyers who bought more than one animal, with the Robins family, of Cohuna, Vic, buying four to \$7100 twice, av \$5550. Buyers came from across Victoria and into NSW, Queensland, Tasmania and even New Zealand.

At the Jersey showcase sale, frenzied bidding pushed Jugiong Daydream 6552 to sell for the top price of \$15,100.

“By golly, she looks beautiful today. She’s of a family of 10 generations that were excellent and very good,” Mr Leslie said in calling the auction.

The April 2012-drop cow was knocked down to Frank Walsh, of Tongala.

It fetched more than double than the second top-price cow of the sale — Araluen Park Thone Sandra 5 that was sold to GC&RG Sprunt, Kaarimba, Vic, for \$7100.

The 14 Jerseys averaged \$5386, with 14 different buyers from across the eastern states buying one lot each.

Ayrshires not only enjoyed being feature breed of the show, but also achieved a high average of \$3528.

Breeders from across Victoria, interstate and even overseas (New Zealand) provided spirited competition for the 16 female animals (heifers and cows). The international judge Duncan Hunter, England, demonstrated his high opin-

ion of the Australian Ayrshires shown by securing the only embryo package offered — paying \$700 each for four embryos by sire De La Plaine Prime and dam Boldview Parndara.

The sale topped at \$9000 for Lot 2, Paschendale Cinder Blossom-ET that was knocked down to T Saunders and A Day, Shady Creek, Vic. D



Top-priced Holstein heifer at the World Wide Sires Evolution sale at IDW 2015, with Tim Weller, Berrigan, NSW, and Mark Patullo, Numurkah, Victoria, auctioneer Brian Leslie, DLS, and handler Zoe Hayes, Stanhope, Vic. It sold for \$27,000 at the sale.

- March 11-12:** **Herd '15 Conference**
Bendigo, Vic
Contact: Focus on reproduction and fertility data in the dairy industry.
Website <www.nhia.org.au>
- March 18:** **DairySA Central Dairy Conference 2015**
Hahndorf, SA
Contact: Penny Schulz, mobile 0417 853 094, email <penny@dairysa.com.au>
Topics include profitable dairying, succession planning, milk quality, automation, use of remote devices
- March 26:** **Tasmanian Dairy Conference and awards dinner**
Burnie, Tas:
Contact: Range of speakers from NZ and Australia
Dairy Tas, phone(03) 6432 2233, email <m.smith@dairytas.net.au>
- March 26-29:** **Farm World Field Days**
Warragul, Vic
Contact: Australia's premier mixed farming field days
Phone (03) 5626 1373, email <office@lardnerpark.com.au>
- March 26-April 8:** **Sydney Royal Easter Show**
Homebush, NSW
Contact: Main dairy show event in NSW
Phone (02) 9704 1111, fax (02) 9704 1122, email <enquiries@rasnsw.com.au>, website <www.eastershow.com.au>
- April 29:** **United Dairyfarmers of Victoria Conference 2015**
Melbourne
Contact: Conference for Victorian dairy industry
Phone 1300 882 833, website <www.vff.org.au>
- July 22-23:** **Grassland Society of Southern Australia Annual Conference**
Naracoorte, SA
Contact: Theme of "learn, adopt and prosper"
Phone 1300 137 550, email <office@grasslands.org.au>, website <www.grasslands.org.au>
- September 20-24:** **International Dairy Federation World Dairy Summit**
Vilnius, Lithuania
Contact: One of the premier events on the international dairy calendar.
Website <http://www.idfwds2015.com>
- November 16-18:** **TropAg2015**
Brisbane
Contact: Tropical agriculture, research, productivity, sustainability
phone (07) 3255 1002, website <http://tropagconference.com.au/>
- Diary dates** To have dates for a major event included in the diary, send information to Carlene and Alastair Dowie.
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Getting on top of calf pneumonia

Key points

- ✓ Calf Pneumonia — the second biggest killer of dairy calves
- ✓ Look out for early signs
- ✓ Good calf housing key to prevention



By Sherri Jaques*

Poorly treated calf pneumonia, especially if not dealt with early, can have an obvious economic and labour cost but can also affect future reproductive performance, heifer replacement numbers, milk production and survival within the herd.

It is the second leading cause of death for calves, particularly in the pre and post weaning age ranges (with calf scours being the other notable cause).

It is also thought by some to be the cause of general herd respiratory disease in the milking herd.

This summer we have seen several 'sudden deaths' in calves between the ages of three and six months, which have been presented for post mortem. In all cases the post mortem showed extensive damage to the lung tissue, chest cavity and in some cases the 'bag' the heart sits in (the pericardium). The massive changes seen and the extent of inflammatory response present, indicates that despite a lack of signs, these calves were much sicker than the owner first thought.

Firstly — what is pneumonia? Pneumonia is inflammation caused by fungal, viral, mycoplasmal or bacterial infection. The air sacs in the lung fill up with pus and become solid. Bacteria and Mycoplasma are the most common bugs involved in calf pneumonia.

If the inflammation, the body's response to the damage and infection, affects the chest outside the lungs it is pleuritis as well.

Sometimes both occur together — a pleuro-pneumonia. The inflammatory response of pleuritis often 'glues' the pieces of lung to the chest wall. If the pneumonia is not treated effectively and early, then abscesses and scar tissue can form in the lung.

This results in lung tissue that is not

pink, soft and elastic but meaty firm lumpy and not easily stretched. It is then harder for the lungs to stretch open to let air in and shrink back down to let air back out. Abscesses can burst later resulting in a recurrence of the pneumonia. Once abscess formation had started, it is difficult to achieve a full recovery.

Secondly — what are the signs of pneumonia in calves?

Signs can include: discharge from the eyes, discharge from the nose, rapid breathing, varying levels of coughing, eating or drinking a bit slower than normal, standing about for longer, high temperatures, droopy ears and ear infections, head tilted to one side (due to ear infections), recurrent or increased cases of bloat.

The last two are my 'clues' that there may be untreated respiratory disease in the shed. Young calves with early or mild pneumonia may show multiple signs or only one.

'Colostrum, good colostrum, given in the first 12 hours of life is a pivotal part of prevention.'

Generally they will still drink — but often a bit more slowly. They will not be depressed and their cough will be occasional or not noted at all. They may have slightly droopy ears or a head tilt, slight cloudiness to the nasal discharge, or just a tiny bit of discharge from the inner corner of the eye.

Goals for calf pneumonia are: prevention, monitoring and detection, correct treatment and good housing.

Prevention, you already know all of this. Colostrum, good colostrum, given in the first 12 hours of life is a pivotal part of prevention. As is general good hygiene and biosecurity, quarantine or 'sick pen' arrangements. Limiting the number of people entering the 'sick shed' and dealing with the sick groups last. Where are calves coming from — how much information is provided about their start in life?

Treatment will depend on which 'bug' is causing the problem. The two bugs found most commonly in early calf pneumonia are: *Pasturella Multicola* and *Arcanobacterium*.



Good housing is important to help prevent and treat pneumonia in calves.

As the disease progresses these two are still present but other bugs can be grown as well: *Mannheimia haemolytica*, *Pseudomonas* and *Mycoplasmas*.

The presence of *Mycoplasmas* in particular will alter which antibiotics the vet recommends. The good news is that there is rarely resistance issues to the two early bugs — it is later in the disease when the others become involved that resistance becomes an issue.

To check which bugs are present the vet may want to take a nasal swab from up to six untreated calves. Early cases showing very few signs may only grow the bacteria in 25% of cases, this rises to 66% of cases in 'sicker' calves. Pain relief and anti-inflammatories should also be considered with the vet to limit the formation of pleuritis and control pain.

Good housing is important. Calves should have adequate ventilation but no draughts, and avoid overcrowding. Cold damp sheds are the biggest issue but humid weather or shed air can be issues as well.

High humidity is often a sign of poor ventilation resulting in condensation, which increases the shed humidity.

Monitoring and detection — recently I have streamlined my approach to pneumonia in calves with a Calf Pneumonia Score Sheet that is easy for vets and producers to use. I will discuss this in the next issue. Until next time, happy milking. **D**

*Sherri Jaques is a practising veterinarian and reproduction adviser in the West Gippsland region of Victoria.

All comments and information discussed in this article are intended to be of a general nature only and may not be suitable for individual herds. Consult a veterinarian for herd health advice, protocols and/or treatments that are tailored to a herd's particular needs.

Successful staff selection



By Kerry Ryan*

- Key points**
- ✓ Define role and attributes wanted
 - ✓ Create appealing advertisements
 - ✓ Interview needs to be about 'experiencing' applicants

RECENTLY I've been involved in a number of projects supporting staff selection — some prompted by client frustration at modest response to promotion of roles.

The process is a challenging one for those in the staff market so here are some reminders about what's needed to attract the best and reliably evaluate their capabilities, attitudes and personalities.

Regardless of the role, jobs need to be advertised effectively and applications processed in a time and cost-efficient way. The interview process must deliver a robust investigation so the appointee matches the demands of the role and the dynamics of the existing team.

The starting point is to define the role and the attributes required. This ensures selections are made against predetermined criteria and reduces the risk of standards being compromised when there is a shortage of candidates.

This search for the ideal person needs to be balanced against the reality that it is unlikely there will be one perfect applicant. Astute selection includes the ability to see potential in people who demonstrate the integrity, disposition and transferable skills to grow through training and professional development.

The next step is to convert this to an advertisement that communicates opportunity and motivates readers to action. This should highlight key selling points such as career pathways, a positive team environment or benefits such as location, work/life balance and reward packages.

Writing advertisements is still an area where many struggle. A quick review of roles being advertised online in New Zealand at present confirms most ads are relatively introverted.

Many focus heavily on the employer's wish list and fail to promote the benefits offered. To be effective, advertisements must be written with the reader in mind.

I've helped to write ads for roles across the dairy world. Regardless of an operation's location or requirements, it's always possible to find a selling point. It's simply a matter of assessing what top people will be seeking.

The trend for online advertising has been a real positive. It's time and cost effective and can result in applications being received within hours of placement.

Screening and short listing candidates is the next vital ingredient. Quality time needs to be allowed to get an insight into each applicant. Ideally this should be done with access to the applicant's CV. Inviting electronic expressions of interest achieves this and has the added benefit of confirming people's computer and communication skills.

'To be effective, advertisements must be written with the reader in mind.'

Screening should also include a brief discussion of reward expectations. Getting comment on this from all applicants provides a valuable read on market expectations for subsequent salary setting.

Interviews need to be as much about "experiencing" as "interrogating" applicants. They should be interactive so candidates demonstrate their capabilities, attitudes and aspirations rather than just tell you about them. Personality profiles are also valuable to confirm likely work styles and behaviour patterns to ensure any appointment will complement the current team.

Reference checking both before and after interview helps get the short list right and saves wasted time for all. I recommend validating the credibility of referees before listening to their views. Questions need to be planned, searching and effective. They should always include an opportunity for the referee to volunteer comment on an



Getting the right person for the job starts with the selection process.

applicant's professional or personal attributes that may not have already identified as strengths or weaknesses in the interview process.

Finally, it's important not to compromise standards and delay making an appointment and re-advertise when the candidates don't meet expectations. If necessary make a temporary appointment to cover the short term and create time to review and repackage the position to get the right applicant. Sometimes it's just a matter of patience.

Experience has taught me that success with managing people is 80% driven by successful selection. It can be time consuming and frustrating. However, it is well worth the effort to future proof the business and develop opportunity for everyone to move up a level — including the employers. **D**

**Kerry Ryan is a New Zealand based agribusiness consultant available for face-to-face or online for advice and ideas. He can be contacted at website <www.kerryryan.co.nz>.*

BPI hits mark at Carenda Holsteins

- Key points**
- ✓ Three new indexes to be available
 - ✓ Balanced Performance Index for profitable, easy care bulls
 - ✓ Better selection for genetic gains

WESTERN Australian dairy-farmer Ray Kitchen can't wait to see the rankings for bulls based on the Balanced Performance Index (BPI) when they are released in April.

Mr Kitchen dairies near Bunbury with his wife, Donna, and his brother Mal and Mal's wife, Lesley. Their 400-cow herd currently averages about 10,000 litres per cow a year and ranks number two in the country for profit. The Kitchens regularly sell bulls locally and to artificial breeding (AB) companies.

Their breeding priorities have been influenced by customer feedback as well as their own focus.

"We are looking for bulls that will produce daughters that are profitable and easy care," Mr Kitchen said. "We want to make as much genetic gain in production, health and those type traits that influence longevity in our environment."

"I'm really looking forward to using the Balanced Performance Index. It is primarily an economic index, designed to help us improve profit through production but it also allows for traits that affect functionality in the herd and longevity — for example cell count, fertility and udder conformation."

In the past Mr Kitchen used the Australian Profit Ranking (APR) but he is confident that the BPI will provide a better selection for genetic gain on functional traits.

"We have a high production herd so longevity and functional traits are very important," he said. "I am happy with the balance of these traits in the BPI. It's good to see that breeding indexes are progressing to meet farmers' evolving needs."

Mr Kitchen plans to start with the BPI list to choose about 12 sires to use over the herd for the year. He uses the *Good Bulls Guide* in both formats — the booklet that arrives in the mail and the electronic format that he downloads from the Australian Dairy



Ray Kitchen will use the Balanced Performance Index for selecting sires to use over his herd, which ranks number two in the country for profit.

Herd Improvement Scheme (ADHIS) website.

"I'll create a short list of bulls from the BPI list and then look more closely at their ABVs for specific traits such as fertility, udders and feet and legs."

"Even though most of these traits are in the BPI, I'll take a closer look at their ABVs. Bulls that are unfavourable for these traits will be knocked off my short list."

'We have a high production herd so longevity and functional traits are very important.'

"Our cows walk long distances in the winter to graze so they need sound feet and legs for a long, productive life in our herd. In the same way, fertility, mastitis resistance and udder functionality affect longevity in our herd."

When selecting sires, Mr Kitchen said he believed it was very important to look at their genomic and progeny proven breeding indexes based on

performance under Australian conditions.

"Our production system and our environment have a big impact on the performance of bulls' daughters," he said. "It's absolutely essential to breed cows better suited to our farming conditions and milk payment system and using Australian indexes is the best way to achieve that."

Mr Kitchen has welcomed the move to provide farmers with three indexes: BPI, the Health Weighted Index (HWI) and the Type Weighted Index (TWI).

"Having three indexes gives Australian dairyfarmers the ability to choose the index that best matches our individual breeding priorities," Mr Kitchen said. "For farmers keen to improve the functionality of their herds, the Health Weighted Index gives them the opportunity to make better gains in their priority traits with a small compromise in profit gains. Likewise the Type Weighted Index will suit farmers focused on conformation." **D**

Contact: ADHIS extension and education manager Michelle Axford, phone 0427 573 330, email <maxford@adhis.com.au> or website <www.adhis.com.au>.

DA funding for discussion groups

Factbox

REASONS to get involved with a discussion group or establish your own:

- Talk through business matters common to you and other farmers;
- Gain confidence in your decision making;
- Network with other farmers and service providers;
- Develop your skill and knowledge and learn from others.

DAIRY Australia's funding support for up to 90 discussion groups throughout Australia's dairy regions will continue for the next two years.

Established and new discussion groups are eligible for funding support from Dairy Australia, and farmers are encouraged to contact their Dairy Australia extension co-ordinators or their Regional Development Program (RDP) to discuss the funding process and assistance that is available to help run effective groups.

Since the funding was made available last year a number of groups have accessed support and 20 new groups have been formed.

Dairy Australia's program manager for on-farm adoption and evaluation, Neil Webster, said farmers around Australia were driving reinvigorated discussion groups.

"Discussion groups have been a part



"Things change in farming all the time so a discussion group is an excellent way to keep up with what's happening. As farmers we tend to get stuck in our own worlds at times so it's great to get out and see someone else's farm — even if it's just to get out for a bit and talk with a few other people." — Orbest farmer Tony Robinson

of the industry here and overseas for a long time and can be a very effective approach to extension when they have a clear purpose and are well-organised," he said. "We know that many farmers see value in discussing their business decisions with other farmers."

A key factor contributing to successful groups was that the group's direction was driven by the farmers involved.

"We are keen to connect with groups and help support them to be successful so that farmers can get even greater value from their involvement," he said.

Groups may use their funding for the engagement of a facilitator to support effective group operation or

to pay for a specialised speaker and expert advice delivered to the group. Targeted farm field days and farm walks and other activities agreed with the relevant RDP and DA will also be eligible for support.

Anyone who is interested in applying for funding for a discussion group should contact their RDP or Dairy Australia extension co-ordinator. A contact list is available on the back cover of this edition of the *Australian Dairyfarmer* magazine.

Farmers wishing to create or re-establish a discussion group in their area should also get in touch with their RDP and Dairy Australia extension co-ordinator who can provide support and advice to get started. **D**

Kit designed to help discussion groups

DAIRY Australia has created a new Dairy Farmer Discussion Group Resources Kit to help farmers and advisers establish and run successful discussion groups. The kit is a simple guide offering insight into what makes group-based extension effective and successful in driving change on farm.

Dairy Australia's program manager for extension and farm change, Neil Webster, said the kit would particularly benefit new regional groups that have accessed Dairy Australia funding support.

"The kit holds all the information and advice you need to get your group started and would be a good refresher for estab-

lished groups," he said.

The new resource includes detailed fact sheets on forming and co-ordinating a group, tips from an experienced facilitator and information about how to access Dairy Australia discussion group funding. Contact details for Regional Development Programs are also included.

To get a hold of a kit contact Dairy Australia's extension coordinators or the local RDP. Contact details can be found in the inside the back cover of this edition of the *Australian Dairyfarmer* magazine.

Alternatively visit website <www.dairyaustralia.com.au/discussiongroups> to download a digital version of the kit.



The Dairy Farmer Discussion Group Resources Kit is a good refresher for established dairy groups.

Key program kicks into farmer pockets

- Key points**
- ✓ Feeding Pastures for Profit program
 - ✓ Focus on grazing management
 - ✓ Residual grass key to regrowth

BUILDING a profitable dairy farming business involves the careful control of the basics, the major one being grazing management. If done well, this is a core basic that will produce significant benefits for the business at relatively low cost.

Data collected recently from farmers who had participated in a Feeding Pastures for Profit program showed that an individual dairy business can benefit by up to \$43,000 per year just by improving its grazing management practices. Some farmers save more and other less, but the guts of the program is that farms producing and utilising more home-grown feed can generally weather the price/cost squeeze more successfully.

'This stubble is the main energy source to allow the grass to regrow.'

Erwin Reesink, a share-farmer with 220-240 head of cows in Wattle Bank Gippsland, said doing the course was "...definitely worthwhile as I learnt a lot about rotating at the right rotation length and learnt I have to base my decisions on what the paddock needs to look like when the cows are leaving and entering.

"Feeding Pastures for Profit has helped me become more confident in my decision-making about pastures and I am pretty sure it will benefit my business."

Senior dairy extension officer for Victoria's Department of Economic Development, Jobs, Transport and Resources (DEDJTR) Frank Mickan has worked in the dairy industry since 1971 and in dairy extension with a special focus on soils, fertiliser and silage, since the 1990s. 'Mr Silage' as Frank is affectionately known, was awarded a Public Service Medal in this year's Australia Day honours.

One of the most important facts



Frank Mickan (at right) explains key pasture principles to Conor Cunningham and Aaron Potter during a Feeding Pastures for Profit course.

INSET: Erwin Reesink holding ryegrass leaf ready to graze.

farmers learn on the course is the amount of residual grass they need to leave behind after grazing.

"This stubble is the main energy source to allow the grass to regrow," Mr Mickan said.

"Grazing ryegrass down to 2-3 centimetres reduces this energy reserve and can result in slower recovery and smaller plants.

"Ensuring cows leave a residual of 4-6 centimetres will increase its chances of surviving over a 'normal' summer due to a stronger, deeper rooting system and energy reserves during its dormant period."

Feeding the cows extra supplementary feed in the paddock to be grazed, or more commonly, on a feedpad or in a sacrifice paddock, will usually ensure the animals won't graze below 4-6cm. That level of grass must be kept throughout the summer to ensure more plants survive through to autumn.

"I explain it to farmers this way: a tap in the belly is the equivalent (to grass) of 4-6cm grazing; a solid punch



is grazing down to 2-3cm, and a big kick in the stomach — putting you out on the floor — is what happens to grass if you graze down to 2-3cm several times, and even more so if back grazing occurs," Mr Mickan said.

Mr Mickan will be holding Feeding Pastures for Profit courses in Gippsland on April 9 and 16, and in South West Victoria and the Northern Irrigation Area in April on dates to be confirmed.

Contact: local Regional Development Programs or Dairy Australia extension coordinator for details (see phone numbers on the inside back cover).

Alternative perennial pastures trialled

- Key points**
- ✓ Filling the gaps in ryegrass production
 - ✓ Three-year DEPI project
 - ✓ Research under way at Ellinbank

By **Matt Deighton**
research agronomist
DEPI Ellinbank

A LOW-COST feedbase underpins the future viability of Victorian dairy farms. Perennial ryegrass is likely to remain the cornerstone of the industry's pasture-based systems.

However, the perennial ryegrass growth pattern means there are significant periods of the year when pasture supply does not match herd feed demand, particularly in dryland situations.

Other forage species or mixes may be able to produce feed in a different seasonal pattern or with improved persistence compared with a perennial ryegrass pasture.

New agronomy research is under way in Gippsland to examine the potential of alternative pastures to improve home-grown feed production with an emphasis on filling key feed gaps.

'The pastures being evaluated are modern cultivars of cocksfoot, tall fescue and prairie grass...'

The three-year Department of Environment and Primary Industries (DEPI) research project is funded by Dairy Australia and compares 12 different pastures for their potential to improve feed production relative to perennial ryegrass.

The research aims to find if the pattern and reliability of home-grown pasture supply, a key driver of farm profit, can be increased by the use of perennial swards that complement the existing ryegrass pasture base.

The strategic use of alternative perennial species could increase the availability of pasture, particularly during the summer and autumn. If successful these species could re-



Research underway at DEPI Ellinbank to measure yield and persistence of a range of pasture species under Gippsland conditions.

duce annual feed costs by reducing the amount of purchased or conserved feeds required to meet feed demands.

Plant breeding has brought significant improvements to alternative perennial grasses.

The pastures being evaluated are modern cultivars of cocksfoot, tall fescue and prairie grass, which have been sown as monocultures or as mixed swards with white clover and perennial chicory.

These species have been selected for their growth pattern and potential persistence on non-irrigated farms.

Each species has characteristics that have potential to outperform perennial ryegrass in situations where it's seasonal yield or persistence is limited due to factors such as soil type, topography or insect pressure.

There are 84 experimental mini-

paddocks established at Ellinbank. Farmers and advisers in the region are encouraged to visit and "look over the DEPI fence" to see these pastures for themselves and consider if the alternative species or mixed pastures could benefit their farm.

The new project offers a rare opportunity to compare different pastures grown side by side for a number of years. In the first experiment sown in spring 2013 adjacent to Hazeldean Road, 12 different pastures were established in mini-paddocks. Each mini-paddock is rotationally grazed to ensure the pastures are exposed to grazing pressure and measurements of herbage yield and quality are being made at every grazing.

Results from the experiments first summer and autumn since establishment will be available in coming months.



Repro focus delivering results

Key points

- ✓ Increased milking numbers
- ✓ In-calf rate increase
- ✓ Induction no longer used

A STRONG focus on all aspects of reproduction management backed up by critical data analysis has seen Victorian dairyfarmers Sam and Christine McCluggage's dairy business go from strength to strength during the past 16 years.

The couple from Naringal south-west Victoria run a 650-cow dairy dryland farm off a 300-hectare effective milking area supported by two out-blocks totalling 308ha. The out-paddocks run heifers, bulls and calves and produce hay and silage.

The McCluggages have increased milking numbers from 200 in 1998 when they bought the property by focusing on rearing as many heifers as possible as well as they can to grow the herd. They now also sell heifers to export markets.

"Reproduction for us is a big part of our management focus so we get as many cows calved as quickly as we can at the start of autumn," Mr McCluggage said.

"We do put a lot of effort into that side of our business."

The predominantly Holstein-Friesian herd averages 7700 litres and 560 kilograms milk solids, from an estimated two tonnes per cow concentrate feeding.

The herd calves for 18 weeks from March 20 to July 30. During the next few years the plan is to bring the calving period back to 12-13 weeks.

Features of the reproductive performance of this farm includes:

- Improvements in the six week in-calf rate while tightening up the calving period;
- Emphasis on herd health and meticulous record keeping, and
- Excellent heifer rearing practices.

Mr McCluggage concentrates his efforts on getting his cows in calf as soon as possible after the mating start date. Getting cows back in calf is a combination of a number of aspects of herd management.

These include strict attention to cow health, routine endometritis



Sam McCluggage has been able to increase the size of his herd by focusing on improved reproductive performance.

treatments and planned synchrony and non-cycling cow programs.

Since 2008 reproductive performance has improved with the herd's six week in-calf rate increasing from 41% to 51%.

'The use of sexed semen has taken a big leap forward in the last 12 months with machines sorting the semen but we have also trialled, for the first time, fresh sexed semen brought to the farm in larger quantities.'

Heat detection is a priority in the herd — oestrus-alerts ("scratchies") are used and changed every two weeks in combination with tail-paint, which is touched up regularly.

During the calving season, two veterinary visits per week are programmed to examine all cows calved and to treat any sick and lame cows found since the previous visit.

From calving, no fresh cow is al-

lowed to join the milking group until it has been confirmed as having no evidence of uterine infection. If clean, the cow goes into the milking group. However, if retained afterbirth, endometritis or metritis is detected, cows are treated and re-examined at the following visit.

In practice this means that up to 80 cows might be examined during a herd visit. To keep track of treatments and events, information is entered directly into a computer program called Dairy Data at the time of examination using a tablet computer.

"Anytime the vets are here with us we can enter data straight into the program," Mr McCluggage said. "I'm talking about treatments, lame cows, dirty cows after calving and drying off the whole lot — so we have a very detailed history across 15 years of reproduction."

"At the end of the season we do ultra sound pregnancy-testing, which is very accurate and we sit down and look at the results."

"The reason we do that is we are investing a lot of money in reproduction, semen costs, synchrony programs, vet costs so if you're not going back and checking you're not being diligent with your business."

"There's too much money tied up in the investment to not know you

are getting an improvement so we are always testing our systems by that data."

Reproductive management of the cows and heifers

The herd is synchronised with help from the Warrnambool Vet Clinic and heifers are fixed-time mated using a controlled internal drug release (CIDR) program. They are joined to calve at the same time as the milking herd.

Holstein-Friesian sexed semen has been used on the larger heifers for the past five years. For the past two years the heifers have been split into two or three groups of about 50 for this process. Once artificial insemination (AI) is completed, Jersey bulls are run with the heifers, averaging one bull per 30 heifers. The use of sexed-semen results in an extra 40 to 50 early calving heifer replacements.

"The use of sexed semen has taken a big leap forward in the last 12 months with machines sorting the semen but we have also trialled, for the first time, fresh sexed semen brought to the farm in larger quantities," Mr McCluggage said.

"We used it in heifer and synchrony programs and we have had a big jump in conception rates on maiden heifers in a fixed-time program from 50% up to 60% which is a massive improvement."

Before the bulls are run with the heifers, they have a veterinary breeding soundness examination, and are vaccinated for vibrio and pestivirus. Once they are run with the heifers they are observed daily for lameness and removed from the group if this occurs.

The McCluggages believe a key to

good fertility is to feed the cows well at all stages of the production cycle. Dry cows receive pasture hay grown on the out paddocks and two kilograms per day of grain. When cows are three weeks from calving, they are brought onto a transition diet of ryegrass hay and 5-6kg grain mix containing a blend of anionic salts and minerals.

After calving, cows go onto 6-7kg of grain mix in the dairy and green grass if it is available.

Genetic selection for fertility and production

Holstein-Friesian sires have been used in the herd for 10 years. The bigger heifers are joined to three sexed-semen sires with high semen fertility.

The use of three sires reduces the risk of failure of the program due to a poor result from one bull. Mr McCluggage has found that there can be a wide variation in the fertility of sexed semen so instead of using newly released bulls, he uses bulls with proven semen fertility from previous seasons. Heifer calves are kept from heifers.

The use of fixed-time sexed-semen in heifers increases the number of early-calved replacement heifers.

For the cows, Mr McCluggage seeks advice on the breeding program he intends to use each year. Breeding values for fertility is a definite consideration, while Australian Profit Ranking (APR) is one but not the sole consideration in Mr McCluggage's bull selection.

"We work closely with our semen company ABS," he said. "I'd rather get the technical help within its group to pick out the teams. We are also increasing the type and the genetic merit of the herd."



Sam McCluggage said he stopped using induction on his farm as he was concerned the practice was contributing to infertility in his herd.

Why stop induction?

Mr McCluggage's father used calving induction as a routine practice to manage calving pattern. However, despite being a well-managed herd he observed that more cows seemed to need inducing each year.

When the McCluggages established their own herd, they made similar observations. They didn't like the practice and weren't seeing progress in the reduction of the number of cows requiring induction each year.

Mr McCluggage was worried that rather than improving the fertility of his herd, induction may have been contributing to infertility as cows that wouldn't have been able get back into calf were being kept in the herd.

A major consideration was that as the herd became larger, more staff were required, and Mr McCluggage found it difficult to ask staff to euthanase induced calves.

"In the back of my mind I just wasn't comfortable with it and I thought it was something the industry was going to have a problem with down the track so we've done a lot to prove the theory wrong with our farm," he said.

"We stopped inducing eight years ago and went to natural calving. In the first year we saw a reduction in the number of empty calf cows from 30% to 18%.

"Through improvements in all our reproductive management techniques during the last five years we've got to a stage where we are calving in less time than when we were inducing."



Why does their system work?

Keep excellent records

- Herd reproduction performance is tracked and new practices are carefully evaluated. Mr McCluggage has shown that it is possible to decrease calving spread, increase herd size and improve the fertility of the herd — all at the same time without the need to induce cows.

Rear lots of replacement heifers

- The use of sexed-semen and fixed-time mating in the heifers results in more early calving replacements and in

a younger more fertile herd. Mr McCluggage has succeeded in building numbers to 650 cows and has a new revenue stream from selling excess heifers and late calving cows.

Get cows back in calf early

- The attention to herd health and increased effort targeted at recently calved cows maximises the chances of the cow to get in calf early.
- Heifer replacements are selected only from the early calving group to maximise their fertility.

Analysis sets business for success

- Key points**
- ✓ Dairy Farm Monitor Project participants
 - ✓ Key part of business planning
 - ✓ Ensure systems produce results

SOUTH-WESTERN Victoria dairy-farmers Eddie and Lisa Dwyer's business analysis focus has helped their farm remain a consistent high performer in their region.

The couple, who milk 280 cows from a 140-hectare milking platform at Hawkesdale, are part of the Dairy Farm Monitor Project (DFMP), which offers Victorian farmers the opportunity to compare their performance against other farms and identify areas for improvement.

Their business has consistently been in the top 25% of DFMP farms during the eight years they have been involved.

'Those insights that you gain in the beginning are enormous...'

The DFMP is a key part of the business planning for the Dwyers' operation highlighting strengths and weaknesses, and the couple use it as a tool to help monitor business progress.

The business performance reports from DFMP allow the Dwyers to compare costs across time and against other farms and confirms decisions around such items as feed expenses, labour and animal health.

"We started out from scratch here 10



Lisa and Eddie Dwyer: There are lots of gains to be made through this type of analysis.

years ago and were asked if we would join the Dairy Farm Monitor Project at the beginning as they needed numbers," Mrs Dwyer said "The analysis is forensic in its approach and I think because of that you can have a lot of confidence in the results to allow you to plan forward and make good business decisions."

The results ensured appropriate systems were in place to continue to

produce results and identify areas for fine tuning. However it was different in the beginning.

"When we first started we had little choice but to ensure we had a handle on where every cent was going and we were making good decisions," she said.

"Those insights that you gain in the beginning are enormous and now we have all of that data to look back on — there are lots of gains to be made through this type of analysis."

Mr Dwyer said the result he was most interested in from the DFMP data was pasture consumption as it was the key driver of profit.

"The industry is always evolving and things change there is new technology and knowledge, and analysis like the Dairy Farm Monitor project can help you identify how these new approaches can impact on business performance," he said.

DFMP is a joint initiative between the Department of Environment and Primary Industries and Dairy Australia.

Factbox DairyBase is coming

DAIRY Australia will officially launch DairyBase providing dairyfarmers, service providers in May this year and industry with a national database of Dairy Farm Monitor Project (DFMP) data and other datasets from consultants and other service providers.

DairyBase will offer dairyfarmers a free web-based system to enable them to measure their business performance and compare their business anonymously like the DFMP.

Lisa Dwyer said using an annual financial review such as DairyBase was part

of good farming practice and should be a part of an effort by farmers to become better at business.

"While it is a great lifestyle, farming is a business and there are risks involved," she said.

"By getting involved in some analysis like DairyBase it gives you a better understanding of the details of your dairy business so you are better able to manage the risk."

For more information visit <www.dairyaustralia.com.au/DairyBase>.

Mastitis best practice videos available

Key points

- ✓ Four new videos on mastitis management
- ✓ Countdown App upgraded
- ✓ Visual guide to be used in the shed

DAIRY Australia's Countdown 2020 team has produced four new videos to be used by farmers and their staff to help improve milk quality. The three-minute videos cover topics include:

- dry cow treatment,
- treating a clinical case of mastitis,
- pre-milking teat preparation, and
- using a rapid mastitis test.

Countdown 2020 project leader Mark Humphris said the videos were produced to provide a practical step-by-step guide for farmers and their staff on common procedures with cows and mastitis control.

"The new videos can be used before treating a mastitis cow or drying them off to go over the critical steps to get the best outcome with staff and will also be used for in Cups On Cups Off courses offered by the National Centre for Dairy Education," he said.

The videos can be accessed on Dairy Australia's website <www.dairyaustralia.com.au/shedguides> or through the Countdown Mastitis Toolkit App. 

'The new videos can be used before treating a mastitis cow...'



New videos from Dairy Australia cover different aspects of managing mastitis, including dry cow treatment.



Vets including Zoe Vogels were involved in the designing the Countdown App.

Upgrade to popular Countdown App

MARK Humphris said the Countdown Mastitis Toolkit App is being upgraded to offer farmers even more support to manage and control mastitis. The upgrade will allow users to create farm reports out of the tools on the app as well as offering more photos and links to information on milk quality.

The app has been popular since being launched in October 2013.

More than 2500 farmers, advisers and service providers have downloaded the app.

Designed in consultation with dairy farmers, advisers and vets, the app content is based on the Countdown 2020

mastitis control program and associated resources.

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.

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.

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Not all farmers have the same breeding goal. Some look for bulls to fast track **PROFIT**, some to fast track **HEALTH** and others to fast track **TYPE** while others simply want a balance of all three.

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The **BPI – Balanced Performance Index** blends production, health and type traits for maximum profit, the **HWI – Health Weighted Index** places emphasis on fertility and mastitis resistance and the **TWI – Type Weighted Index** places greater emphasis on type.

These three new indices will be available for the first time on all bulls in the April 2015 ABV release.



Photographer Bradley Cullen

These impressive progeny test daughters sired by JENKINS [rear] and FLASHBACK [front] will contribute to their 1st ABV in April. Owned by Paul, Lynette and Adam Lenehan, Murraybrook Holsteins, Crossley, Vic.

Based on preliminary information Kirk Andrews **JENKINS** *s. Planet* and Carenda **FLASHBACK** *s. Shottle* look set to rank among the best on the new breeding indices. Daughters impress with their within herd performance, their overall type and their health and management traits.

For more information on these two exciting bulls or on the new breeding indices to be released in April contact Genetics Australia on free call 1800 039 047.

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