MILK VALUE MONITOR

Warrick and Emma Tyrrell

CASE STUDY

KEY TAKE HOME MESSAGES

Home grown feed – focus on getting the most from the biggest asset – the land – growing and utilising as much home-grown feed as possible.

Review and monitor performance and always look to learn from others.

Develop the farm system to suit the farm resources and constraints.

Farm background – the people

Warrick and Emma Tyrrell own and operate a 300 cow dairy farm at Dardanup in Western Australia. They joined the family business in 2006 and have three young boys ranging in age from 7 to 12.

Warrick grew up on the family farm and was fortunate that in his late teens his parents involved him in all levels of decision making that drove a strong business focused approach to his dairy career. Initially both he and Emma trained as veterinarians and spent some time working in Victoria. While they both enjoyed that role and would have been a "great second best career" there was always a longer-term view to come home to the dairy operation where they could develop the business and create a strong future for themselves and their family.

When Warrick was completing high school, the farm was milking 50 cows in a walk-through dairy on a 40ha dairy platform. The business grew by purchasing an additional 40 ha and with the build of a herringbone shed increased cow numbers to 130. Just prior to Warrick and Emma joining the business the farm had purchased another 40 ha and was milking 180 cows.

Farm description – at a glance

Farm details	Farm system	Farm performance ($)
People: Warrick and Emma Tyrrell	Herd size: 300 cows (medium sized Friesian)	EBIT $1.44 per kg MS average and range $0.91 to $2.95 over the past 4 years
Milking area: 123ha	Split calving pattern (50:50 Spring; Autumn)	ROTA 4.7% average and range 2.4% to 10.9% over the past 4 years
Usable area: 342ha	Stocking rate: 2.5 cows/ha	
Average rainfall: 919mm	Pasture base (fodder self-sufficient farm)	
Irrigation: average annual use – 315ML	Concentrate feeding: 2.5 t DM/cow/year (2.2–3.1)	
	Proportion of homegrown feed in the diet 62% (51–70)	
	576kg Milk solids/cow (547–598)	
	Production % liveweight 93% (88–96)	

Australian Government

Dairy Australia

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Farm location

The story

Farm system

Increasing scale was a necessity when the Tyrrells came back to the farm. They knew that they still had to ensure the key settings of the operation were sustainable going forward. The farm had been at a relatively low stocking rate (1.5 cows/ha) so they knew they had potential to improve the utilisation of the land area. They could increase stocking rate but not to a level that would overly expose the farm operation to bought in feed. *"The biggest resource we have is our land so we try to grow as much feed as can and do that to best of our abilities".*

Getting the key settings right such as stocking rate and calving dates has been important in driving the success of the business. Integral in determining those optional settings is to work to the strengths and manage the weaknesses of the farm.

The Tyrrells try to optimise and satisfy a number of factors in order to be able to operate effectively and profitably. These factors are:

- A very wet, poorly drained farm in winter
- Pasture production which includes irrigated, moderate quality kikuyu pastures (with yields that have been steadily improving over time)
- Maintaining a simple system that is conducive to labour (both owner and paid labour) having acceptable hours of work and a roster with appropriate time off
- Desire to focus on what we are best at and engage contractors where the job can be done better at a reasonable cost.

Calving dates are implemented to mitigate the very wet nature of the farm "Does not take long to make a very big mess" and cow numbers are matched to pasture availability. There are very low levels of grain fed through winter and spring to maximise grazed pasture utilisation when pasture growth rates are high. In summer very high grain levels are fed when pasture availability is limited. The increased grazing pressure on the kikuyu pastures also helps to improve utilisation and maintain quality.

The ultimate aim is to produce milk at times when its most profitable to do so which is a combination of protecting the farm in the wet winters, utilising as much home-grown feed as possible and efficient use of the farm infrastructure.

They see practicality and logistics of implementing a farming system as being just as important as the numbers. Key settings such as calving dates and stocking rate driven first by avoiding too many cows in winter, then matching cow feed demand with pasture growth rates, then will look at the milk price signals. The key setting decisions are more complex than just doing the numbers.

Finding the right system has evolved over time. Matching farm physical characteristics, infrastructure (dairy capacity, irrigation, laneways) and labour availability has driven the key settings around stocking rates and calving dates. The Tyrrells then focus on implementing the system as best they can.

They have developed a system that suits the farm and not one that suits the milk price. However, the Tyrrells acknowledge that the Western Australian dairy market is domestically orientated requiring flatter milk supply and therefor restricts seasonal calving in preference for split calving. The upside is that split calving spreads the load on the infrastructure (dairy and calving facilities) and ultimately results in an improved utilisation of the infrastructure that exists.

Decision Making

The Tyrrells are constantly looking at how they can fine tune their operation to improve returns. All farm tactical and operational decisions are profit focused and Warrick uses tools such as Microsoft Excel to aid his decision making. *"Excel is a wonderful tool".* Planning and decision making about production targets, fertiliser use, calving dates, feedbudgets, and cashflows are all supported by Excel spreadsheets.

Growing as much as possible from the land area is a primary focus for the Tyrrells and therefore nitrogen is used extensively. They will use information from the Agricultural Department to guide application rates and will use up to 160 kg N/ha over the growing season to boost growth and increase the total dry matter consumed.

Decisions on grain feeding is driven primarily on filling feed gaps. They will prioritise pasture utilisation first hence lower grain feeding rates during the winter and spring months when more pasture is available. They then increase rates when pasture availability is reduced during

summer and autumn. They will look at the milk price/grain price ratio and push grain if pasture utilisation is not compromised and there is still profit in feeding that extra kilogram of grain.

Grain feeding has proved to be a useful profit driver for the Tyrrells as prior to the last two seasons the milk price to grain price ratio has been very favourable and have exploited the opportunity. However, the Tyrrells understand that last kg of gain fed is not as profitable as the first kilogram (law of diminishing returns) and therefore there is a limit. They will monitor pasture residuals and vat responses when increasing grain levels and do the sums to ensure they are still in a profitable feeding range. Obviously, there are also the practical considerations (capacity limits when bail feeding) and ration balance (avoidance of acidosis).

Even when the grain numbers stack up, there is still an underlying principle that the Tyrrells have at the back of their minds which is not to lock themselves into a particular feeding regime that they cannot retreat from when things change. Recent years of higher grain prices have reduced the profit margin and the Tyrrells have also backed off in the level of feeding. The Tyrrells do not want to be locked into a system that has too much reliance on a feed source (purchased grain) that they have limited control over.

To improve farm performance the Tyrrells have always sought out information and looked at what others are doing. When they first came home to the farm operation, doing annual reviews on their farming operation were critically important in helping identify areas of the farm performance that they could improve upon. This helped them set their annual goals and areas of focus.

When the farm was growing and evolving they had no past experience to rely upon so looking at others and monitoring their own results was an important ingredient to success. As they have now settled into their farming system the annual review is still important however it is more about ensuring they keep on track rather than identifying areas that need attention.

The Tyrrells acknowledge there is nothing like the fear of failure that can be a strong motivator and early in their dairy career as they grew the business they experienced the financial strain like any other growing business. The annual review process provided the confidence that that they were on the right track and allowed them to consolidate their position over time. Now that some of that pressure has abated, and the "overdraft is not breathing down our necks" they can relax a little bit. While this might mean they forego some opportunities for extra profit they have a bit more margin for error and are "not sitting on the edge all the time". Earlier in their career they had no choice but to pursue all opportunities for additional profit, as they are now more established they can enjoy their position a little bit more.

What business management tools do they use and how they monitor cost of production?

They are also involved in a Dairy Business Network Group (DBN) that consists of a group of farmers who share their farm information (financial and physical performances) that allow them to test their ideas and strategies with their peers. The group will have an annual review day where they look back at the year and see how they have performed and can relate their performance to others in the group. They know the numbers but just as importantly they know the stories behind the numbers. As the group meets regularly during the year they also have the opportunity to see how group members are dealing with the day to day challenges that dairy farm businesses are constantly needing to address. Prior to each meeting group members are asked to provide answers to series of questions:

- Cow numbers
- Milk in the vat (including component tests)
- Milk price
- Area grazed per day
- Kg of grain fed
- Kg of silage/hay fed
- Cost of bought in fed.

The margin over feed costs is calculated for all group members by their group facilitator and provides an opportunity to see and learn from what others are doing in real time. The Tyrrells get that opportunity to test their decisions with others on a here and now basis.

Managing risk

Seasonality risk is a major consideration and the Tyrrells have had an aim to be fully self-sufficient for their fodder needs in an average year. This has been achieved and their next goal is to look to build a fodder reserve over time. This is much easier said than done but it is a strategy that they are striving to achieve to reduce the impact of a poor growing season.

The Tyrrells have always focused on what they call "the low hanging fruit and for us that is always about reducing feed costs". The feed costs are the biggest cost item in the business so a 10% movement up or down has a significant impact to the bottom line.

Growing and utilising more from the biggest asset has been a constant focus. Getting grazing rotations right (Feeding Pastures for Profit program), keeping an eye on residuals, tailored fertiliser plans, irrigation management, identifying true surpluses and conserving that surplus all contribute to improving the productivity of the operation.

Access to reliable labour is an ongoing issue for the Tyrrell's. Backpackers have been used in the past but the constant turn over and requirement to retrain is becoming unsustainable. In the past there had been some consideration to expand the business by purchasing another farm but access to quality reliable labour was a risk they could not accept.

Looking to find ways to reduce costs without compromising on profit is always front of mind for the Tyrrells.

An example was they had been using a dairy pellet as they had no grain processing infrastructure on farm for grain. Dairy pellets were significantly higher in price to grain. They calculated the cost/benefit analysis taking into account the cost of capital for new equipment, depreciation and cost of power to process the grain. *"The numbers seemed too good to be true"*. They made the investment and are now regularly at the lower end in the unit cost of their bought in supplement compared to their peers.

When making changes the Tyrrells know that there needs to be a healthy margin because there will always be a risk that something will go wrong or assumptions may not deliver as expected. They do their research so that their assumptions have some basis however there is always a need for "some buffer to cover the risk".

Things will go wrong and therefore you need to expect that. When making a change you need to have plenty of buffer when assessing that change as you don't know exactly what will happen. The buffer provides the return that is required to manage the risk.

The Tyrrells have always had what they consider a conservative attitude towards debt. They implement a policy of reducing debt as quickly as practical/sensible over time. Reducing the financial load on the operation provides that buffer for when operating conditions are challenging.

What do they monitor to keep on track?

The key indicators the Tyrrells use in their business are:

Return On Total Assets – this tells us whether we should have bothered farming in the first place or whether we should have just invested money elsewhere.

Physical checks:

- Cow condition
- Milk production
- Protein/Fat composition – indicator of how well the animals are being fed
- Pasture residuals
- Faecal consistency.

What's next?

Profit is the driver so that life can be enjoyed. The Tyrrells have children who are getting to an age where they are involved in a lot of sport and other activities and they want to be able support them and get time off farm to do that.

'What is the point of doing well if you don't get the chance to enjoy it.'

ADVICE TO NEW ENTRANTS/ KEYS TO BUSINESS SUCCESS

The Tyrrells see the key to personal attributes for success are:

- An open mind that is keen to learn
- Ability to logically problem solve
- Able to multitask and understand a multifactorial production system
- Have a temperament that can handle a reasonable level of failures and stress without impacting on your mental wellbeing
- Be reasonably motivated and have a desire to succeed.

"Dairy is challenging and sometimes it can feel too challenging but you just have to have the resilience to let that wash over you as over the longer term the returns are there. We are very happy with what dairy has done for our wealth creation and the lifestyle we want."

The numbers behind the story

Farm details

	2016/17	2017/18	2018/19	2019/20
Milking Cow Numbers	335	335	320	290
Total useable area (ha)	299	359	342	342
Rainfall (mm)	704	902	737	704
Irrigation (ML)	290	342	317	311

Primary indicators

	2016/17	2017/18	2018/19	2019/20
Business Efficiency				
EBIT per kg Milk Solids ($)	2.95	0.97	0.92	0.91
Return on Total Assets managed (%)	10.9	3.3	2.3	2.3
Return on Equity (%)	12.4	3.6	2.6	2.7

Secondary Indicators

	2016/17	2017/18	2018/19	2019/20
Milk price ($/kg MS)	7.65	6.78	7.13	7.34
Total Variable Costs ($/kg MS)	3.18	3.94	3.97	4.52
Total Feed Costs ($/kg MS)	2.73	3.40	3.40	3.99
Homegrown Feed Costs ($/t DM)	141	176	152	168
Total Labour Costs (paid plus imputed) ($/kg MS)	1.29	1.54	1.53	1.66
Cost of Production (including inventory changes) ($/kg MS)	5.87	6.37	7.20	7.73

Tertiary indicators

	2016/17	2017/18	2018/19	2019/20
Milk solids as a % of Cow liveweight	92	96	88	95
Proportion of homegrown feed in the diet (%)	62	51	66	70
Homegrown feed consumed (t DM) per 100mm rainfall	0.63	0.42	0.61	0.67
Homegrown feed consumed (t DM/ha)	7.0	4.8	7.8	6.2
Milk solids per Labour Unit	54,989	49,844	50,760	46,835

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