

Tassie Dairy News

www.utas.edu.au/tia/dairy | October 2018



Wise watering

Symon Jones, TIA

With the rising cost of purchased feed, it is particularly important to focus on maximising pasture growth and consumption of home-grown feed this season. An important part of this process is making the right decisions with irrigation scheduling.

Many dairy farmers start irrigating too late, and this can result in significant yield and economic losses. While it might seem too late in the season to be making this point – as irrigation should have started by now – irrigation start-up will occur multiple times during a season.

Each time there is a rainfall event significant enough for irrigation to be stopped, irrigation must recommence at the right time. The right time can be identified using soil moisture sensors or by subtracting the daily evapotranspiration from the amount of readily available water contained in the soil. For each day's delay in irrigation start-up there is a potential reduction in pasture grown which can be as much as 105 kg DM/ha for a full season.

Irrigation scheduling – Getting it right

Irrigation scheduling is about putting on the right amount of water at the right time. If this is not done, it is easy to use a lot of water just to keep pastures green, rather than maximising pasture growth.

Getting start-up and subsequent scheduling wrong is expensive. There are direct costs (water and energy) as well as lost pasture production or extra expenses from buying feed. To get irrigation scheduling right you need to know 3 key things:

- The amount of readily available water held in your soil type
- Daily evapotranspiration amounts for your area
- The system capacity of your irrigation system

Readily available water

This is the amount of water held in the soil which can be readily accessed by plants. Readily available water amounts in the top 30cm of soil (the root zone of most pasture) typically range from 15-24mm (Table 1 overpage).

[Continued >](#)

Inside the newsletter

Feeding this Spring	02
South African dairy farmers value benchmarking for decision making	04
DairyTas in conjunction with the Tasmanian State Government is pleased to be providing funding for "Cows out of Creeks"	06
DairyTas Update	07
Dairy Diary 2018	08

Table 1. Showing RAW for a range of soil textures in dairy pastures

Soil texture	Total readily available water
Sand	15
Sandy loam	18
Clay loam	24
Clay	15

Evapotranspiration rates

Evapotranspiration is the amount of water used by plants – typically it is slightly less than daily evaporation amounts. It varies depending on levels of solar radiation, wind speed, air temperature and relative humidity.

Daily evapotranspiration amounts are available from the Bureau of Meteorology (BOM) website (www.bom.gov.au). The free smart phone app 'The Yield' uses data from the BOM to report daily evapotranspiration amounts and to make predictions for the upcoming week.

$$\text{Irrigation interval} = \text{Readily Available Water (mm)} \div \text{evapotranspiration (mm/day)}$$

For example, TIA's Dairy Research Facility at Elliott has a clay loam soil with 24 mm of readily available water in the top 30 cm. The evapotranspiration rate in October is an average of 3.3 mm/day.

$$\text{Irrigation interval} = 24 \text{ mm} \div 3.3 = 7 \text{ days}$$

This means that 24 mm of water needs to be applied every 7 days during October. In January, the irrigation interval can shorten to 4 days ($24 \text{ mm} \div 5.4 = 4$).

System capacity

In addition, you also need to consider the system capacity. Does the system have the ability to apply 24 mm every 7 days? Or even every 4 days?

System capacity = Daily pump flow rate (ML/day) \div irrigated area (ha) \times 100. Expressed in mm/day.

You can then make a useful comparison with the daily evapotranspiration rate.

$$7.5 \text{ ML/day} \div 120 \text{ ha} \times 100 = 6.25 \text{ mm/day}$$

Assess pump flow rate by using flow meter information or contact your service provider.

For the above example, if the evapotranspiration rate is below system capacity, the irrigation system should be able to keep up. If the evapotranspiration rate is above system capacity, it means that not enough water can be applied to match the evapotranspiration rate. If nothing can be done to adjust the system or reduce the area irrigated, soil moisture will fall below optimum levels and pasture growth will slow.

Table 2. Average daily evapotranspiration (mm/day) for each month

	Ross	Cressy	Smithton	Elliott	Scottsdale
Oct	3.8	3.2	2.5	3.3	2.9
Nov	5.0	4.3	3.2	4.2	3.7
Dec	6.2	5.2	3.6	4.9	4.5
Jan	6.9	6.0	3.8	5.4	4.9
Feb	5.9	5.6	3.4	4.9	4.4
Mar	4.4	3.8	2.6	3.6	3.3

Feeding this Spring

John Mulvany, OMJ Consulting

"I don't do marginal milk, it's just too risky," an expat Kiwi dairy farmer in Tasmania told me.

It's a good reminder that, depending upon where you dairy farm and the conditions you are currently experiencing, there are two types of milk. The first is milk produced from pasture (the one that generally drives farm profit) and the second is marginal milk, produced from supplements.

Marginal milk is named as such because its production should depend on the difference between its cost and the income it generates. Sometimes marginal milk is very profitable, but not always.

The current situation:

Two types of dairy farms

There currently appears to be two clear types of dairy farm situations across Australia:

- There are farms with virtually no grass and no cheap milk where the decision to use supplements even at current prices is non-negotiable.
 - » The decisions made by this group of farmers are centred on the questions: "Will a milker cover her feed cost?" and "At what point do I dry off a proportion of the herd and feed them as dry cows?"
 - » These farms are spending 80-100 per cent of milk income on feed; the other expenses are either mining equity or coming from reserves.
 - » Decisions in these situations require a fine balance between preservation of the business (being able to bounce back), and the financial means to be able to afford to bounce back.
 - » Cost and access to feed are paramount and most of this group are identifying the 'feed window' they want to fill, which might be 30-40 days or longer.
 - » A very tough scene.
- The second group of farms are those with grass.
 - » The levels of supplement fed in spring, and marginal milk produced, are actually discretionary (like my Tassie farmer above highlighted).
 - » In the old days (if they'd had the feed prices we have now) most farmers would have just turned the supplement dial down a bit in spring (because they could) and then turned it up in summer because they had to!
 - » The complication at present is the external price and availability of fodder (it's gold!). If grass and fodder are both absent, the proverbial hits the fan!
 - » There has been a lot of advice about increasing nitrogen in spring – that's a no brainer on both milking and support areas.

There are no recipes for the perfect path this spring BUT there are very solid principles that apply year in and year out.

Milk price to feed ratios

When it comes to marginal milk, there are various milk price to feed ratios that are often confused. The following tabled information (from a recent Gippsland Focus Farm meeting) may help clarify the situation.

Table 1. Milk and feed price ratios

Milk price \$5.11/kg MS at 4.1% BF and 3.3% Pr or 38c/L; Grain price \$400/T

Ratio	Focus Farm example	Your figures
1. Solids vs Grain Basis		
Cents/kg milk ÷ \$/T grain	511 ÷ 400 = 1.27	Your milk price in spring _____cents/kg MS
Based on 0.08kg milk solids response per kg fed.	At a ratio of 1.27 the cows have to be in the right stage of lactation and hungry	Your grain price _____ \$/T
This ratio needs to be greater than 1.5 to have absolute confidence in making money.		Your ratio: _____
2. Litres vs Grain Price		
Cents/L ÷ cents/kg	38 ÷ 40 = 0.95	Your milk price _____cents/L
This needs to be greater than 1.0 to generate a margin. It's simple but can be misleading because it is calculated based on litres.		Your grain price _____cents/kg
		Your ratio: _____

In most cases, there will be minimal or no profit from using concentrates in spring. However, concentrates may provide overall benefit if:

- the concentrates are cost neutral
- they assist you to conserve more fodder
- your farm has acceptable production, and
- your cows are in good condition.

For the farmer who has pasture, a frequent comment at present is "...I'll still feed but probably a bit less, and the cows will just be bit hungrier..." For those who understand the 'daily line' it means a little bit to the left, with cows keen to come into the dairy.

Equally some are saying "I'll keep feeding at the same rate to help create silage, but I'll be cautious." Feeding to create fodder will only work if you change grazing management. Allocate to ensure that the cows still leave the right residual at a higher stock density per hectare (e.g. 90 cows/ha/24hrs instead of 60 cows/ha/24 hours). This means that more cows are grazing pastures that are a bit longer than normal in spring so it has a high risk of losing quality. Get this wrong and the cows will make you pay in the vat for "forest munching".

Calculate your net

If you have pasture this year, irrespective of your spring feeding regime, it's worth calculating your net litres or solids. After all, the net is what's left (after the cost of feed) to pay other bills.

A net figure of 1.7 kg milk solids or 21-23 litres (4.0% BF/3.3%Pr) would be a good outcome this spring. Table 2 shows the method to calculate the net figures.

Table 2. Calculation of net litres and solids

Cows producing an average of 28 L at 4.0% milkfat and 3.3% protein (2.0 kg MS); milk price \$5.50/kg MS or 39c/L; feeding 4 kg grain at 40 cents/kg.

Example	Your figures
Income: 2 kg MS x \$5.50/kg = \$11.00	
Supplement cost: 4 kg x \$0.40 = \$1.60	
Net after supplement: \$11.00 - \$1.60 = \$9.40	
\$9.40 ÷ \$5.50/kg MS = 1.71 kg MS net	
\$9.40 ÷ \$0.39/L = 24 Litres net	

If the level of concentrate feeding in spring creates a low spring net, the cash flow pressure it creates might not be worthwhile – it is a very fine balance.

Herd numbers for this season

Finally, in regard to numbers for this season, as usual there is a huge variation and plenty of opinions:

- Those without pasture have already gone back to absolute core numbers and that includes young stock; fewer mouths moderately fed.
- Those with pasture are generally trimming a bit earlier, BUT there are still quite a few farmers waiting until the end of spring to do a normal "clean out". As one of them said: "The way this industry changes, who knows what will happen by December!"

There are no recipes for the perfect path this spring BUT there are very solid principles that apply year in and year out.

South African dairy farmers value benchmarking for decision making

Symon Jones, TIA

In August, I attended the Intelact Dairy Business Conference in Durban, located in the Kwa Zulu Natal region of South Africa.

Overview: The South African dairy farming context

The South African dairy farming climate is very similar to Western and Northern Victoria and the dairy industry faces just as many challenges as we do, such as climate variability, milk supply and demand.

Maintaining the persistence of ryegrass as a dominant species is a real challenge in an environment where kikuyu pastures thrive, and managing kikuyu requires much greater effort.

Despite the low percentage of pasture in the diet, there is real focus on growing quality pastures – a focus driven by stocking rates and high pasture demand per hectare.

Average cow live weight is 516-530 kg and is trending down as more Jersey and cross bred cows replace the larger Holstein type of Friesian cows.

Farmers are generally moving towards larger herds or operating multiple farms. This is made easier by the ready availability of low cost labour. The number of cows milked per FTE (Full time equivalent) is between 30 and 50 cows. The Tasmanian average is 140 cows per FTE.

My observation is that more labour generally does not translate into greater efficiencies or productivity in

My observation is that more labour generally does not translate into greater efficiencies or productivity in South Africa.

South Africa. However, it gives farm owners more time to work on the business rather than in the business at an operational level. As a result, South African dairy farmers have more time to think strategically about their business direction. They highly value benchmarking, as benchmarking gives them a method of measuring farm performance, making them investment ready when the next opportunity comes along.

Learning on the ground: Pre-conference farm tour

I joined the pre-conference farm tour along with Intelact consultants and their farmer clients in Durban. We travelled through the Kwa Zulu Natal (KZN) midlands and Eastern Cape.

Weather conditions and pasture type

While the coastal region around Durban is a subtropical environment, KZN and the Eastern Cape are vast areas. They are located further from the coast with a lot of open savanna and veldt country, which is typical in a semi-arid to arid climate.

Average annual rainfall is low at around 450mm and there is wide variation in rainfall distribution across the country. The Western and Southwestern Capes get good winter rainfall, whereas the Eastern Cape is bimodal (it has two rainy seasons), and Kwa Zulu Natal only receives summer rainfall.

As a result of the climate, pasture is typically Kikuyu-based with a ryegrass oversow, as this mixture withstands temperature extremes. However, there is a move to alternative pasture mixes such as lucerne, plantain or chicory to improve pasture quality, and alternative

pasture species are being researched at the Orteniqua Research Farm in George (Eastern Cape).

Pasture research at the Orteniqua Research Farm

Plantain yields in the trial plots are 20 t DM/ha/year. Given this promising outcome, the plantain research will continue next season by trialling it under normal grazing conditions.

Most farms have some irrigation (usually centre pivots) and water is sourced from on farm storage or regional dams and river systems. Farms with permanent irrigation have predominantly ryegrass-based pastures.

Farms in the KZN and Eastern Cape have been experiencing drought conditions. At the time of my visit most water storages were only at 20 per cent. However, the rainy season was just starting.

Dairy industry: Milk prices strong

Over the last two years, South Africa has experienced high milk prices – well over \$6.00/kg MS. This led to a 5.8 per cent increase in milk supply in the first quarter of 2018.

As a result, milk prices are expected to decrease by around 20–25 per cent from \$6.60 to \$5.00 as the industry deals with the oversupply.

Milk produced in South Africa is largely for domestic consumption and while some dairy products are exported, the country is a net importer of dairy produce.

South African farmers are concerned about land expropriation, whereby the Government can legally, as provided by the Constitution, take land from Caucasian farmers without providing compensation.

Handing land back to the South African indigenous community is seen as a means of redressing socio-economic problems and a way to move the majority of South Africans out of a cycle of oppressive poverty.

Land expropriation is a big issue for South Africa and is highly emotive – politically, socially and culturally – and continues to make front page news.

Yet even with these challenges facing the industry, everyone continues to work together.

Intelact Dairy Conference: Focus on benchmarking

The Conference drew on industry themes, such as increasing productivity through improvised management and innovation, and the event provided an economic situation and analysis of the industry. However, the main focus for the Conference was benchmarking.

The event attracted 70 farm businesses, who are regular participants in benchmarking. They

use the Red Sky analysis package for determining the physical and financial performance of their farms. Farmers can only attend the conference if they have conducted a Red Sky analysis for their business.

The 70 sets of farm data that were analysed showed impressive farm performance figures.

The average results for the 2017/18 season for the KZN farmers are shown below:

Physical parameters		
	Average	Top 10%
Number of cows	950	1768
Stocking rate/ha	4.43	5.55
Effective milking hectares	214	318
Live weight/ha	2286	2951
MS price R/kg MS	66.23 AUD \$6.23	66.92 AUD \$6.92
Litre price cents per litre	484.47 AUD 48.7 cents	484.47 AUD 48.4 cents
Total milk solids	431,178	881,515
Milk solids /ha	2009	2767
Milk solids % live weight	85.3%	85.6%
Milk solids /cow (kg MS)	454	499

Pasture and supplements		
	Average	Top 10%
Average pasture harvest (t DM/ha)	11.6	14.6
Estimated dryland pasture harvest (t DM/ha)	6.2	8.1
Estimated irrigated pasture harvest (t DM/ha)	12.4	16.1
Nitrogen applied (kg N/ha)	331	351
Pasture as a % of total consumed forage	44%	42.9%
Forage as a % of total consumed	20%	21.1%
Concentrate as a % of total consumed	35%	36%
Pasture consumed per cow (t DM)	2.5	2.62
Forage consumed per cow (t DM)	1.27	1.43
Concentrate consumed per cow (t DM)	1.9	2.05
Total consumed per cow (t DM/cow)	5.47	5.88

Pasture & forage costs		
	Average	Top 10%
Pasture cost cents/kg DM	21.5 c	18.3 c
Forage cost cents per/kg DM	23.0 c	21.0 c
Concentrate cost	39.0 c	40.0 c
Average cost of all consumed feed	27.6 c	26.4 c

Key performance indicators		
	Average	Top 10%
Operating profit per ha	\$3,590	\$6,167
Operating profit per cow	\$811	\$1,111
Total assets per ha	\$26,057	\$25,363
Return on assets	15.4%	29.8%
Operating profit margin	20.4%	31.6%
Operating expenses as % gross revenue	71.6%	66.6%
Financing costs as % of gross revenue	3.9%	2.6%
Cost of production per kg MS	\$4.36	\$4.46
Cost production per hectare	\$1,411	\$1,573

Yet even with these challenges facing the industry, everyone continues to work together.

Continued >

Benchmarking data and feed information

This benchmarking data shows that the average herd size for Kwa Zulu Natal region is 950 cows and is gradually increasing in size.

Stocking rate is higher than in Tasmania at 4.5-6 cows per hectare. While these stocking rates typically limit pasture intake per cow, milk production per hectare is much higher than in Tasmania at 2,286 – 2,951 kg MS / ha. Milk production is a major focus for each business.

Example: Broadview Dairy in the Mooi River Region milks 3,200 cows at a stocking rate of 6.6 cows per ha. Forage as maize silage is a big part of the diet.

Pasture intake was measured at 42-44 per cent of the total diet or 2.5-2.6 t DM/cow, while forage (maize silage and grass silage), makes up around 20 per cent of the diet.

Concentrates, provided as either maize or as a concentrate pellet, make up around 35 per cent of the diet.

Maize is grown and supplied at a cost of 21-23 cents per kg DM.

It is common to see maize silage fed in tractor tyres turned inside out. Feeding this way does not eliminate waste, however it is a low-cost and robust feeding solution.

Cows eating maize out of tyre feeders



Collecting calves Mooi River (KZN Midlands region). Very dry conditions



DairyTas in conjunction with the Tasmanian State Government is pleased to be providing funding for “Cows out of Creeks”

This is a collaborative approach between dairy and beef industries to help protect our waterways. It builds on the Clean Rivers program undertaken in the dairy industry, which has seen 137 farm businesses undertake effluent upgrades or off-stream watering projects to protect and improve water quality in Tasmanian catchments. The first round of Cows out of Creeks funding in Circular Head received fantastic support from farmers and we are looking to continue progressing good environmental/ animal welfare practices in the region.

This project supported by Greenhams and TasWater.

Grant funds of \$5,000 (+GST) per farm are available to cover off-stream watering systems including troughs, pump, pipe, water tanks, stock crossings and fencing to ensure cattle are not accessing waterways in the Circular Head region.

Applications have been extended to 19th November 2018.

Applicants notified by 25th November 2018.

Application forms are available from <https://www.dairyaustralia.com.au/news-listing/cows-out-of-creeks-for-circular-head-dairy-and-beef?id=0B2931CC364A4F5BA85CD805B3E57D62>

All projects must be completed by 1st March 2020 and claim forms with invoices submitted by 31st March 2020.

Every Tasmanian farmer should be happy to swim, fish and drink the water downstream from their farm.



DairyTas update

For more information contact DairyTas Executive Officer Jonathan Price, phone 6432 2233, email admin@dairytas.net.au, or go to the DairyTas website: www.dairyaustralia.com.au/dairytas



Your Levy at Work

What is happening at DairyTas?

Spring Into Action

DairyTas and TIA conducted a series of Spring Into Action field days and dinners across Tasmania at the start of October. These events provided information about managing with higher concentrate prices and a drier spring. There was a lot of great discussion at each of the events. Key points included:

- Plan early
- Focus on maximising homegrown fodder consumption
 - » Use nitrogen to boost spring pasture growth
 - » Graze pasture at the right time – as close to 3-leaf stage as possible, except when pasture is going to seed when it should be closer to 2-leaf stage
 - » Get irrigation scheduling correct
- Consider fodder crop options – there are a lot – but don't replace

highly productive, irrigated pasture with a crop, use poorer-performing paddocks

- Calculate cost of feed on a cents/MJ ME basis to determine which is cheapest – but don't forget protein and fibre needs. Test feed so you know their nutrient value
- Target feeding to the stage of lactation

There are plenty of resources available in the Feed Shortage 2018 section of the Dairy Australia website (www.dairyaustralia.com.au/feedshortage).

Thank you to Pip Gale (CopRice) and our local agronomists and consultants (Jason Lynch, Macquarie Franklin; Rob Winter, Heritage Seeds; David Squibb, PGG Wrightson Seeds; and Dan Sutton and Darren Briggs, Roberts) for their contributions to the Spring Into Action field days.

AGM

Come along to the DairyTas AGM being held at the Scottsdale RSL on 15 November. The guest speaker is Luke Shelley from the Bureau of Meteorology. Lesley Irvine (TIA) will present a pre-release sneak peak of the 2017-18 Dairy Farm Monitor Project results.

Employing People on Our Dairy Farms workshops

As herd size increases, there is an increased need to employ people or engage share farmers in businesses. There are many important factors to consider when employing staff and engaging share farmers. To help you with this, DairyTas will be running four workshops to answer questions around:

- More than the basics of employing people
- Updates on the Pastoral Award
- Casual conversion right to convert to permanent
- Termination – how and getting it right
- Visa and Immigration updates
- Share farming discussion for those investigating this option
- And MORE....

Join presenters Andrew Cameron, Workplace Relations Director at Primary Employers Tasmania and Penny Williams, DairyTas' Workforce Planning and Action Contractor at one of these free workshops:

- Scottsdale – November 12
- Deloraine – November 13
- Smithton – November 14
- Hamilton – December 6

Please RSVP at www.dairyaustralia.com.au/events-calendar or phone 6432 2233.

Tools and Resources

To find out more about the current situation and relevant tools that can assist you to plan, prepare and act for spring and the year ahead we have provided the following resources

Planning and budgeting	Copy Link	+
Hay and grain prices	Copy Link	+
Taking Stock one-on-one support	Copy Link	+
Regional extension activities and services	Copy Link	+
Fact sheets	Copy Link	+
Climate outlook, weather forecasts	Copy Link	+
Your health and wellbeing	Copy Link	+

DAIRY DIARY 2018

November

8 Nov: Yolla/Wynyard Discussion Group. Matt & Andy Jackman's, 249 Lowrie's Road, Oldina. 11am-2pm. Lunch provided by Red Cow Organics. Please RSVP to Sam Flight on 0409 801 341. (TIA)

12 Nov: Devonport Discussion Group. Ben Maile & Kristy Evans'. 1066 South Riana Road, South Riana. 11am-2pm. Lunch provided by Fonterra. Please RSVP to Sam Flight on 0409 801 341. (TIA)

12 Nov: Employing People on Our Dairy Farms Workshop. Scottsdale RSL, 30 George Street, Scottsdale. 10am-2pm. Please RSVP by 7 November www.dairyaustralia.com.au/events-calendar (DairyTas)

13 Nov: Employing People on Our Dairy Farms Workshop. The Bush Inn, 7-9 Meander Valley Road, Deloraine. 10am-2pm. Please RSVP by 7 November www.dairyaustralia.com.au/events-calendar (DairyTas)

14 Nov: Employing People on Our Dairy Farms Workshop. AgriTas, 12 Nelson Street, Smithton. 10am-2pm. Please RSVP by 7 November www.dairyaustralia.com.au/events-calendar (DairyTas)

15 Nov: DairyTas AGM. Scottsdale RSL, 30 George Street, Scottsdale. 10am-2pm. RSVP www.dairyaustralia.com.au/events-calendar (DairyTas)

16 Nov: North West Discussion Group. Matthew Lester's. 345 Houses Road, Lileah. Please RSVP to Symon Jones on 0418 876 089. (TIA)

20 & 21 Nov: ChemCert, Launceston (TasTAFE)

21 & 22 Nov: ChemCert, Smithton (TasTAFE)

21 & 22 Nov: Production Planning (Diploma Series), Deloraine (TasTAFE)

December

6 Dec: Employing People on Our Dairy Farms Workshop. Wild Fennel Café, 56 Lyell Highway, Hamilton. 6:15 p.m. arrival for 6:30 p.m. start. Please RSVP by 1 December www.dairyaustralia.com.au/events-calendar (DairyTas)



Facebook Group

The TIA dairy extension team have started a Facebook group "TIA Dairy Discussions".

Please join the group to stay up to date with what is happening and join in discussions on dairy related topics.



Contact us

Tassie Dairy News is provided free to all Tasmanian dairy farmers and is funded by TIA and Dairy Australia.

For more information, please contact a TIA Dairy extension officer, phone 6430 4953 or email tas.dairynews@utas.edu.au.

Electronic copies of this newsletter are available at www.utas.edu.au/tia/dairy.

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Your Levy at Work



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