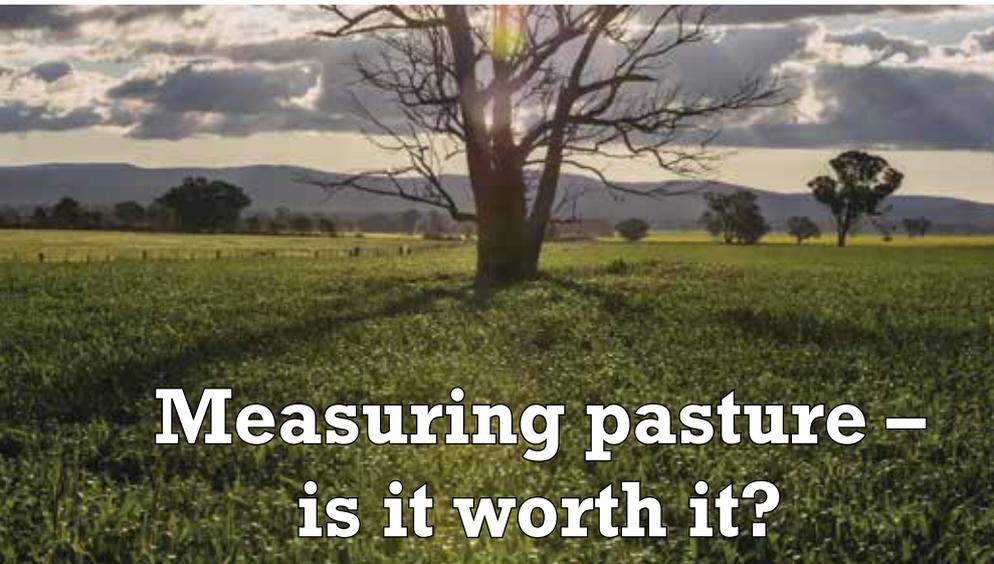


# Tassie Dairy News

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



## Measuring pasture – is it worth it?

**Lesley Irvine, TIA**

Some people think measuring pasture isn't too bad a job. Others quite like getting the data. But I don't think anyone **loves** measuring pasture. And because measuring pasture isn't a job that is essential to running a dairy farm (like milking cows) and it isn't a fun job, a lot of people don't do it.

What if you knew measuring pasture could increase your farm profitability? Would that make a difference to how you felt about it? A team of researchers in New Zealand published a paper earlier this year that put a value on pasture measurements. They used a computer model, the *DairyNZ Whole Farm Model*, to look at three different scenarios:

1. Perfect knowledge – the farmer calculates the daily energy requirements of the cows, and the herbage mass (pasture cover) of every paddock is measured.
2. Imperfect knowledge – the farmer estimates herbage mass with an average error of 15% (this error rate was based on a prior study).

3. Low knowledge – herbage mass is not assessed.

The researchers compared grazing management based on imperfect knowledge to low knowledge. They found that farm operating profit was increased by NZ\$385/ha/year if farmers estimated the pasture cover of the paddock the cows were going to graze (and make adjustments) rather than just putting them in the next paddock to be grazed. If you have perfect knowledge (measure paddocks on a regular basis), farm operating profit increased by a further NZ\$155/ha/year.

The cost of measuring pasture on a regular basis was estimated to be NZ\$17/ha/year to NZ\$40/ha/year.

These results might make some people skeptical – after all – it is just a computer model not the 'real world'. However, computer models based on real data are fairly accurate and we rely on them a lot in our day to day lives whether or not we realise it.

But for those who want more evidence that measuring pasture is worth it, the TIA dairy team has been working with

four 'real world' farmers over the past eighteen months to try and quantify the value of pasture measurements. These farmers have received weekly measurements for each of the paddocks on their milking area. They have each used the data in different ways and to varying degrees.

To hear their stories, the value they place on pasture measurements and whether they will continue measuring pasture now that the project is finished, come along to the Fabulous February Farm Walks (more details in the Dairy Diary at the end of this newsletter).

*The New Zealand research team did a number of simulations using different input systems. They have outlined their method, assumptions and results in their paper: 'Regular estimates of herbage mass can improve profitability of pasture-based dairy systems'. It was written by P C Beukes, S McCarthy, C M Wims, P Gregorini and A J Romera and was published online in Animal Production Science on 5 January 2018. It is available at [www.publish.csiro.au/AN/pdf/AN17166](http://www.publish.csiro.au/AN/pdf/AN17166).*

### Inside the newsletter

Quality silage makes more milk	02
Cool cows in warming weather	05
Does your pasture need renovating	06
The in calf challenge	06
DairyTas update	07
Dairy Diary	08



# Quality silage makes more milk

## **Sam Flight, TIA**

“A slight change to the amount of wastage can make a big difference to the overall cost of silage,” highlighted Macquarie Franklin’s Jason Lynch at the recent TopFodder Silage Field Day.

The field day was a follow-up to the two-day TopFodder workshop held in September last year and focussed on measuring silage quality and minimising wastage through correct storage and feedout.

Over thirty people attended the field day which was held on Midlothian at Parkham, a dairy farm managed by Ji and Katie Streets.

## **Results of homegrown silage study**

Ji Streets participated in a study of homegrown silage that was conducted on dairy farms around northern Tasmania, and the results from his feed tests formed the basis of discussion. Ji brought along samples from three batches of silage made on the farm, which were analysed alongside other samples from northern dairy farms collected by the TIA dairy extension team.

The results from these silage samples highlighted the relationship between metabolisable energy (ME) and neutral detergent fibre (NDF). When pasture

starts to develop seed heads, NDF increases and ME decreases, which results in a lower quality silage.

Two of the silage samples provided by Ji showed a significant difference due to stage of cutting. Sample number 13 (see Table 1 on page 4) was from a second-cut of silage, harvested when it was still in the green, leafy, vegetative phase. Sample number 12 was silage made from pasture which was cut when the seed head was already developing.

The one megajoule (MJ) difference between these two samples may not seem like much but it equates to 250 MJ per bale, which has the potential to produce 45 litres of milk. Multiply this by the number of bales made on your farm each year and it can make a big difference. And as Jason Lynch pointed out, “It costs as much to produce a poor bale of silage as it does a good bale of silage”.

## **The true cost of making silage**

The cost of making silage was another focus of discussion, and Jason Lynch demonstrated how to capture all expenditure involved. The cost of making silage is generally considered in relation to the purchase price, however there are ‘hidden costs’ in feedout and wastage that should be included to calculate the true cost of making

silage. The true cost can be compared with other supplementary feeds, and the value of boosting silage yields (using nitrogen, for example) can also be measured.

Table 2 (opposite) shows how to calculate the true cost of making silage.

## **Avoid silage wastage**

Perhaps the scariest number associated with silage (except maybe the bill for making it!) is the amount that can be lost through wastage at feedout. This can be up to 40%! When you think of the time, effort and cost of making silage, the thought of losing this much is concerning. But there are ways to minimise this wastage and maximise the amount that the cows consume.

## **Start with a quality feed**

Silage quality is more important than quantity. Jason Lynch said silage should capture surplus spring pasture and timing was everything. He said cutting higher quality pasture early in the season helped to preserve the most energy and crude protein, which would support the best milk response from cows and encourage the maximum amount of pasture regrowth.

Top tips: Producing quality feed

- Cut silage at 3 leaf grazing stage (or just after) before it goes reproductive.

**Table 2: How to calculate the true cost of your silage**

Parameter	Calculation	Answer
Mow, rake, bale, wrap (\$/bale)	a	
Transport (\$/bale)	b	
Feeding cost/bale (\$/bale)	c	
Cost/bale (\$/bale)	$d = (a + b + c)$	
Bale wet weight (kg)	e	
Dry matter (%)	f	
Dry matter/bale	$g = (e \times f)$	
Cost (c/kg DM)	$h = (d / g)$	
Energy value (MJ ME/kg DM)	i	
Adjusted cost (c/kg DM)*	$j = h / (i / 13)$	
Waste at feedout (%)	k	
Cost as fed (c/kg DM)	$l = (j / (1 - k))$	

\*Please note that the adjusted cost refers to the feed value of silage calibrated against the feed value of grain at 13 MJ ME/kg DM.

- Conserve within 24-48 hours and seal well to ensure a good fermentation and minimise the development of moulds.
- High quality palatable and sweet smelling feeds are usually cleaned up well. It isn't always possible but if you can, discard spoiled mouldy or poorly fermented silage.
- If using a mixer wagon to feed a Partial Mixed Ration (PMR) in the paddock and the feed is drier than 50-60%, consider the risk of feed wastage through losing the fine material. (For more information on this, please contact Sam Flight: samantha.flight@utas.edu.au).

### Top tips: Feeding infrastructure

Not everyone has a feed pad or feed troughs to feed out silage but if you do, or are thinking about it, here are some points to consider.

- Ensure feeders are an appropriate size to allow all of the feed to be reached and avoid feeders that make it easy for animals to back out.
- Feeders in very wet conditions can result in damaged pastures surrounding the feeder ring,

which adds to the total wastage (pasture + fodder).

- If troughs are used, aim to have their height at the natural grazing position of the cow, approximately 10-15cm above the ground

surface. Provide enough space per cow (at least 75cm/Friesian cow or belly width). More access is needed for restricted time periods vs 24 hour access.

- Smooth bottomed feed troughs make cleaning easier. If troughs are not cleaned out there can be a build-up of feed which eventually becomes mouldy, and this can impact on intakes.

### Top tips: Feed management

- Do not overfeed animals.
- Regularly clean feed surfaces where possible and remove residual feed.
- Avoid feeding out onto long pasture (although this may be a good option in very wet paddock conditions).
- If feeding out in the paddock, feed along fencelines or consider running an electric fence wire along the top of the windrow to reduce wastage from trampling and fouling.



## Table 1. Silage FeedTest Results

Test	1	2	3	4	5	6	7	8	9	10	11	12	13	2016-17 FeedTest average & range for grass/legume silage
Dry Matter (%)	60.5	49.9	50.7	53.9	44.7	46.5	59.8	57.8	52.5	45.5	41.5	43.9	62.0	47.4 (20.0-77.9)
Crude Protein (%)	17.9	11.8	11.0	9.7	17.7	12.3	9.6	18.4	12.3	17.4	11.2	15.4	19.3	12.5 (6.3-21.0)
NDF (%)	44.2	52.8	61.4	56.3	47.4	55.6	60.6	43.5	51.4	53.9	52.3	51.4	43.3	50.8 (34.2-72.2)
Digestibility (DMD, %)	77.7	73.7	61.9	68.7	79.3	67.0	64.2	75.6	74.0	71.5	73.2	74.8	81.7	69.0 (47.3-80.4)
ME (MJ/kgDM)	11.6	11.1	9.5	10.4	11.8	10.2	9.8	11.3	11.1	10.8	11.0	11.2	12.2	10.4 (7.5-12.0)
WSC (%)	17.0	18.4	8.6	17.5	12.6	8.1	13.8	12.8	17.5	6.6				
Fat (%)	3.5	2.9	3.0	2.8	3.5	2.9	2.7	3.5	3.1	3.5	3.0	3.3	3.8	
AFIA Grade	A2	A3	B3	A3	A2	A3	A3	A2	A3	A2	A3	A2	A1	

Silage samples were collected during January 2018 from silage made in spring 2017. All samples were from bales, either individually wrapped or sausage wrapped. Samples 1-10 were collected using a silage corer, samples 11-13 were grab samples from bales being fed-out. Testing was undertaken by Agrifood Technology's FeedTest Laboratory using NIR ([www.feedtest.com.au](http://www.feedtest.com.au)).

### Explanation of terms (from FeedTest)

**Dry Matter (DM)** refers to the amount of feed remaining after the water has been removed. Because the water content of feeds can vary considerably, all analyses are expressed on a dry matter basis and expressed as a percentage. (Target for baled silage is 40-50% DM).

**Crude Protein (CP)** Protein is composed of nitrogen, carbon, hydrogen, oxygen and sometimes sulphur or phosphorus. As protein contains nitrogen this is used to estimate the protein content of feeds. It is assumed that true protein has 16% nitrogen, so to calculate protein the found nitrogen content is multiplied by 6.25. However some portion of the nitrogen found is non protein nitrogen (ie. Nitrates, ammonia and urea) so this value is referred to as crude protein rather than true protein. Expressed as a percentage.

**Neutral Detergent Fibre (NDF)** So called after the method used to determine it, NDF describes the make up of the cell walls of a plant. It is the portion of fibre composed of hemicellulose, cellulose, lignin, silica, tannins and cutins. NDF is related to feed bulk and can be used in ration formulation to predict forage intake and quality. Forages lower in NDF are usually of high quality and have high levels of intake. NDF is reported as a percentage.

**Water Soluble Carbohydrates (WSC)** is a measure of the total soluble sugars which are present in a forage. These sugars include glucose, fructose, sucrose and fructans. They are almost completely digestible.

**Digestibility of Dry Matter (DMD)** is the percentage of the feed dry matter actually digested by the animal. It is estimated by using a laboratory method which is standardised against DDM values from feeding trials. High quality feeds have a DDM of over 65%, whilst feeds below 55% DDM are of poor quality and will not maintain liveweight even if stock have free access to it.

**Metabolisable Energy (ME)** is the feed energy actually used by the animal and is expressed as megajoules per kilogram of dry matter (MJ/kg DM). It involves the measurement of energy excreted in faeces, urine and exhaled as methane. This requires very specialised and expensive equipment and is conducted at only a very few locations around the world. In Australia, ME cannot be measured by a laboratory and is instead predicted from other tests, most accurately from digestibility.

**AFIA (Australian Fodder Industry Association) Grade** is the national grading system for fodder ([www.afia.org.au](http://www.afia.org.au)).



# Cool cows in warming weather

**Claire Baker, Research  
Communications Officer, TIA**

A warming climate could mean dairy cows will have to be kept cool with shade, sprinklers and fans if future milk production and quality are to be maintained.

Janine Chang-Fung-Martel, a PhD candidate at the Tasmanian Institute of Agriculture (TIA), is investigating strategies that will help farmers and their herds prepare for heatwaves, shifting rainfall patterns, and extreme weather events.

“A changing and variable climate is an ongoing challenge for dairy farmers, and there is often a direct link between climatic conditions, and milk production and quality,” Ms Chang-Fung-Martel said.

The 3-year research project is exploring both short and long-term recommendations to help dairy farmers prepare for and manage climatic challenges. The research topic is important because an increase in average temperature of only one degree by 2030 is estimated to reduce current milk production in Australia between four and ten percent per cow.

Ms Chang-Fung-Martel said strategies to manage a warming climate included an alternate and more resistant forage base, changing infrastructure

to ensure shade, feeding and milking when temperatures are cooler in the early morning or evening, and genetic breeding for heat stress resilience in cows.

“We are likely to see a return of more trees in paddocks to provide natural shade, and increasing infrastructure to provide cooling. For example, fans and sprinklers are already used in Australia to keep animals cool and are becoming more common, although they do have associated energy costs which need to be factored in,” she said.

“Managing the impact from hot weather, and regulating livestock temperatures means farmers can more accurately predict milk production levels. This is essential for financial sustainability of the farm.”

Ms Chang-Fung-Martel said her research considered dairy as a whole farming system and aimed to provide dairy farmers with a point of reference to help them make informed decisions.

“My research is looking at a range of factors including past climate, climatic projections, farming practices and economic factors. The interactions between these factors are very important for making informed decisions about dairy farming,” she said.

“The aim of my research is to help dairy farmers be prepared to

“The aim of my research is to help dairy farmers be prepared to effectively deal with changing climatic conditions and improve the resilience of whole-farm systems”.

effectively deal with changing climatic conditions and improve the resilience of whole-farm systems.

“I am investigating the tactical strategies that farmers are already using, and assessing other strategies that could help manage impact of extreme events such as heatwaves.”

The project is funded by Dairy Australia and the Australian Government Department of Agriculture Fisheries and Forestry as part of its Carbon Farming Futures Filling the Research Gap Program.

Ms Chang-Fung-Martel's recent publication *The impact of extreme climatic events on pasture-based dairy systems* is available online at <http://www.publish.csiro.au/cp/CP16394>.

*This article was published in The Advocate/Examiner on Thursday 8 February 2018.*



Symon Jones  
Dairy Extension Officer  
Tasmanian Institute of Agriculture

Pasture Health – Checking Plant Density | TIA Dairy Team

44 views



Tasmanian Institute of Agriculture  
Published on Jan 21, 2018

SUBSCRIBE 223

Healthy pasture is essential for animal farming, but do you know when your pasture needs renovating? TIA's Symon Jones explains how to check plant density.

Category Science & Technology

## Does your pasture need renovating?

The TIA Dairy extension team have produced a short video to help with the decision of whether a pasture needs renovating. Search for “TIA pasture health check” to find a link to the video. Watch the video to hear Symon Jones give some practical tips on what to look at when making a decision on whether to renovate or not. Then all we need is some rain!

*This video was produced as part of the Dairy on PAR project funded by Dairy Australia and TIA.*

## The in calf challenge

### Prepare for next season this summer

Grant Rogers, Dairy Systems Ltd, BVSc

Summer is in full swing, production is dropping and now it's time to start thinking about next season.

#### Young stock

It's easy to take your eye off the ball here and undo all the good work to date. It's critical to monitor the growth of young stock.

Calves are often weaned on target but forgotten about and they can slip quickly.

Rising two year olds can be even more at risk – if they fall behind now, they risk calving below weight and body condition score (BCS), leading them to fall out of the herd in their first lactation.

#### Pregnancy

Ensuring cows are pregnancy tested at the right time by an experienced operator is critical.

Six week in-calf rates drive not only next year's production, but these cows

have a much higher chance of getting back in calf. Knowing when cows are going to calve will effect decisions around drying cows off and allows early culling of cows if feed becomes limiting.

#### BCS

Alongside calving early, BCS is the key driver of reproductive performance and managing BCS is a year-round game. Low BCS cows will give you, your staff, and your bank account a hard time in the long run. Assess where your herd is now or get professional help and make a plan to ensure they reach target.

A common reason that cows fail to reach BCS targets is not lack of feed – it's lack of time to gain enough condition. Look closely at all factors, including:

- early dry off of all or part of the herd
- once-a-day milking (3 in 2 option)
- using various feed input and grazing off strategies to make an informed decision.

Whatever you choose, it is of paramount importance that those cows are at BCS target 5 at calving (and 5.5 for first and second calvers).



# DairyTas update

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



Your Levy at Work

## What is happening at DairyTas?

We have quickly found ourselves in February 2018! This year we will be bringing you plenty of training opportunities to help you and your business.

### Workforce planning sessions

Penny Williams is running workforce planning sessions at state-wide locations for our Dairy Farm Discussion Groups. Learn about retaining staff, changes to the pastoral award, trainees and apprentices, and drug and alcohol policies. *See the enclosed flyer for more information.*

### Nutrition fundamentals workshop

A nutrition fundamentals workshop will be piloted in Deloraine at the end of the month. At this new two-day course you will learn the basics of dairy cow nutrition and what you can do to help improve the nutritional intake of your herd. *See the enclosed flyer for more information.*

### Entries open for dairy industry awards

Entries are now open for a number of dairy industry awards which will be presented at the Tasmanian Dairy Awards dinner following the Tasmanian Dairy Conference in March. Awards available:

- Mondelez Young Farmer Encouragement Award
- Moon Lake Investments Farm Safety Award

- Veolia Dairy Farm Environmental Award
- WFI Employer of Choice Award

A cash prize and plaque are on offer for each award. Entry forms are available on the DairyTas website.

### Focus Farm Open Day

Another date holder for March is the first Focus Farm Open Day for 2018. The theme of the day is "BYO Team".

### Tasmanian Dairy Conference 15 March

With the theme, "Doing more with less" this year's conference will be one not to miss!

Venue: Country Club Casino, Launceston

Why not make the conference your March minibreak and join our special events:

- Pre-conference tour, 14 March
- Official awards dinner, evening of 15 March

*See the enclosed flyer for more information.*

Bring along your own farm team so you can all hear how David and Jane's team work together to achieve great results. Farms that bring along their teams will go in the draw to win a prize pack. *See the enclosed flyer for more information.*

### Taking Stock visit on offer

With continuing dry weather, now is a good time to have a Taking Stock visit from an experienced consultant. This free, confidential, half-day farm visit will open up space for you to discuss the challenges that your business faces and jointly develop a plan. If you are interested in completing a Taking Stock visit please contact the DairyTas office.

***All the best in the New Year and we look forward to seeing you at the 2018 events.***

The flyer features a background image of a herd of cows in a field. At the top right, it includes the DairyTas and Dairy Australia logos with the tagline "Your Levy at Work". The main text reads: "Tasmanian dairy conference and awards dinner", "14-15 March 2018", and "Launceston Country Club". At the bottom, there are logos for Rex James, Roberts, and ANZ.

# DAIRY DIARY 2018

## February

**7 Feb:** Dairy On PAR combined NW and Yolla/Wynyard Discussion Group meeting with John Mulvany. Jordan Palmer's, 683 Montumana Road, Montumana, 11-2. Lunch kindly provided by Yolla Co-Op. (TIA)

**7&8 Feb:** Cups On Cups Off, Smithton (TasTAFE)

**8 Feb:** Dairy On PAR combined Devonport and Central North Discussion Group meeting with John Mulvany, Grant & Kim Archer's, 91 Bracknell Road, Bracknell, 11-2. Lunch kindly supplied by Roberts. (TIA)

**12 Feb:** Workforce on our Dairy Farms Discussion Group with Penny Williams, Bushy Park (DairyTas)

**13-15 Feb:** Australian Dairy Conference, Melbourne

**14 Feb:** North East Farm Safety Night, Scottsdale

**14 Feb:** Circular Head Legendairy Ladies group meeting, Wynyard (DairyTas)

**15&16 Feb:** Chainsaws, Smithton (TasTAFE)

**19 Feb:** Workforce on our Dairy Farms Discussion Group with Penny Williams, North East (DairyTas)

**19 & 20 Feb:** Dairy Sage Mentoring workshop, Launceston (DairyTas)

**20 Feb:** Dairy On PAR Fabulous February Farm Walk, Popowski's. Giddens Road, Smithton, 11-1. Lunch provided. Followed by NW discussion group meeting focussing on silage quality and feedout, 1:30-2:30. (TIA)

**21 Feb:** Dairy On PAR Fabulous February Farm Walk, Currajong (meet at dairy), 11-1. Lunch provided. (TIA)

**22 Feb:** Dairy On PAR Fabulous February Farm Walk, Stuart & Karen Burr's, 791 New River Road, Ringarooma, 11-1. Lunch provided. Followed by NE discussion group meeting focussing on options for extending the dairy, 1:30-2:30. (TIA)

**23 Feb:** Dairy On PAR Fabulous February Farm Walk, Janefield, 545 Meander Road, Meander. 11-1. Lunch provided. (TIA)

## March

**1 Mar:** Smarter Irrigation Field Day, Cressy (TIA)

**1 Mar:** Financial Literacy for Dairy Farmers course commences, Deloraine. Day 1 of 7. (TasTAFE)

**5 Mar:** Workforce on our Dairy Farms Discussion Group with Penny Williams, Cuprona (DairyTas)

**6 Mar:** Workforce on our Dairy Farms Discussion Group with Penny Williams, Cressy (DairyTas)

**7 Mar:** Focus Farm Open Day "BYO Team", Montagu (DairyTas)

**14 Mar:** Tasmanian Pre-Conference Tour, North East Region (DairyTas)

**15 Mar:** Tasmanian Dairy Conference and Dinner, Launceston Country Club Casino (DairyTas)

**21 & 22 Mar:** Pasture Management Workshop, Deloraine TasTAFE (TIA)

**21 & 22 Mar:** Financial Literacy for Dairy Farmers course, Deloraine. Days 2 & 3 of 7. (TasTAFE)

**27 Mar:** Workforce on our Dairy Farms Discussion Group with Penny Williams, Togari (DairyTas)

**28 Mar:** Share Dairy Farmer of the Year Award Field day, winners property (TIA)

**28 & 29 Mar:** Financial Literacy for Dairy Farmers course, Deloraine. Days 4 & 5 of 7.

**29 Mar:** Workforce on our Dairy Farms Discussion Group with Penny Williams, Christmas Hills (DairyTas)

## 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](mailto:tas.dairynews@utas.edu.au).

Electronic copies of this newsletter are available at [www.utas.edu.au/tia/dairy](http://www.utas.edu.au/tia/dairy).



Your Levy at Work



DairyTas (03) 6432 2233

TasTAFE 1300 655 307

TIA (03) 6430 4953

Agritas (03) 6415 4100



TIA is a joint venture of the University of Tasmania and the Tasmanian Government



@TasInAg  
@TIADairy



TasInAg

## DISCLAIMER

While the Tasmanian Institute of Agriculture (TIA) takes reasonable steps to ensure that the information in its publications is correct, it provides no warranty or guarantee that information is accurate, complete or up-to-date. TIA will not be liable for any loss, damage, cost or expense incurred or arising by reason of any person using or relying on the information contained in this publication. No person should act on the basis of the contents of this publication without first obtaining specific, independent, professional advice. TIA and contributors to this publication may identify products by proprietary or trade names to help readers identify particular types of products. We do not endorse or recommend the products of any manufacturer referred to. Other products may perform as well or better than the products of the manufacturer referred to.