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## DIARY DATES

**WEDNESDAY 8<sup>th</sup> and THURSDAY 9<sup>th</sup> SEPTEMBER 2010**  
DAIRY RESEARCH FOUNDATION SYMPOSIUM

DAIRY RESEARCH FOUNDATION COUNCIL MEETING IN OCTOBER -  
*DATE TO BE CONFIRMED*

## DIRECTORS' UPDATE

Welcome to the second edition of the 2010 DRF Newsletter!

We are getting very excited with preparations of our 2010 Dairy Research Foundation Symposium to be held at Camden Campus on 8<sup>th</sup> and 9<sup>th</sup> September!

Following the success of the **WA Dairy Innovations day** in May this year we'd like to keep looking into 'Dairying in the Future' but with a special emphasis on cows' (and farmers!) health. We are bringing over four international speakers from Ireland, Canada and New Zealand; and of course as usual, have plenty of professional and farmers speakers from Australia. Please take a look inside to find more details about the speakers and the topics.

Please have a look inside to find updates on FutureDairy 2 research activities and new and existing postgraduate projects, and also the new collaboration between different units within the Faculty.

Enjoy it and remember we always welcome your feedback!



*Assoc. Prof. Yani Garcia Director of the DRF*



*Mr. Bill Inglis President of the DRF*

## From the PRESIDENT

An issue concerning me has been the low level of farmer **membership of the DRF**.

It may seem that there is no need for a farmer to become a member; after all research results are available to all, as is the ability to attend the DRF Symposium and receive this excellent newsletter!

It may be that the real benefit then is the sense of being part of, and of contributing to, a Research Foundation that keeps delivering great results to the Australian Dairy Industry.

Dairy Farmer input is also vital for the day to day running of the DRF and the Symposium. It is also important that we have a strong farmer resource to draw on.

**FARMER HEALTH - is this an issue on your farm?**

*The most important factor yet the most commonly overlooked: a dynamic exercise for those interested in assessing their health status and what to do about it!*

The National Centre for Farmer Health has joined the Dairy Research Foundation this year in bringing **FREE HEALTH CHECKS** to all interested symposium participants.

These health checks are completely **optional** but results are most accurate when the testing is done early in the day after **fasting overnight**.

This will take place on the morning of **Thursday 9th September (Day 2)** and afterwards you will be provided with **breakfast**.

The results of our group will be compared to the nationwide average for the farming community and reported on later in the day.

#### **SYMPOSIUM FIELD VISIT**

Visit **Camden Park** at Camden, NSW. Revive the origin of Agriculture in Australia. Camden Park is part of the historical site started by John and Elizabeth Macarthur in the 18<sup>th</sup> century.

**John Stanham** and **Dr Ian Lean** will speak about the dairy operation.

# **2010 SYMPOSIUM**

**8th and 9th September 2010  
Camden, NSW**

**Don't miss this upcoming event!**

**DAIRYING: A HEALTHY OBSESSION?**

*Improving the fitness of our cows, farms and farmers*

**Registration Form - page 17**

**or register online:**

[\*\*2010 Registration Form\*\*](#)

#### **LETS TAKE A LOOK AT OUR INTERNATIONAL SPEAKERS**

**Prof Tim McAllister**, Agriculture and Agri-Food Canada, Lethbridge Research Centre . *Tim will draw from his expertise in rumen microbiology to talk about the different strategies to achieve high milk yields and reduce the carbon footprint, including manipulation of diets, feeding systems, and additives and their practical consequences for farmers.*

**Dr John Roche**, Dairy NZ. *John will take from his outstanding research career and international experience to talk about hot topics such as responses to supplementary feeds in grazing systems; optimal body condition score for milk production, fertility, and health; and regulation of intake in pasture-based systems.*

**Prof Michael Doherty**, University College Dublin .*Michael will use research and commercial farm data to explain the impact of production diseases like acidosis, milk fever, ketosis on milk production in the Irish pasture-based systems.*

**Dr Charlotte Westwood**, PGG Wrightson, NZ. *Charlotte has worked in Australia and NZ and will look into the effect of forage quality on cows' intake and the impact of pasture and forage systems on cows' intake and production.*

## Symposium Highlights include:

- ..# Ways to reduce carbon emissions
- ..# Impact of milk fever, acidosis and ketosis on production
- ..# Free, on-the-spot health check for participants
- ..# Farmer insights – reproduction, complementary forages and more
- ..# Speakers include researchers, farmers and advisers
- ..# Farm visit to Camden Park Estate
- ..# Welcome by the Dean of the Faculty of Veterinary Science, Dr Rosanne Taylor
- ..# Introductory talk by Dairy Australia Managing Director, Mr Ian Halliday

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## What does the program look like?

### Wednesday 8th September

Session 1: Healthy forages	Speaker
Optimising feed intake in pasture based systems: how can we get the most out of pasture?	<b>Dr Charlotte Westwood</b> PGG Wrightson, NZ
Where are the feeding systems heading to in Australia?	<b>Dr Neil Moss</b> SBScibus, Australia
Future Dairy Complementary Forage Systems: the Hunter Valley Project	<b>Ms Kerry Kempton and Ms Anthea Lisle</b> I&I NSW
Session 2: Healthy herds	
Increasing nutrition and reproduction efficiency in high producing dairy cows: feeding for production or for body condition?	<b>Dr John Roche</b> Dairy NZ
Where is the reproduction going in NSW? An insight into the real situation of reproduction management and problems in large herds in NSW	<b>Mr Matt Izzo</b> University of Sydney
Key drivers of reproductive efficiency	<b>Mr Joe Chittick and sons</b> NSW dairy farmers
Session 3: Young Scientists	
5 minute presentations by 8 young dairy scientists	

### Thursday 9th September

Session 4: Healthy farming systems	Speaker
Sustainable nutritional management of the modern dairy cow: strategies to mitigate green house gases on farm	<b>Prof. Tim McAllister</b> Agriculture and Agri-Food Canada
Prepartum transition diets on production and health in dairy cows	<b>Dr Ian Lean</b> SBScibus, Australia
Farming for a healthy future	<b>Ms Lynne Strong</b> NSW Dairy Farmer
Session 5: Healthy cows	
Recent advances in the management of production disease in dairy cows	<b>Prof. Michael Doherty</b> University College Dublin
From research into practice: is the cows' health worsening?	<b>Ms Alison Gunn</b> University of Sydney
How to grow a healthy business: from 45 to 800 cows	<b>Victor Rodwell</b> WA Dairy Farmer
Session 6: Healthy farmers	
On the spot health checks Results and discussion	<b>Nation Centre for Farmer Health</b>
Session 7: Farm visit	
Visit <b>Camden Park Estate</b> , one of the oldest working dairy farms in Australia	



*Dr Kendra Kerrisk,  
Innovations Leader for  
FutureDairy*

FutureDairy  
Google Group

People interested in joining the AMS discussion group should send a request for registration to the by email to Darold Klindworth or Kendra Kerrisk at the following email addresses.

[darold.klindworth@dpi.vic.gov.au](mailto:darold.klindworth@dpi.vic.gov.au)

[kendrad@usyd.edu.au](mailto:kendrad@usyd.edu.au)

# FUTUREDAIRY UPDATE

## PRECISION FARMING

### RESEARCH/PROJECT UPDATE

The AMS research farm has been busy over the past period with intensive testing and trialling focussed around the new prototype AMS.

The prototype is targeted to milk in excess of 240 cows (compared to 70-80 cows per robot for the current AMS technology).

It is anticipated that the new prototype will still be based on voluntary cow traffic with milkings distributed throughout the 24-hour period.

Recent trialling has been focussed around throughput potential, capability of the technology and reliability of performance.

It is anticipated that a small number of pilot installations will be installed on commercial farms in Australia in mid 2011 which will represent the first phase of commercialisation.

*For more information contact Dr Kendra Kerrisk, FutureDairy  
Kendra.kerrisk@sydney.edu.au.*

### AMS NEWS

The FutureDairy Management Guidelines for Pasture-Based AMS Farms have now been released and are available at [www.futuredairy.com.au](http://www.futuredairy.com.au).

The document is the only comprehensive set of guidelines that is tailored to help farmers contemplating or embarking on adopting AMS into their grazing system to ensure that they have appropriate expectations and/or are successful with their new endeavour. The guidelines have received great feedback from farmers, industry representatives, project investors and from international interests.

## AMS NEWS (cont)

They have helped to prove the high profile of the project and the calibre of the research being carried out in the FutureDairy project.

The FutureDairy team has recently been involved in an industry level review that is being carried out to identify areas within the industry in which regulations and compliance require attention to ensure that the industry is equipped to cope with the surging interest in AMS.

This review will identify any areas (within the areas of State Food Authority Standards, Dairy Company supplier arrangements, Occupational Health and Safety, Animal Health and Welfare and Environmental factors) in which attention is required to ensure that AMS can be adopted on farm whilst continuing to comply with regulations and requirements.

Precision Dairy 2010 was a combined meeting of The First North American Conference on Precision Dairy Management and The Second North American Conference on Robotic Milking. The conference was held in Toronto, Canada in March and was attended by Dr Kendra Kerrisk. Attendance allowed Kendra to network with world leaders in the AMS research field, and ensured that the FutureDairy team is well informed of current technology available and being tested in the Precision Dairy area.

## NEW IRRIGATION SYSTEM TO BE INSTALLED AT WESTWOOD

A brand new Lateral Irrigation System is being commissioned at Westwood farm.

The upgrade was done with a grant of ~\$0.24m from the Smart Farms program, which aims to increase the efficiency of use of water in the Nepean-Hawkesbury Catchment. The new system replaces old traveller-irrigators and will allow an efficient irrigation of 32 ha used to produce forage for the dairy farm at Corstorphine.



*Rural Properties Manager Steve Burgun and Farms Manager Kim McKean investigate irrigator*



# FEEDBASE

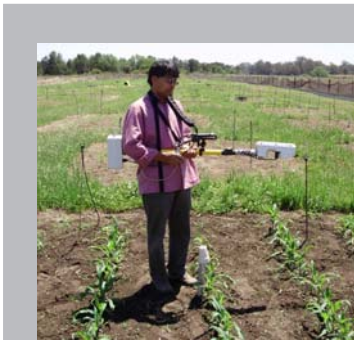
## USING NITROGEN TO PREDICT YIELD AND WUE!

Previously FutureDairy showed that improved technology such as Greenseeker can be used to diagnose nitrogen (N) deficiency of forage maize and to estimate their qualitative and quantitative yield, and water use efficiency.

However, Greenseeker can be used for research purposes but has limited practical applications.

Therefore, FutureDairy is investigating an alternative plant-based measurement technique.

To develop a plant-based indicator to estimate N



*Dr Rafiq Islam using a Greenseeker to collect NDVI readings for maize on Mayfarm*

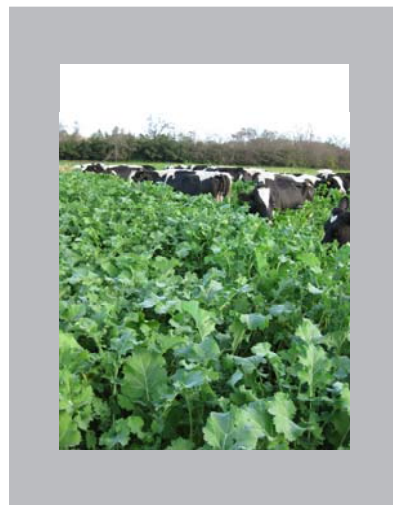
requirement and yield of forage maize, maize plants were collected on eight different plant leaf stages starting from 2 leaf stages until harvest.

These maize plants were grown with different levels of

N fertiliser ranging from 0 to 300 kg/ha. We found that at N concentration (%) of maize plant at 8 leaf stage (V8) can predict total biomass yield at harvest (Figure 1a), rates of N fertiliser to be applied to obtain such yield (Figure 1b), metabolisable energy yield per ha (Figure 1c) and water use efficiency (Figure 1d).

The accuracy of such estimation of yield, N fertiliser requirement and water used efficiency based on N concentration (%) was similar to that obtained by Greenseeker.

Therefore, assessment of N concentration of forage maize at 8 leaf stages may help farmers to decide on how much N fertiliser needed to be applied to grow hybrid forage maize to achieve their yield goal and to maximise water use efficiency.



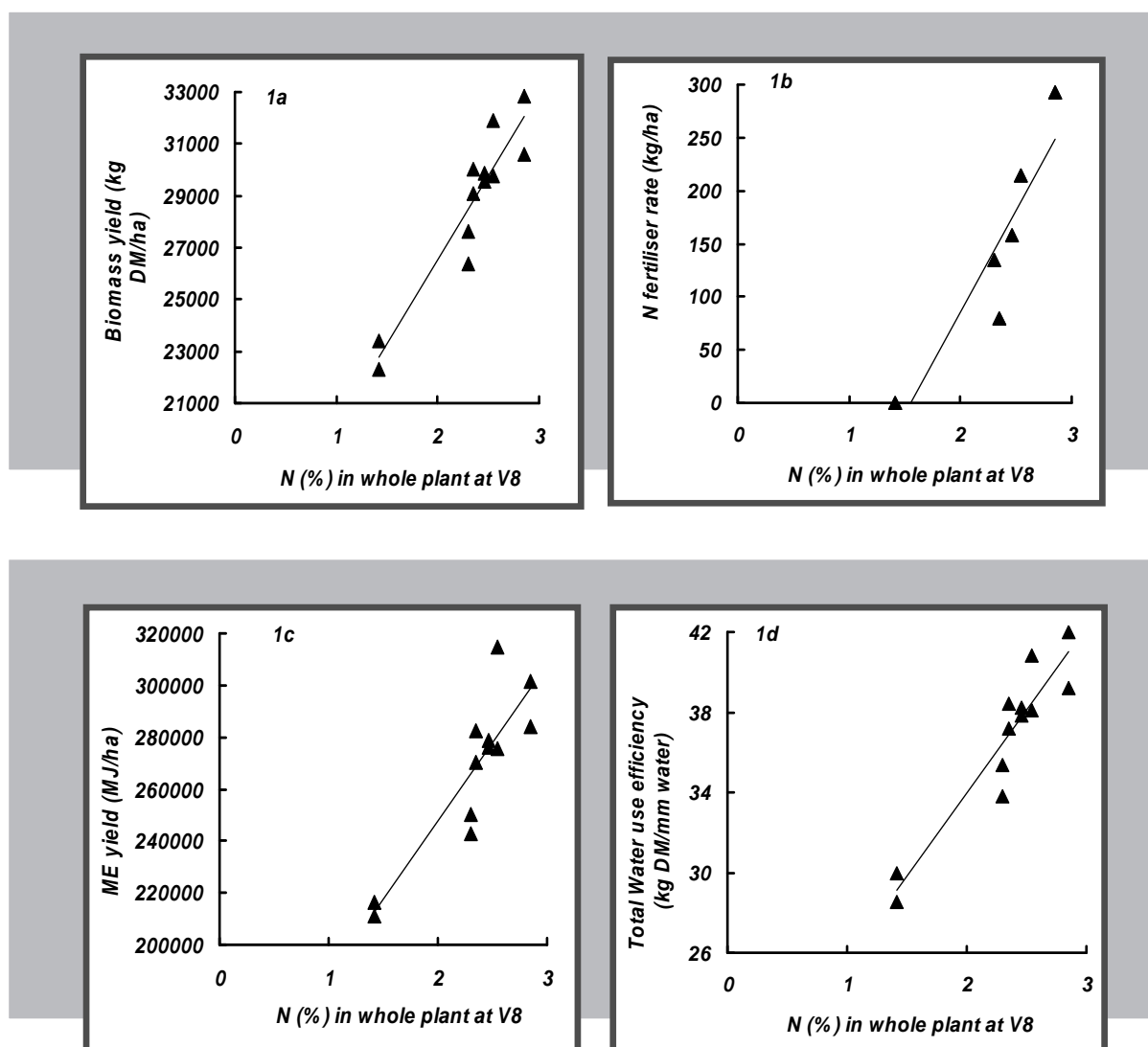


Figure 1. N concentration (%) of whole maize plant at 8 leaf stage (V8) can estimate: 1a) total biomass yield (kg DM/ha;  $R^2 = 0.88$ ), 1b) rates of N fertiliser (kg/ha;  $R^2 = 0.83$ ), 1c) ME yield per ha (MJ/ha;  $R^2 = 0.78$ ), and 1d) total water use efficiency (kg DM/mm water;  $R^2 = 0.88$ ) of hybrid forage maize

## MORE FORAGE, LESS RISK

The Complementary Forage System (CFS) whole farm study at Corstorphine dairy (University of Sydney) has achieved over 28,000L/ha of milk from ~25 t DM/ha of home-grown feed over 2 consecutive years. Based on these actual field results, a modelling analysis was carried out to evaluate the business risk of the system.

The analysis involved two aspects of risk:

**Climate risk:** impact of rainfall (100 years data) on pasture and forage crops yield, assuming limited irrigation (4 ML/ha).

**Price risk:** historical variation (15 years) of price of milk, concentrates, urea and water.

## More forage, less risk (cont)

With irrigation capped at 4 ML/ha on each year, pasture yield showed a clear sensitivity to variable rainfall (triangle symbols in Figure 1). The forage crop yields (square symbols), on the other hand, tended to be independent of rainfall variation, maintaining a similar yield level across years in which total rainfall ranged from 300 to 1500mm. This was due to the higher water use efficiency (t DM/ML water) of the forage crops, particularly maize, which allowed the CFS to achieve higher yields during dry years where pasture production dropped drastically. The message is clear: if water availability is limited, forage crops are a more efficient way of using that water.

When assessing the impact of risk on farm operating profit, the CFS was compared to another farm system based on the same area of land and number of cows which achieved the same milk production per ha but combining pasture with increased concentrates (2.2 t/cow).

All sources of risk (year to year variations in climate and price of milk, price of fertilizer and price of concentrate) were considered simultaneously. The summarized results were as follow:

1. The probability of not achieving a profit was 62% higher (26% v. 16%) for the farm using more concentrate in comparison to the CFS.
2. Similarly, the probability of achieving an operating profit greater than \$2,500 AU/ha (an arbitrary target) was 27% higher (33% v. 26%) for the CFS than the concentrate-based system.

As expected, variations in milk price had the greatest impact on profitability. However,

the robustness of the CFS farming system was because climate variability was the 2<sup>nd</sup> factor of impact on farm operating profit.

By diversifying the forage base combining pasture and forage crop rotations, the CFS was able to lower the impact of climate variability on forage yield (due to better water use efficiency as shown in Figure 1) and therefore profit. This climate variability had a greater effect on the pasture plus concentrate system, which was also subject to volatility in concentrate price.

*For further information contact Santiago Fariña at [santiago.farina@sydney.edu.au](mailto:santiago.farina@sydney.edu.au)*

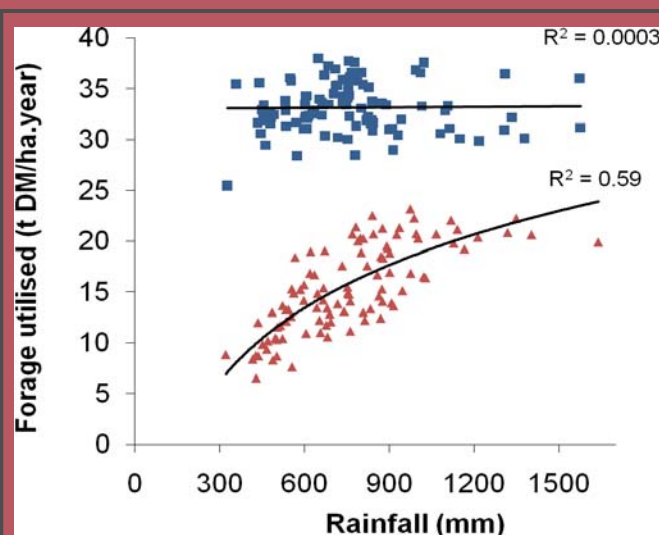


Figure 1. Effect of rainfall on yield of CFS forage crops (■) or pasture (▲).



## Latest news on cow preference trials



*Dr Ajantha Horadagoda amongst the trial plots at Mayfarm, and below some of the forage brassicas included in the trials*



## FEEDBASE

### LATEST NEWS ON COW PREFERENCE TRIALS

A recent experiment undertaken by Dr Ajantha Horadagoda found that dairy cows prefer forage rape, turnips and fodder radish in that order, when given a choice.

The trial was sown in early autumn at 6kg/ha for Winfred forage rape, 15kg/ha for Hunter leafy turnips and 15kg/ha for Grazer fodder radish. Ryegrass-white clover pasture was used as a control.

Ten dry Holstein Friesian cows were used for the preference trial and they were selected for having equal dominance. This was important to ensure real competition for the preferred forages.

The actual test area was a large circle with the cows having equal access from the middle to all forages however, before each test the cows were grazed on strip of each forage to be tested so they would be familiar with each.

Six weeks after sowing, the plots were affected by drought. The turnips were the most affected by the moisture stress followed by the radish, and the forage rape coped the best.

White cabbage butterfly infested the turnip but not the radish or the forage rape.

After the Ryegrass-white clover the cows preferred the forage rape and at times they preferred the forage rape to the ryegrass. The next preferred were the turnips and the least preferred forage was the fodder radish.

However, the individual preferences were variable with 6 cows preferring the forage rape, 3 cows liked turnips and 1 cow preferred the fodder radish.

All fodders had high moisture content (90, 91 and 92 % moisture for the forage rape, turnip and radish) and all 3 crops had greater crude protein content than pasture (27.5% v 22.5%, respectively).

# THE HUNTER VALLEY PROJECT



## Wyvern Park Dairy

Dairy farmer Ross McDarmont and farm manager Tim Freeman from Wyvern Park Dairy are applying FutureDairy Complementary Forage Systems (CFS) concepts and principles to increase home grown feed.

Wyvern Park is one six Hunter Valley dairy farms that are working in collaboration with FutureDairy and with support from Industry and Investment NSW dairy officers Anthea Lisle and Kerry Kempton.

Ross and Tim have identified increasing milk from home grown feed as their main goal - aim to produce 30,000L/ha with ~65% of milk from home grown (HG) feed (in 2008/2009 they achieved 24,000L/ha, 55% from HG feed). Forage planning through Future Dairy showed the potential impact of concentrating on the CFS area of 18ha, with plans for 25tDM/ha from maize and 7tDM/ha from annual ryegrass. They decided to try some brassica rather than oats in order to boost the quality of the early autumn feed. The first grazing of the leafy-turnip type brassica yielded 2.3 tDM/ha and the crop has been grazed twice already.

In the 18 ha of the cropping area they achieved an actual yield of Maize of 21 t DM/ha, and the potential for brassica and annual ryegrass is about 10-12 t DM/ha, giving a total of 31-33 tDM/ha. Essentially, they are increasing L/ha overall, as well as milk from Home grown feed, through a combination of increased production per cow (higher digestibility ration year round) and increased forage yield (DM/ha).

All the six farms had full financial analysis done in July last year, and have since been tracked for cash flow, feed costs and feed efficiency on a monthly basis. Wyvern Park Dairy is located in the Upper Hunter near Denman. The other two farmers participating in the project from this area are Ian Simpson and Dave Butler.



Hunter Valley dairy farmers George Allen, Ross McDarmont and Ian Simpson looking at a leafy turnip and annual ryegrass crop sown at Wyvern Park dairy



Leafy turnip sown with annual ryegrass at Wyvern Park Dairy



Industry & Investment NSW dairy officer Anthea Lisle and dairy farmer Ian Simpson



*Masters student  
Daniel Dickeson*

## **Daniel Dickeson**

Daniel Dickeson is in the final stages of writing up his Masters in Veterinary Science thesis.

The title of the thesis is; The quantification into the effects of inaccurate pasture allocation in a pasture based automatic milking system.

Daniel expects the thesis to be completed for submission by August 2010.

## **Michael Campbell**

The component research trial being conducted at Tatura in Nth. Victorian is progressing well.

The trial is a preliminary investigation into the use of Forage Brassica and grazing Wheat to fill the Autumn feed gap compared to the traditional use of Ryegrass and Persian clover.

The main aim of this trial is to develop protocols and skills needed to conduct further research at Tatura over the coming years. The first cut of the forages will occur in mid June.

The proposed on-farm monitoring aspect of the project is being developed in conjunction with Murray Dairy. It is hoped to find some farmers to co-operate with FutureDairy to enable different feedbase systems to be analysed and provide some commercial proof of how different forage options suit different dairy enterprises and drive profitability.

## **Santiago Farina**

I am now in the final stages of the writing of my thesis. Lately I've been working on the business risk of the Complementary Forage System.

This includes an analysis of the impact of variability of climate (100 years) and prices of inputs and outputs on the operating profit of a whole farm implementing the CFS.

In a nutshell, we've found that, in comparison to other intensification alternatives, the CFS's use of alternative forages helps to reduce the impact of years with reduced rainfall and also reduces the exposure to bought-in feed price volatility.

Last month I was invited to speak at the Dairy Innovation Day 2010 organized by Western Dairy. It was a great opportunity to meet the very keen and proactive dairy farmers of Western Australia, and discuss with them the potential application of my work in their region.



*PhD student  
Michael Campbell*



*PhD student Santiago Farina  
recently spoke at the Dairy  
Innovation Day 2010 in WA*



## NEW PHD STUDENT JOINS THE DAIRY SCIENCE GROUP



*New PhD student  
Anas Almakhzoomi*

Want to know  
the latest in  
research being  
conducted by  
Dairy Science  
Students in  
Australia?

Hear them present  
their findings at the

**2010 DRF  
Symposium  
8th - 9th  
September  
Camden, NSW**

### **Anas Almakhzoomi**

Hello, some of you may already know me or have seen me at Camden campus, but I would like to formally introduce myself. My name is Anas Almakhzoomi.

I grew up in a small village near Irbid (the bride of the north) and the biggest city in the northern part of Jordan. In 2000, I have completed my undergraduate (BSc) in Veterinary Medicine in Jordan. Between the year 2000 and 2004 I joining the army in Jordan as a nutritionist officer. In 2004, I got the opportunity to do my Master's in Sweden.

I have completed my Masters in Veterinary Medicine at the Swedish university for agricultural sciences (SLU). My project was on the fertility of the progeny tested-Swedish AI bulls by a microscopic examination of the morphological characteristics of the sperms. It was very interesting to find a correlation between the field fertility of those bulls and the abnormal morphological aspects of their sperms .Since that time I developed an interest in reproduction.

In 2006 I got married and since then my wife and I have migrated to Australia. We initially resided in Sydney but then moved to Adelaide. Now, we are back settled in Sydney.

In 2009 I was granted citizenship and became an Aussie!

We now have two little angels and are enjoying our time with them. We're both learning the Aussie accent from our son who was born here in Sydney.

I've come to learn about the fertility challenges that are confronting the dairy industry in Australia and I have also thought it will be very interesting to expand my knowledge about dairy fertility.

In April 2010, I started my PhD project in Dairy Cattle Reproduction within the CRC for Innovative Dairy products under the supervision of Dr. Pietro Celi. My project will be investigating the infertility in the Australian dairy cattle using different approaches to reduce it.

## MASTERS STUDENTS JOIN THE DAIRY SCIENCE GROUP



New Masters student  
Rene Kolbach

### **Rene Kolbach**

René Kolbach first joined the FutureDairy team for a 10 week traineeship in 2008. He has now returned to our team after graduating from HAS Den Bosch (University of Applied Science) in Holland.

René will spend the next two years carrying out a Masters by research with his area of interest being focussed in the AMS and precision farming area of the FutureDairy project.



New Masters student  
Nicolas Lyons

### **Nicolas Lyons**

Nicolas has arrived and settled from Argentina and has embarked on a two year Masters by research.

His research area will be the system management around AMS with a likely focus on incentive management.

The learning's from Nicolas' work will ensure that we are well positioned to support the industry with regard to options around system layout and management ensuring that farmers have the highest possibility of succeeding with their "new way of farming".



New Masters student  
Helen Golder

### **Helen Golder**

I have commenced a Masters in Veterinary Science at The University of Sydney, funded by Dairy Australia and employment with the livestock research and consultancy

firm, *SBScibus*, in March this year.

My project aims to explore the links between acidosis and lameness (laminitis) in dairy herds, through evaluating the effect of feeding grain, sugar, histidine and rumen modifiers on rumen fermentation products of heifers experimentally induced with acidosis.

Traditionally, grain over feeding has been viewed as the major cause of acidosis; however, we have proposed that the fructose (sugar) and histidine (amino acid) content of pastures may also be contributing to the onset of acidosis. We are particularly interested in the role of histamine and have so far produced results that aid the understanding of the onset of acidosis and may assist in the detection and prevention of acidosis in the future. We aim to investigate the changes in the rumen microbial community under these feeding conditions to further improve our understanding of acidosis.



## VISITORS TO CAMDEN



In June we will have an occupational trainee from France coming to work with us for 2 months.

**Florence Vessieres** is a Vet student at the **Ecole Nationale Vétérinaire de Toulouse (ENVT)** and will be here to increase her skills in the development and execution of research activities. Supervisor: Pietro Celi ([pietro.celi@sydney.edu.au](mailto:pietro.celi@sydney.edu.au)).

Over the past months the Dairy Science group has hosted many groups from overseas including Government officials from China, researchers and extensionists from Pakistan. We have also had visits from individuals from many areas around the globe.



### Bas Peters

Bas has recently joined the FutureDairy team from **HAS Den Bosch (University of Applied Science)** in Holland. Bas is doing a 10 week traineeship with FutureDairy and is involved in the Automatic Milking aspect of the project. Bas' previous experience has involved working with chickens, cows and sows in Holland.

He has experience with DeLaval and Lely robots and has worked on 30 different dairy farms and 20 sow and chicken farms as a casual relief staff for farmers requiring temporary employees. Bas is fitting in with the team well and is proving to be extremely motivated and keen for experience!!



For further information please  
contact us on 02 9351 1631  
or by emailing us at [vetdrf@usyd.edu.au](mailto:vetdrf@usyd.edu.au)

# FACULTY OF VET SCIENCE COLLABORATES TO CREATE NEW DAIRY GROUP



*Livestock Veterinary Teaching and Research Unit Director John House (left)*



*University of Sydney vet Matt Izzo*



*University of Sydney Vet Alison Gunn*

Researchers with the Faculty of Veterinary Science have joined forces to form the **Sydney Dairy Science Group**. In this issue we feature some of the participants.

## **Livestock Veterinary Teaching and Research Unit**

The **Livestock Veterinary Teaching and Research Unit** provides clinical and consultancy services to livestock producers and the pharmaceutical industries, education to veterinary students, veterinary postgraduate training programs and specialist referral services to the veterinary profession.

**Dr John House** (Unit director) heads up a team of 6 veterinarians; **Alison Gunn, Francis Sabbe, Matt Izzo, Jennie Mohler** and **Shahab Ranjbar** and the Unit operates seven days per week, 365 days per year.

## **Current Research Projects**

*Efficacy of DNA Adenine Methylase Salmonella Vaccines In Livestock* (Jennie Mohler and John House)

This project is developing and testing the efficacy of a salmonella vaccine that will protect against multiple strains of salmonella which commonly affect dairy cattle. Currently there is only one vaccine available in Australia, and it only protects against a limited number of strains. It is hoped that the vaccine we develop will protect against multiple strains and be effective in calves and adult cattle

*Prevalence of Lameness in Central NSW* (Shahab Ranjbar, John House & Alison Gunn)

Aim : To demonstrate the main causes of lameness in both pasture based and housed dairy cattle in NSW, determine the most effective treatment for several common conditions and develop cost effective methods for managing lame cows:

*Australian Dairy Calf Scours Project* (Matt Izzo, John House and Alison Gunn)

Funded by Intervet Schering Plough Animal Health. Survey of causes of Neonatal Calf Scours in dairy and dairy beef herds across all states of Australia. Project is completed with several papers submitted. We are hoping that this knowledge can be used to improve control programs for scours and provide guidance on best practice diagnosis.



### **Dr Simon de Graaf**

Projects :

#### ***Production of pre-sexed calves following AI or IVF with sexed sperm***

- o Increasing the fertility of sexed bull semen to enable regular use in both heifers and lactating cows
- o Integrating the use of sexed semen with Oocyte pick-up to produce pre-sexed embryos for transfer

#### ***Use of seminal plasma proteins as markers of bull fertility***

- o Traditional methods of semen analysis have poor correlation with fertility. Establishing the identity of seminal plasma proteins in bulls of proven fertility will increase the accuracy of in vitro prediction of fertility. Isolation and purification of seminal plasma proteins proven to be beneficial to sperm survival will enhance the fertility of all semen



### **Paul Sheehy**

#### ***Investigation of the role of bovine mammary stem cells in the lactation cycle.***

**Funded by:** Dairy Australia & The University of Sydney, Faculty of Veterinary Science.

**Researchers:** Mr Sebastian Bowman, Prof Herman Raadsma, Dr Paul Sheehy.

**Aim:** To investigate the potential of bovine mammary stem cell populations to alter the lactation cycle of the dairy cow with the

view of enhancing lactational persistence.

**Expected outcomes and potential benefit for the dairy industry:** Insight into the cellular dynamics of the bovine mammary gland regulating lactation persistence and lactational efficiency.

#### ***Development of Mycoplasma bovis molecular diagnostic tests and investigation of the incidence of Mycoplasma in eastern Australia dairy herds.***

**Funded by:** Geoffrey Gardiner Dairy Foundation Ltd

**Researchers:** Assoc Prof John House, Dr Katrina Bosward, Dr Paul Sheehy, Ms Alison Gunn

**Aim:** The objective of this project is to develop a rapid inexpensive diagnostic test to manage the risk posed by this organism and determine the prevalence of Mycoplasma in eastern Australia dairy herds.

**Expected outcomes and potential benefit for the dairy industry:** The development of a rapid, economical diagnostic test that can be utilized to screen bulk tank milk samples will provide a tool for ongoing monitoring of this disease in the Australian dairy herd. The test will also provide a more efficient means of identifying infected cows in affected herds to facilitate control and eradication.

# DAIRYING: A HEALTHY OBSESSION

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## Dairy Research Foundation 2010 Symposium

Liz Kernohan Conference Centre, Werombi Rd, Camden NSW

### REGISTRATION FORM

Registration Options		Price
<b>Earlybird Full Registration</b> (register on or before 6th August 2010)		
	Standard	370.00
	Dairy Producer	240.00
	DRF Member	240.00
	Student	160.00
<b>Full Registration</b> (register after 6th August 2010)		
	Standard	420.00
	Dairy Producer	290.00
	DRF Member	290.00
	Student	200.00
Full Registration includes Conference Dinner, all sessions, morning/afternoon teas and lunches for both days		
<b>One Day Symposium</b> (either day)		
	Standard	200.00
	Dairy Producer	160.00
	DRF Member	160.00
	Student	160.00
<b>One day registration does not include the conference dinner</b>		
Foundation Dinner Only    x    _____ people		90.00

Please turn over to complete registrant details, detach and post to Dairy Research Foundation, PMB 4003, Narellan NSW, 2567



## REGISTRATION DETAILS

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### Registrant 1

Name

Address

Phone

E-mail

Please indicate if you'd like to participate in the FREE Health Check on Day 2 and staying for farm visit on the afternoon of Day 2

Health Check YES / NO

Farm visit YES/NO

### Registrant 2

Name

Address

Phone

E-mail

Please indicate if you'd like to participate in the FREE Health Check on Day 2 and staying for farm visit on the afternoon of Day 2

Health Check YES / NO

Farm visit YES/NO

Emergency Contact (name and number) Phone

**Method of Payment:**  Cheque  Credit Card

*Please make all cheques payable to 'University of Sydney'*

Name on Card

Credit Card No.

Expiry Date

Amount \$

Signature

Please fax form to 02 4655 2374 or post to PMB 4003, Narellan NSW 2567



# THE IMPORTANCE OF DAIRY RESEARCH

The Foundation serves a unique role within Australia's dairy industry by integrating research programs at the cutting edge of dairy science and production with extension activities to disseminate this information among dairy farmers nation wide.

The commercial competitiveness of our dairy producers relies heavily on the establishment of new technologies for managing and feeding cows to maximise productivity within our Australian environment. These programs would not be possible without the close co-operation and generous financial support of both dairy producers and corporate sponsors.

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## Dairy Research Foundation *Membership*

<b>Membership Category</b>	<b>Fee (including GST)</b>
Producer/Farmer	\$60.00
Small Business	\$275.00
Associate	\$825.00
Member	\$1,760.00
Company	\$3,520.00
Governor	\$5,280.00

*For further information please contact us on 02 9351 1631  
Or go to the website*

***[www.vetsci.usyd.edu.au/foundations/drif](http://www.vetsci.usyd.edu.au/foundations/drif)***

## We need your help!

### Home-grown feed-base survey

Please help us to help you! If you haven't completed this Feedbase survey yet please download it from [www.futuredairy.com](http://www.futuredairy.com) and post it to:

**Assoc. Prof. Yani Garcia, FutureDairy - MC Franklin Lab  
Private Mail Bag 4003, Narellan 2570, NSW – Australia**

The survey is very easy to fill and will only take a few minutes of your time. Your name is optional and results from NSW farms will be part of a student research project.



## September 2010

Sun	Mon	Tue	Wed	Thu	Fri	Sat
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

### DAIRY RESEARCH FOUNDATION

FOR MORE INFORMATION CONTACT

T +61 2 4655 0631

F +61 2 4655 2374

E [vetdrf@sydney.edu.au](mailto:vetdrf@sydney.edu.au)

[WWW.VETSCI.EDU.AU/FOUNDATIONS/DRF](http://WWW.VETSCI.EDU.AU/FOUNDATIONS/DRF)

