



## **Inquiry into Australia's international research collaborations**

### **Dairy Australia Submission**

Dairy Australia has a number of deep and growing international research collaborations that assist it in achieving its target outcomes, strategically and as efficiently and effectively as possible.

Several years ago the Dairy Australia board formally endorsed nine guiding principles for its operations. One of these explicitly indicates that it will seek the best partners anywhere in the world to obtain its outcomes. This recognises we are a small proportion of relevant world R&D and often do not have the resources to cover all the areas of importance to the industry. This means collaboration for specific contract work, but also more enduring partnerships where information and technology transfer are necessary. This formal recognition by Dairy Australia has caused a change in skill base in some areas from focussed program/projects to develop stronger collaboration and negotiation skills... and a higher travel and communication budget.

#### **1. The nature and extent of existing international research collaborations.**

Some examples include:

- MOU and Research Contract with NIZO Food in the Netherlands. NIZO is an ex government research arm and is now one of the largest food research organisations in the world. Dairy Australia has a formal MOU supporting structured and regular communication sharing on trends, issues and research underway, as well as standardised contracts for specific work. Dairy Australia is now contracting its fifth joint project with NIZO in the area of quality and sustainability in milk processing - particularly minimising energy use.
- Joint Projects and Research with INRA France on milk powder quality and energy efficiency
- Deep knowledge transfer and sharing with Moorepark Facility in Ireland and its affiliate, the University College Cork. These relationships, again, not only focus on specific joint work but in rapid technology transfer to allow both sides to be “fast followers” of each other’s work
- Similar strategic arrangements with DairyNZ - New Zealand’s peak Dairy Industry Research funder and manager – our equivalent organisation. This includes some participation and involvement in the dairy industries national RDE strategy (Dairy Moving Forward) that has been endorsed by PISC/ PIMC
- Research Projects and Secondments:
  - Reading University UK
  - Cornell University US
  - Wageningen University Netherlands

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- For example Dr Mark Stephensen of Cornell University has just returned to Cornell (December 09) after being seconded to model the logistics of the Australian dairy supply chain from farm to consumer to facilitate a whole of chain view and its optimisation
- Human Clinical Research trials with Dairy Management Incorporated (US) and Dairy Farmers of Canada.
- Global Dairy Platform:
  - Participate in Milk Fat Research Group
  - Action Group on Trans Fatty Acids
- Member of Utrecht Group (Private Dairy Nutrition Group) presenting new Dairy science. Members – Canada, France, US, , NZ, AUS, Ireland, Denmark, Sweden, Belgium, UK, Finland, the Netherlands and Germany.
- Most of the prior examples focus on post farm gate international collaborations. There is equivalent depth on pre farm gate (i.e farming related) Research Development and Extension. Again these range in mechanism from ongoing relationships to expert transfers, contracts through to the recent DairyLive event where there was real-time interactive videoconferencing and webcasting from international experts in Europe and South America to hundreds of Australian farmers spread across the country. More examples of international research collaboration pre farm gate are included in Appendix 1: – Pre-farmgate International Collaboration – Dairy Australia.

## **2. The benefits to Australia from engaging in international research collaborations.**

- Currency – our people aware and able to access research overseas in a timely fashion. In dairy we are 2% of worldwide dairy production and we need to access the RDE developed by the other 98% of world production
- Leverage – making money go further when addressing specific topics i.e accessing other researchers and pools of funding through them.
- Better research – increased credibility and testing (i.e nutrition aspects on multiple and different populations).
- Better science – encourages high standards in our researchers, and gives us access to the best research needed. This also provides a technology transfer capability
- Access to complementary capabilities – human and physical infrastructure
- Increased R&D outcomes for all parties – through Open Innovation which has been shown to increase total research productivity.

## **3. The key drivers of international research collaboration at the government, institutional and researcher levels.**

The key driver for Dairy Australia primarily is having a clear, strategic, agreed and holistic view of research needs and outcomes for the industry. This enables a structured approach to see how this can best be delivered with limited resources. This is complemented by:

- Decline in dairy research in Australia, including CSIRO
- Leverage with European Researchers and companies
- Common research requirements and outcomes - especially on Farm Productivity, Sustainability along the value chain, and Human Health & Nutrition.

#### **4. The impediments faced by Australian researchers when initiating and participating in international research collaborations and practical measures for addressing these.**

From Dairy Australia's view there are few structural impediments, as most entities are keen to explore and develop collaborations with our organisations and researchers. The issues to address to enable and encourage this are:

- Have a strategic view of the needs
- Have a culture that encourages collaboration, and skills to support it
- Be prepared to invest upfront in dollars and time to enable it to occur

It should be noted that there is often a need to adapt technologies to the Australian context, particularly in pre farm gate area. This is a natural part of the process and not a structural impediment as such.

An example of this the DeLaval Automated milking research being undertaken at Camden which seeks to adapt a milking system Australian context – and free up human labour from one of the less attractive and time consuming farm tasks. In the European context cows are barn raised and fed or kept in small fields, but in the Australian largely pasture based system cows have to walk of their own volition an extended distance to be milked. Hence adaption of the technology to Australia requires a different approach and research into animal psychology, farm layout, and farm management practices.

#### **5. Principles and strategies for supporting international research engagement.**

Identifying our needs and focussing on how best to obtain them and through which mechanisms i.e. relationships of various forms, program, contracts and often a combination of all the above. Establishing key relationships on an organisational and personal basis often underpins the success of other engagements and achieving outcomes

Working in cooperation with other Food & Agriculture bodies i.e.

- International Dairy Federation (IDF) - Brussels
- DMI – US – Dairy Industry Services Body – The American equivalent to ourselves
- DairyNZ – New Zealand– the closest New Zealand Equivalent to ourselves – with a focussed R&D mandate
- Dairy UK – United Kingdom – the closest British English equivalent to ourselves
- NZO – Holland – One of the pre-eminent food research centres in the world and which would be well informed through their linkages to other entities
- European Dairy Products Association
- Global Dairy Platform – An international grouping of many the major dairy stakeholders from both the commercial and not for profit sectors.

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Field Code Changed

## Appendix 1 –Pre-farm gate International Collaboration - Dairy Australia

Prof John McNamara	Professor in Animal Science, Washington State University, USA	Ongoing collaboration re animal physiology and modelling, including current sabbatical leave in Australia and NZ (partially funded by DA). In Australia, collaboration around ruminant nutrition modelling and experimental design (Ellinbank Research Institute MoU between DPIV and DA)
Dr Fernando Bargo	<ul style="list-style-type: none"> <li>• Associate Professor in Dairy Science at the University of Buenos Aires, Argentina, and</li> <li>• Elanco Animal Health, Argentina</li> </ul>	Ongoing collaboration re animal nutrition and Feed conversion efficiency. Participated in the E Learning concept (DairyLive) initiated by Dairy Australia December 2009. Visiting expert with Large Supplier Engagement Strategy, Dairy Australia (Feb 2010)
Dr David Beever	International Nutrition Director, Richard Keenan & Co, Ireland	Ongoing collaboration re animal nutrition and Feed conversion efficiency. Participated in the E Learning concept (DairyLive) initiated by Dairy Australia December 2009.
Prof Mike Allan	Distinguished Professor, Michigan State University, USA	Ongoing collaboration re ruminant nutrition. Visiting Fellow (Winter 2009) with Dairy Australia; engaging leading service providers in Ruminant Nutrition
Dr Hugh Jellie	Veterinary consultant, 'DairyConcepts', New Zealand	Ruminant nutrition and large herds management. Particular expertise around Large Herd Management and Animal Welfare.
Dr Robert Collier	University of Arizona, USA	Ongoing collaboration re managing heat stress and ruminant physiology and nutrition. Visiting Dairy Australia and contributing to Heat Stress program and strategy February 2010
Dr Steve Butler	Moorepark Dairy Production Research Centre, Irish Agriculture and Food Development Authority, Ireland	Dairy reproduction; DairySA and Dairy Futures CRC interactions. Leading international speaker; attending Dairy Innovation Strategy in 2010 (Dairy SA)
Peter Fennessy	Managing Director, AbacusBio, New Zealand	Worlds best practice in agricultural technology and biotechnology. Consultant to Dairy Australia plant breeding strategies and investments; Dairy Australia led Australia and NZ Cooperative Leaders Forum keynote speaker (2009).
DairyNZ	DairyNZ, New Zealand	Memorandum of Understanding, investment in common projects, information sharing, strategy development
DeLaval International	DeLaval International, Sweden	Automatic Milking Systems development. Co-investment and co-development of cutting edge technologies and systems around Automatic Milking Systems

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Livestock Emissions and Abatement  
Research Network (27 countries in  
international network)

International collaboration to improve understanding of greenhouse gas emissions from  
livestock and develop cost effective abatement solutions

