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### New UK-IDF Chair



Dr Judith Bryans, Director of The Dairy Council, declared that she was “delighted” at her appointment this month as the new Chair of UK-IDF.

Judith already has representation at a senior level within IDF as the person responsible for nutrition on IDF’s Science and Programme Coordination Committee (SPCC), the body responsible for the supervision of IDF’s work programme – see *below*. Prior to this, she chaired the Standing Committee on Nutrition and Health from May 2008 until October 2011.

Judith stated that “there is a lot of work to be done within IDF to ensure the benefits of dairy foods and of dairy farming are recognised by regulators, NGOs, scientists and the public. UK-IDF members make a substantial contribution to the work of the IDF and one of the things I am looking forward to doing as Chair of UK-IDF is increasing its visibility and showcasing the benefits of its work programme to the industry.”

### SPCC Appointments

Following the elections that took place at the IDF’s General Assembly in Parma, three members of UK-IDF’s Management Board have been appointed onto IDF’s prestigious Science and Programme Coordination Committee (SPCC).



**Dr Judith Bryans** has been nominated as the representative for nutrition, ex-DairyCo Board member, and former UK-IDF Chair, **David Homer** (*left*), for the dairy sector farming position and environment consultant, and former head of Research and Development and Knowledge Transfer at DairyCo, **Brian Lindsay** (*right*) for environment. All three were recent Chairs of IDF Standing Committees and are keen to extend their participation at a senior level with IDF activities.



## IDF Appointments



**Nico van Belzen** has been appointed as the new IDF Director General with effect from May 1<sup>st</sup>.

Mr van Belzen has worked for the past 8 years as the Executive Director of ILSI Europe, a non-profit organisation dealing with life science, and he replaces Christian Robert, who has served in the role since June 2005.

He already has experience of the dairy industry, having being involved for five years in the areas of R&D management, product development, marketing support, food safety and strategy development before joining ILSI. Whilst at ILSI, he represented them in business relations with intergovernmental organisations such as EFSA, WHO, Codex

Alimentarius, FAO and others, so he has developed an extensive network of contacts with scientists, academia, government and industry,

There have also been two appointments at IDF Head Office with **Henriette Christiansen** replacing Oscar Chavez as Office Manager and **Laurence Rycken** taking over from Sandra Tuijelaars as Nutrition Officer. Henriette comes to the IDF from a similar position at the Danish Agricultural Council in Brussels and Laurence is a graduate of Biomedical Science, specialising in Nutrition and Dietetics

We give a warm welcome to all three of our new colleagues and also send our best wishes to Christian, Oscar and Sandra in their new positions.

## 2011 – A year of enhanced collaboration

Collaboration was the underlying theme for the IDF during 2011 as it continued to work closely with a number of other international organisations. Examples of the achievements during the year are:

- In collaboration with **FAO**, the IDF has produced an updated version of the Guide to Good Dairy Farming Practice, advising dairy farmers how to develop sustainable management systems, covering key aspects such as animal health, milk hygiene, nutrition, welfare and the environment. This publication is free and is available [here](#)
- In collaboration with **CNIEL and Productschap Zuivel** (as well as **TetraPak, Saputo and Crédit Agricole** through the Partnership Campaign), the IDF has produced the World Dairy Situation 2011 – the flagship publication of the IDF illustrating trends in milk production and consumption, the production, trade and prices for dairy products, producer milk prices and information on the situation in all the major milk producing countries showing the main processors, production, trade and key developments over the past year. This indispensable publication has 225 pages and costs €125. Copies can be ordered from the UK-IDF office.
- Collaboration with **Saputo, TetraPak, Crédit Agricole, Danisco, Bentley, Bayer and DeLaval** through the Partnership campaign.
- In collaboration with **FAO and IFCN**, the IDF is working on a project looking at the World Mapping of Animal Feeding Systems in the Dairy Sector to examine the impact of feeding modifications on existing systems, animal health and welfare and milk production before formulating its recommendations for the global dairy sector.
- In collaboration with **OIE**, IDF has provided scientific technical assistance for the forthcoming development of standards for animal welfare in dairy cattle production systems.
- In collaboration with **WHO**, IDF has contributed to the latest Joint FAO/WHO Expert Consultation on Fats and Fatty Acids in Human Nutrition.
- In collaboration with FAO and the Dairy Group of the **Sustainable Agriculture Initiative (SAI)** to produce IDF Bulletin 445/2010 – A common carbon footprint approach for dairy - The IDF guide to standard lifecycle assessment methodology for the dairy sector. Copies of this are free and can be downloaded [here](#).

In addition, IDF continues to work closely together with many other organisations, including:

- **Codex** to develop international food standards to protect the health of consumers and to ensure fair trade.
- **The Eastern and Southern Africa Dairy Association (ESADA) and FEPALE (the Pan-American Dairy Federation)** in connection with the Global Dairy Agenda for Action and reinforcing links to these continents.
- **IFAF (the International Feed Industry Federation) and FEFAC (the European Feed Manufacturers' Federation)** in relation to food safety work relating to animal feeding and the world mapping of animal feeding systems.
- **The Global Dairy Platform (GDP)** to enhance the image of milk and milk products globally.
- **The International Farm Comparison Network (IFCN)** to examine the different costs of milk production around the world.
- **OIE (the International Organisation for Standardisation)** to produce joint IDF/ISO analytical standards.
- **The European Dairy Association (EDA)** in relation to communicating the latest research findings with regard to nutrition and health.
- **ILSI Europe** (the European Branch of the International Life Sciences Institute) to co-ordinate activities related to probiotics and prebiotics  
and
- **ICAR** (the International Committee for Animal Recording) for the establishment of an international Reference System for Somatic Cell Counting.

#### **IDF Membership situation**

Both Hungary (Full Member) and Slovakia (Associate Member) have announced their resignations from IDF but Uruguay was welcomed as a new Associate Member during the General Assembly on October 15<sup>th</sup>. This means that IDF is currently represented in 56 countries across the world covering 85% of global milk production.

#### **IDF World Dairy Summit – Parma 15 – 19 October 2011**

Ensuring dairy food security, and doing it in a sustainable way, is a significant challenge for the dairy sector and the 2011 World Dairy Summit examined how this could be achieved with more than 1,200 delegates meeting to address this vital topic from a number of different perspectives along the dairy supply chain.

The theme of collaboration was reinforced during the Summit as five of the conferences were held with the technical co-operation of the Food and Agriculture Organisation of the United Nations (FAO), to consider how the industry's environmental impact could be reduced whilst increasing production to feed not only the 7 billion people that are currently on the planet but also the further 2 billion that are expected by 2050.

Over the past decade milk and dairy production has increased significantly on a global level but this growth has been even more pronounced in developing countries where production has more than doubled over the past 30 years and (according to OECD and FAO projections) is expected to continue to grow by around 30% in the next 10 years.

Together with the demand for more food, the dairy sector also has to address social, environmental and economic challenges, such as climate change, bioenergy, the spread of animal diseases, animal-related human health risks, food safety emergencies and increased concerns about the ethical issues related to livestock production and this can only be achieved through collaboration amongst all stakeholders in the supply chain. This collaboration was reflected during the Summit by the five joint conferences that were held with FAO as well as IDF's on-going participation with other major industry partners to deliver the Global Dairy Agenda for Action, the industry's outstanding initiative to promote the sector's commitment to addressing climate change.

This newsletters feature contributions from UK-IDF representatives on the meetings and conferences they attended as the industry addressed these crucial challenges.

IDF has adopted the SWIFT (**S**peedy, **W**orldwide visible, **I**mpactful, **F**ocused and **T**ransparent) approach as the driver for the further development of the organisation and the second annual SWIFT session examined how the component parts have combined to ensure that the organisation continues to deliver timely outcomes that meet expectations and the changing needs of IDF membership.

IDF President Richard Doyle explained that the speedy delivery and worldwide visibility have been enhanced by the further development of IDF's internet and intranet sites and there are now five microsites to support the main site enabling people to find the information they require as quickly as possible.

- <http://www.fil-idf.org/> for the IDF homepage to find out about the work of the organisation, including working areas, events, publications and the press room
- <http://www.idfdairynutrition.org/> for information on milk and milk products and their role in nutrition and health
- <http://www.dairy-sustainability-initiative.org/> highlighting the industry's commitment to making a positive contribution to the global action in addressing climate change
- [www.idfdairylaboratories.org](http://www.idfdairylaboratories.org/) for a searchable database of more than 100 dairy laboratories from 39 countries that provide analysis on milk and milk products
- <http://www.idf-lca-guide.org/> to support the IDF publication 'A Common Carbon Footprint Approach for Dairy: The IDF Guide to Standard Lifecycle Assessment Methodology for the Dairy Sector', which introduces a common methodology for assessing carbon footprint across the global dairy industry sector, and
- [www.dairyfeedingsystems.org](http://www.dairyfeedingsystems.org) in support of the on-going work towards the identification of different animal feeding systems applied in the dairy sector worldwide. The final report on this work will be available in 2012.

IDF has also been looking at its approach to issues management and how it can co-ordinate the relevant messages to be delivered locally, regionally or globally if immediate action is required. In order to achieve this, each Standing Committee has been asked to initiate, identify and prioritise the emerging issues/trends within their field and prepare appropriate responses that can be communicated by an identified expert as the issue develops.

Claus Heggum, Chair of the IDF Science and Programme Coordination Committee, ended the session with an overview of the future direction of IDF work and he highlighted the following topics:

- **Climate Change** (CC) strategy will concentrate on establishing the CC reference point, setting the standards for measuring CC performance, applying feasible solutions to reduce impact and expanding the Life Cycle Assessment methodology in terms of water, biodiversity and (possibly) waste.
- Three factsheets will be produced demonstrating the **Benefits of Dairying**, namely:
  - The Economic Importance of Dairying
  - Milk Production as the Key Driver for Sustainable Rural Development, and
  - The Nutritional Importance of Dairying.
- **Sustainability in dairy farming**, including
  - The world mapping of different animal systems used worldwide
  - Inventory of analytical methods for feed related changes in milk, and
  - Impact of feeding modifications
- **Issues / crisis management** work will include:
  - The IDF proposal for Codex guidelines for managing food emergency situations in relation to international trade, and
  - An FAO/WHO Guide for food recall during food safety emergencies and incidents
- **Food Safety** will focus on the integrated control of veterinary drugs in the dairy chain and the strategies for the detection of antibiotic residues in milk. A stakeholder survey will also be conducted and might include model food safety legislation, revision of the Codex HACCP system and nanotechnology.

➤ **Nutrition and health focus will be on:**

- The setting up of a speaker network on dairy fats and the preparation of scientific dossiers on various dairy fat issues
- A scientific update on the importance of dairy in children's diet as background for the development of tools for use by health professionals
- Dairy nutrition and environmental sustainability to strengthen the case supporting the essential role of milk and dairy products as part of a healthy diet despite the higher environmental costs than other plant-based commodities
- Legislation claims, especially those relating to sugar, salt and *trans* fatty acids as well as the definition of *trans* fatty acids.

**Global Dairy Roundtable on Supply Chain Issues – 16th October**

**Ian Wakeling – UK-IDF Secretary**

Prominent representatives of the dairy supply chain from around the world were invited to share their views on the needs, expectations and obstacles that consumers, processors, farmers, suppliers and distributors have to manage in order to determine how all links in the chain could best work together to achieve a more sustainable dairy industry worldwide.

The recurring themes during the roundtable were **population growth, climate change, price volatility and how to achieve a better balance of the world's resources** to eliminate malnutrition and obesity. Mark Blake of DeLaval said that "change is one of the few constants in business today".

One of the figures that was repeated throughout the Summit was that the global population is experiencing rapid growth, forecast to rise from 7 billion currently to reach 9 billion by 2050, and this presents a serious challenge in managing the world's land and water resources to achieve the 70% increase in food production that is required to feed everyone.

One example that was given to demonstrate that the industry is taking action to face the challenge is the recent commitment from the World Bank to increase its support for agriculture. On average, it invests \$4-billion a year in agriculture, with \$6-billion earmarked for 2011, and plans to increase this further to \$8-billion in the future.

Tim High of Tetra Pak said that it would be much easier to overcome this challenge with the **elimination of waste**. He added that currently 1.3 billion tonnes of food is thrown away and illustrated this by saying that, if a consumer in the developed world bought three bags of shopping, the equivalent of one bag would be thrown out. This situation is not helped by the trend towards "buy one get one free" offers where the consumer purchases more than they need in the expectation of using it but, quite often, the extra food is just put in the bin. Another method to help achieve the reduction of waste would be the implementation of more local solutions to collect and distribute unwanted food. He mentioned that in certain parts of China milk reaches the carton within 30 minutes of milking and the company is continually endeavouring to reduce waste.

Deepak Tikku of the National Dairy Development Board in India highlighted the **environmental concerns** and the carbon cost of dairy products that are relatively rich in fat compared to plant based alternatives.

Hilde Vanwalleghem, of the Dalhaize Group in Belgium, outlined the **retailer's perspective**, suggesting that retailers are not the villains of the piece they are often perceived to be. She said that her company wants to offer healthy, nutritious products and to reduce its energy consumption by 30% by 2020. She added that their aims are stability (in terms of volume, quality and price) and being able to achieve the levels of innovation and flexibility that are needed to meet their customers demands.

The company started a long-term collaboration in 2010 with Milcobel, a cooperative representing one third of Belgian producers, to support local, sustainable milk production. It began sourcing one specific milk product (semi-skimmed AA label) at a fixed price through the cooperative to ensure a better return for the producers, enable re-investment in local production and give added value to the consumer.

Another topic that recurred throughout the Roundtable was the need to not only educate consumers about agriculture and nutrition but also to find out from them what they want from their products and what they are prepared to pay to ensure a sustainable supply chain. Wes Judd, the immediate Past President of Australian Dairy Farmers, said that it was vital to have discussion all along the supply chain and the debate must be quick and show commitment but also give the various links the time to adapt to changing needs.

After a healthy debate, the main conclusions of the Roundtable were:

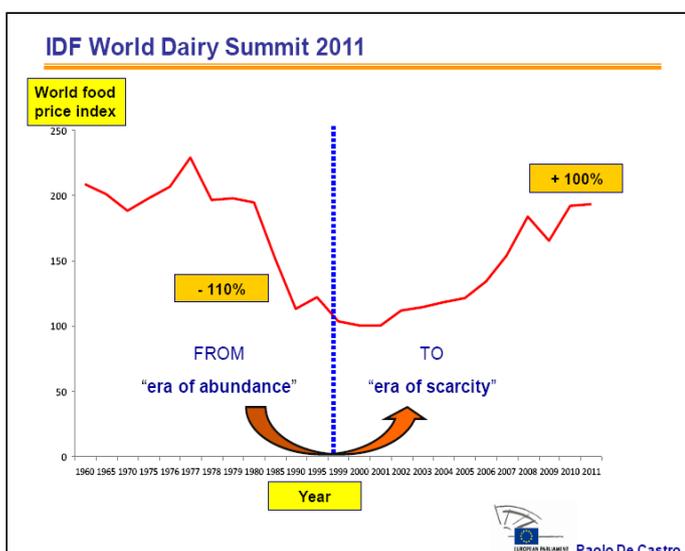
- All links of the supply chain must work hard to operate as efficiently as possible with the optimum uses of land and water and less waste
- The industry must commit investment
- The industry must continue to deliver innovative products
- The imbalance of consumption must be addressed by looking at dietary changes and the removal of excess, sugar, fat and salt from the diet
- There must be collaboration along the supply chain and dialogue with consumers. CEO's should take the lead, demonstrating their company's commitment to make changes not only over the short term but also for the long term good. Investment in new plant may be expensive in the short term but it will provide benefit for many years.
- The private and public sectors must work together.

### IDF World Dairy Leaders Forum – 16th October

*Ian Wakeling – UK-IDF Secretary*

A lot of the themes covered in the Global Dairy Roundtable on Supply Chain Issues were replicated during the World Dairy Leaders Forum.

The extreme changes in the **World Food Price Index** were demonstrated by Paolo De Castro of the European Parliament showing that between 1960 and 1999 the Index fell by 110% but then has subsequently recovered by 100% as the world moved from an era of abundance to one of scarcity.



Demand is growing at a rate of 2% per annum, driven by markets such as India China and Brazil. The changes in consumption patterns with the expansion of the middle classes (with more sophisticated tastes) and the replacement of rice and wheat by milk and dairy means that the industry is facing different challenges.

Potential solutions may be:

- More research and innovation (reversing the trend of public spending)
- Changing the rules on international trade (rethinking the WTO)
- Improving risk management tools (rethinking agricultural policy around the world)
- Improving international co-ordination on food security (towards a new global food policy)

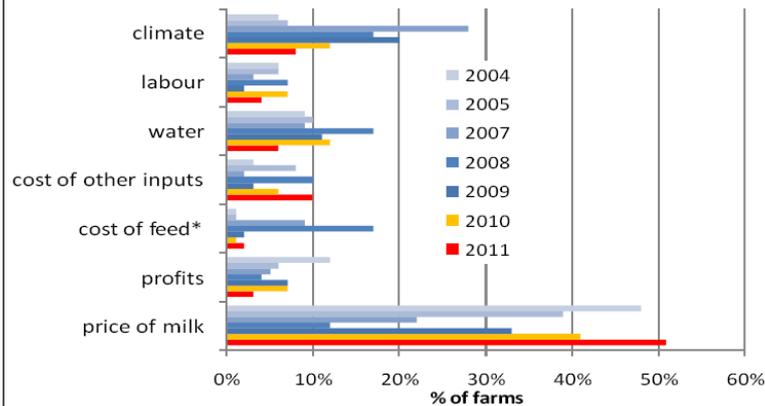
To provide background behind the **rapidly changing situation in China**, Yvon Guérin of Parmalat explained that there are now 15,000 farmers in farm sustainability programmes and China has increased its spending on agricultural research by 10% a year. It is also facing up its environmental challenges by achieving a 15% reduction in CO<sub>2</sub> packaging and recycling 50% of its plastic bottles. Although the country has a rapidly increasing number of dairy consumers, the consumption per head is still very low but attempts are being made to encourage children to consume dairy from a young age with 50,000 pupils in a school milk scheme.

Tetra Pak is also achieving significant environmental savings, as explained by Dennis Jonsson, through the development of sustainable production, reduction of the environmental footprint and an **increase in recycling rates**. The Group has achieved a 13% absolute carbon reduction by 2010 and targets of increasing the renewable content of its packaging from 73% to 100% and doubling the recycling rate to 40% by 2020.

The approaches being used by Cargill, the international producer of food and agricultural products, were outlined by Rob Sheffer who explained that it was achieving sustainable dairy production through **nutrient efficiency**. The methods used are:

- Maximising nutrients captured from crops and utilised by the animal
- Optimising animal performance through research and modelling efforts, and
- Linking milk supply chains with milk quality and composition

# Main challenges facing us

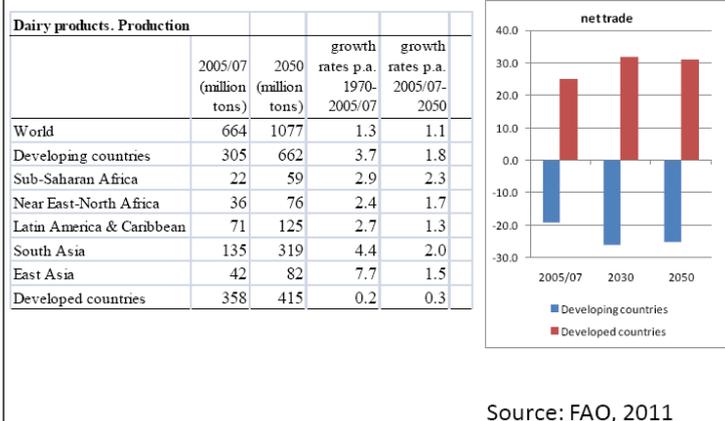


The changing face of the **challenges facing dairy farmers** was illustrated by Wes Judd as he explained that what is perceived to be the main challenge (climate change) is now of decreasing importance and other issues, such as the cost of inputs and, especially, the price of milk are coming to the forefront of farmer's concerns during the economic downturn.

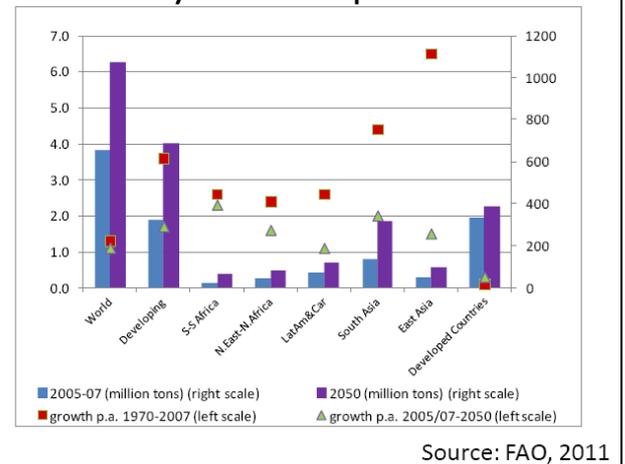
This shows how important it is to be constantly aware of shifting global trends so that you do not lose ground against your competitors and that the modern dairy farmer has to also be a business manager.

The extent of the challenges was starkly illustrated by Berhe Tekola of the FAO. He noted that the increasing global population is placing an increasing threat to the total size of the world that is harvested and predicted (in a "worse case scenario") the reduction might be up to 39% in total by 2080 and 29% for developing countries, as well as a 7% reduction in cereal output in Sub-Saharan Africa, potentially leading to 130 million more people being undernourished.

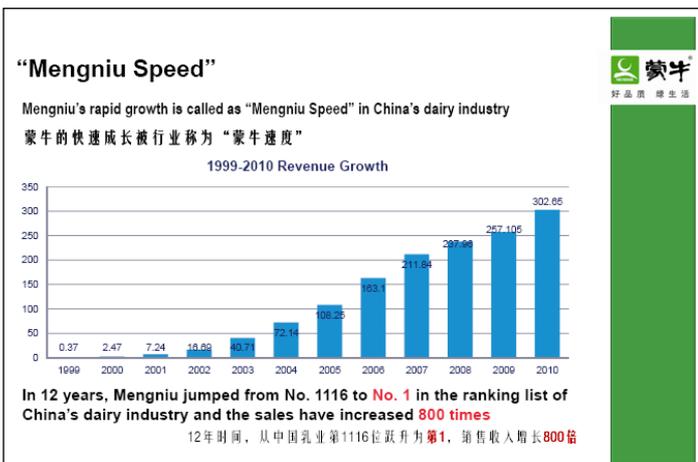
# Dairy production and trade



# Dairy consumption



Like other speakers, he looked at the period to 2050 and, like the other speakers, he concluded that there might be sufficient resources to support a population of 9 billion, but this would be dependent on more investment to increase productivity and better management of land and water, which would all require international policy coordination in these areas.



The rapid growth of milk production in **China** has been the subject of keen interest over the past decade as the country has moved forwards strongly to become one of the main players in the global dairy sector. Indeed, it has become the third-largest milk production country with an annual output of 38.82 million tons.

The structure of the processing sector, however, is one dominated by the smaller size company as only 7 of the 744 dairy companies has a revenue exceeding RMB1.8bn (£177m). The largest of these is Mengniu, which has achieved a remarkable average annual growth rate of 104% over the past decade, with sales increasing 800 times, and it is now ranked 18th in

Rabobank's list of top dairy companies by turnover.

The industry, however, suffered from the 2008 melamine contamination crisis and is now trying to re-establish consumer confidence in domestic products. One of the consequences of this has been that China's imports of WMP have increased substantially.

Examples of the initiatives that Mengniu has put in place to fulfil its commitment to help develop the Chinese industry in a sustainable fashion are:

- It has built one of the world's largest biogas plants
- It has invested over RMB3bn in 14 "prairies", each with over a 10,000 cow capacity, and committed a further RMB3-3.5bn over the next 5 years for a further 20-30 prairies
- Invested over RMB200m since 2006 in delivering free milk to more than 1,000 primary schools in 31 provinces
- Participating in the Chinese Government scheme to reduce carbon dioxide emissions by 40-45% by 2020 compared to 2005

Although production is high, consumption per head of drinking milk is still relatively low, but it is improving. In 1998, it was less than 7kg in China, compared to an average of 106kg globally but now it has increased to 29kg per capita as against the world average of 118kg.

### *Dairy Policies and Economics Conference – 17th October*

*Ian Wakeling – UK-IDF Secretary*

During each World Dairy Summit, the two main presentations that provide snapshots of the current situation regarding milk production and trade are one featuring highlights from the World Dairy Situation report and another from Monika Wohlfarth, of the German agricultural market reporting agency ZMB, which concentrates more on the European sector.

The **World Dairy Situation** revealed that 2010 was a year of steady demand and market driven supply and that 2011 has seen production increases, low levels of stocks and a slowing down of international demand.

Following a year of modest growth (0.9%) in 2009, the rate of increase in cow's milk production improved in 2010 (but was still below average) at 1.6% with production reaching 601 million tonnes. Reflecting this increase, production of the major products also rose in 2010 with butter up by 1.8%, cheese 3.0%, WMP 6.8% (having suffered a 5.8% fall in 2009) and SMP only 0.3% after two strong years previously.

There were also encouraging signs in terms of global per capita consumption with a rise to 104.7 kg/head after a rare drop in 2009.

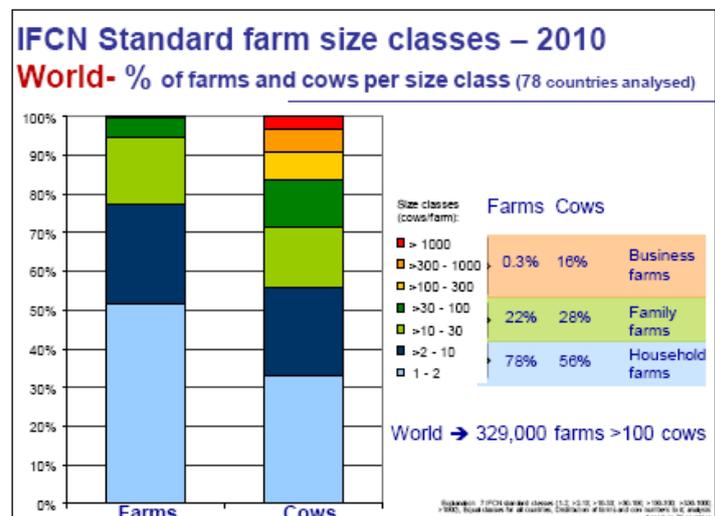
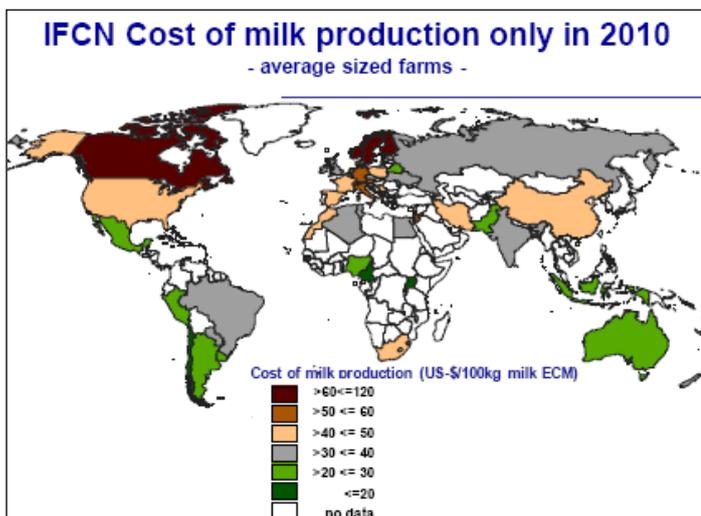
Global trade is also increasing strongly with 51.9 million tonnes milk equivalents traded, nearly 9% above 2009, helped by a strong recovery of exports from the US and further growth of EU exports. World market prices picked up between 10 and 20% from the end of 2009 and there was welcome news for milk producers with prices 15-25% higher than they had been in 2009.

The picture for the first half of 2011 was one of a further increase of 2.1-2.2% in milk production, strong cheese growth and firm butter growth but powder production dropping in the second quarter after large rises during the first quarter of 21% for WMP and 33% for SMP.

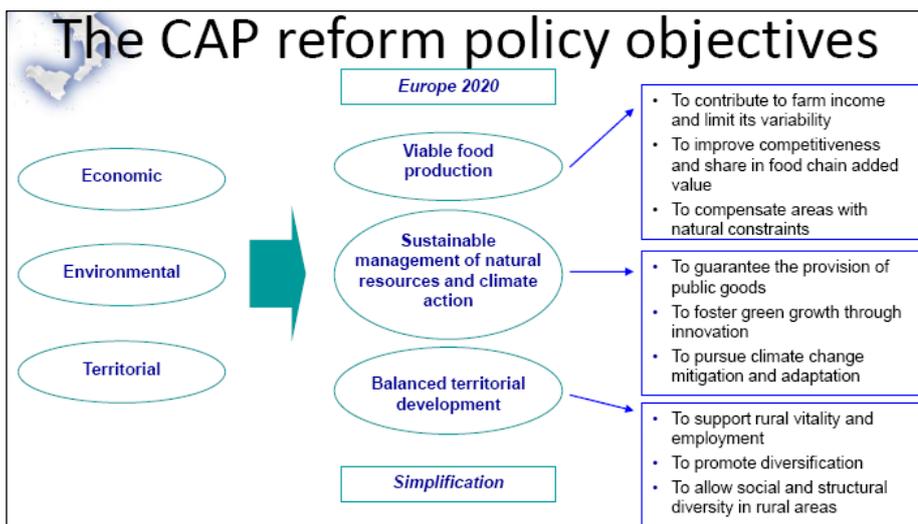
Concentrating on the **EU situation**, Monika Wohlfarth reported that EU milk deliveries had increased by 2.2% for the eight months to August, compared to last year, and EU production now accounts for 21% of the global total of all milk and 25% of cow's milk. A further (slight) increase in production is forecast for 2012. The number of farmers is down, but the average herd size is up to 10, ranging from 1.5 in Romania to 130 in Denmark.

There has also been more milk processed, with cheese utilising 48% of milk intake, liquid milk, yogurt and desserts 33% and butter, powder and other products the remaining 19%. Although exports overall are on the increase, cheese exports are stagnating and those of WMP are weak. EU exports now account for 10% of milk intake with Russia the main destination. Less cheese is also being imported. Stocks are reducing further with butter stocks low, although butter prices remain high with a gap developing between EU and world prices. Cheese prices have also moved upwards.

**Torsten Hemme of IFCN** pointed out in his presentation that one part of the milk production sector that is often overlooked is the "informal sector" with the fragmented nature of milk production globally meaning that only 62% of the milk produced reaches the processor and the largest processor (Fonterra) only accounts for 3% of world milk production. He estimates that there might be as many as 145 million dairy farm on the planet and between 700 million and one billion people worldwide (i.e. one in every seven) rely on farming for their livelihood. His expectation is that the global population will reach 7.8 billion by 2025 and that an extra 200 million tonnes of milk will be needed (equivalent to New Zealand's milk output) during this period.



The IFCN analysis of 78 countries makes interesting reading with 78% of farms (representing 56% of cows) being household farms with less than 10 cows, 22% of farms (28% of cows) being family farms with between 10 and 100 cows and only 0.3% of farms (16% of cows) classified as business farms.



The introduction of milk quotas in 1984, as a result of production exceeding demand, triggered high spending on storage, internal subsidy schemes and exports. The forthcoming abolition of the quota scheme in 2015 is also likely to have an impact, partly through increased pressure on natural resources but also in terms of sustainability, and Brigitte Misonne from the European Commission looked into this in more detail.

The High Level Experts' Group on Milk (HLG) was created with a view to looking at medium and long term

measures for stabilising the market and producers' income and enhancing transparency. This could be achieved through the increased use of contracts, which would include details about price, volume and timing of deliveries, and the duration of the contract.

The main elements of the legislative framework for the CAP 2014-2020 include:

- Direct payments regulation
- Single CMO regulation
- Rural Development regulation
- Horizontal regulation (cross-compliance and Farm Advisory System)
- Transitional regulation for direct payments in 2013

More information about the expiry of the quota scheme and CAP post 2013 can be viewed at the following links:

[http://ec.europa.eu/agriculture/analysis/external/milkquota/index\\_en.htm](http://ec.europa.eu/agriculture/analysis/external/milkquota/index_en.htm)

Economic analysis of the effects of the expiry of the milk quota system

[http://ec.europa.eu/agriculture/analysis/external/milk/index\\_en.htm](http://ec.europa.eu/agriculture/analysis/external/milk/index_en.htm)

The CAP after 2013

[http://ec.europa.eu/agriculture/cap-post-2013/index\\_en.htm](http://ec.europa.eu/agriculture/cap-post-2013/index_en.htm)

The Milk Package legislative proposal and further information

[http://ec.europa.eu/agriculture/milk/index\\_en.htm](http://ec.europa.eu/agriculture/milk/index_en.htm)

Information on the dairy market situation

<http://circa.europa.eu/Public/irc/agri/lait/home>

It hardly seems possible that another IDF Summit has come and gone, but it has. The programme for the nutritionists attending the World Dairy Summit was completely full. Between the main Standing Committee on Nutrition and Health (SCNH) meeting, the various Action Team meetings and the conference itself we were kept very busy. In term of the main conference programme, the nutrition sessions were held over three days. One of these days included was a new area for the IDF – nutritional economics which will be discussed a little later in this report. In addition, other conferences included human nutrition elements. A prime example of this was the marketing session which included some excellent nutrition talks. This focus on nutrition across the conference demonstrates that, at the heart of the dairy industry alongside the dairy cow, we have the consumer and the impact of our products on human health must always be considered. If we're not thinking about it and not promoting our benefits, regulators and special interest groups will have no opposition in knocking us down on what they see as our detractors.

### Standing Committee on Nutrition and Health

For those of you who are new to the IDF community, the Standing Committee on Nutrition and Health is one of the largest committees within the IDF family. It is responsible for human nutrition and health and as such for: monitoring and reporting on significant findings in global nutrition research, contributing information to the scientific community on the role of milk and milk products in human health, identifying the research needs of the dairy sector and, in collaboration with other IDF bodies, ensuring input from a nutrition perspective into the work programmes of international organisations including the World Health Organisation, the Food and Agriculture Organisation and Codex Alimentarius.

On a personal note, I have been the Chair of this Committee for the last four year so for me leading the SCNH meeting for the last time in Parma offered the opportunity to reflect on the work of the Committee. As outgoing Chair, I'm incredibly proud of what the SCNH has achieved in the last four years and, for those of you who perhaps don't know in depth the work of the committee, I want to take a moment and highlight some of its public facing work over that time including:

- the establishing of collaborative initiative between the SCNH and the Global Dairy Platform on **dairy fat and cardiovascular disease** which resulted in a series of peer reviewed publications that were taken onboard by the World Health Organisation's Expert Panel when they were evaluating the evidence on the role of fat in human health and disease
- the establishing of an **academic speaker network** which involves getting a number of non-dairy academics onto the programmes of key global nutrition conferences as speakers or as session chairs in order to promote a more balanced view of dairy fat in human health
- the development of a special issue of peer reviewed papers on **carbohydrates** with a specific focus on lactose which is now in press and will spotlight the role of lactose and its derivatives in human health
- submissions to the European Food Safety Authority on dairy-related issues consultations
- numerous submissions to Codex electronic working groups on areas of importance to dairy-nutrition as well as interventions at Codex meetings on key topics
- the continuing work to protect the **protein nitrogen conversion factor** for dairy versus soya and other plant proteins
- the establishing of a programme of work on **dairy and children's diets** which will very shortly result in a peer reviewed publication
- the establishing of a joint initiative between the SCNH, the Standing Committee on the Environment and the Global Dairy Platform on **dairy nutrition and the environment** which will result in an internal IDF resource on this topic as well as a peer reviewed publication which can be used more broadly by the industry

My thanks during the meeting at Parma went to all my colleagues on the committee who made getting all that good information on dairy to the wider world a reality. And, particular thanks to Sandra Tuijelaars who was the nutrition officer at IDF during my stint as Chair but who has now left IDF to pursue a career at the European Commission. The new Chair (Matt Pikowski - USA) and co-chair (Isabelle Neiderer – Canada) will no doubt take the **priority areas** discussed during the Parma meeting expertly forward to the benefit of the dairy industry. These included work items on: protein, saturated and *trans* fats, vitamin K, crisis management and the benefits of dairying in human health. As I take on a new role within IDF – the nutrition representative to the Science Programme Coordination Committee I look forward to helping take the SCNH from strength to strength alongside its new chair and co-chair.

**Dr Judith Bryans – UK-IDF Chair**

With three days of nutrition talks to choose from, I've selected the following presentations to spotlight.

Dr Greg Miller from the USA kicked off the nutrition conference with a talk titled Tradition Faces the Future: The Evolution of Thinking about Nutrition. He addressed key elements impacting nutrition today including **population changes, regulation and scientific and technological advances**. His overarching take away message to the audience was that, as the world changes around us and more and more elements are introduced to nutrition beyond physiology and nourishing populations, “the dairy industry has to take a leadership role today to evolve how people address nutrition tomorrow.”

Professor Philippe Legrand, a renowned biochemist in the world of nutrition from France, picked up the baton on dairy fat. His talk was about **saturated fat** and the new data showing that not all saturated fats raise cholesterol, the case for increasing intakes of some saturated fats, the difficulties with changing the opinions of regulatory authorities who like to use science which fits with their current ideas, rather than taking on board the breadth of science available, and the fact that the science on milk does not support a role for milk as a cause of heart disease or stroke.

Professor Adam Drewnowski, head of Centre for Public Health at Washington State University, gave a compelling talk during the marketing session about **affordable nutrition**. Professor Drewnowski highlighted the fact that people need safe, tasty, nutritious and affordable food and how milk and other dairy foods ticked the boxes. In particular milk, when compared with a number of other foods, helps people to meet their needs for a variety of nutrients important for help in the most affordable way.

On the last day of the conference a new session area was introduced to IDF – **nutritional economics**. It is a shame that this didn't come earlier in the conference as it held a number of interesting presentations. A presentation by the OECD in relation to nutrition and the cost of obesity was somewhat disturbing as it clearly demonstrated that recommendations by OECD are based on some very spurious data. Another talk in this session included an interesting presentation on nutrition and the elderly and the importance of dairy in meeting the needs of this age group. There was also an update from Professor MacCarron (USA) on the estimated healthcare savings in the USA associated with meeting the dietary recommendations for dairy intakes. Although the methodology from that report needs some clarification, it is an interesting concept for the dairy nutrition community to think about and to consider replicating elsewhere in the world, albeit perhaps in a different way.

If you are interested in more nutrition, many of the presentations from Parma are available to download from the WDS website but, for those of you without a password, copies of the presentations can be sourced via UK-IDF.

**Environment Sessions**

**Brian Lindsay - Lindsay Consulting Ltd.- Environment Representative on SPCC (Supported by DairyCo)**

**Nutrition and Sustainability Action Team**

The Action Team met on the morning of Friday October 15.

- Second draft of the nutrition review funded by GDP is now complete and agreed by all involved was a substantial improvement from the initial draft submitted.
- The Action Team now has three distinct documents – Nutrition, Environmental Sustainability and Communications.
- The Communications section received the greatest level of discussion:
  - This document is currently only viewed as an internal industry document
  - Discussions were had with regards the potential opportunity to publish the Nutrition aspects of the document. A suitable process and authorship of this paper requires more detailed consideration in relation to the aims of the IDF.
  - Clear guidance will be developed for use and communication of the contents of the document e.g. referencing etc.
  - It was agreed that representatives from the SCENV should also support the development of communications strategies around this report to ensure that previous experiences are captured.
  - It was agreed that the IDF would be the central point of contact for this document and not individual parties in respective countries
  - Develop a Q and A sheet for the sector on the key outcomes/points of the document

- Include the Smedmen et al paper in the Environment draft to encompass the ongoing work of establishing an algorithm for linking nutrient density and sustainability
- The challenge now is how best to blend the three distinct sections into one flowing document.
- The draft Environment section is now to be circulated to the SCENV to seek approval

### **Water Action Team**

The Action Team met on Saturday October 16.

- Methodological development in this area is progressing rapidly.
- Water footprint is different to GHG in that it is influenced by fresh water scarcity, water quality impacts with both spatial and temporal variability
- There are three main developments in this area:
  - Water Footprint network – This group have already published their approach – see [www.waterfootprint.org](http://www.waterfootprint.org)
  - ISO is in the process of developing the ISO14046 standard
  - UNEP/SETEC – draft position paper has been developed though not released.
- These three initiatives all promote differing approaches in that they account differently for blue, green and grey water.
- Encouragingly though it seems that the three groups are now starting to seek alignment in the water footprinting approach.
- Through Dairy Australia, the ATW and the SCENV has access to a key individual in the ISO developments and IDF is also an observer, allowing submissions though no voting in the development process.
- It is difficult to make comments on this basis as observers do not receive the same paperwork as those more closely involved.
- The other challenge is this is an Agricultural issue and not specific to Dairy

### **Actions:**

- A water workshop has been convened in Brussels on February 14/15 and will involve key stakeholders and development initiatives in this area.
- IDF will attend the 3 ISO meetings per year to ensure the AT has every opportunity to comment and also to understand direction of travel for the ISO developments.

### **Biodiversity Action Team**

The Action Team met on Saturday October 16

This is one of the most challenging of the SCENV's work programme as it seems to be so complex.

- The French Dairy Sector has embarked on a biodiversity project in an attempt to 'define' and 'quantify' the issue. The issue is very similar to that of water as biodiversity can be very different over very short distances. The project is in its first year of a 3 year programme.
- The Australian Dairy Sector is not undertaking any specific work in this area; though do work closely with Government researchers in any activities they are undertaking.
- In Germany, all projects are funded by the government and are specifically CAP driven in that they are seeking criteria for support payments.
- In NZ no specific biodiversity work is being undertaken, though there is considerable work related to riparian strips and wetlands restoration. Through the Land Care department a national statement on biodiversity is being developed.
- No specific work is being undertaken in Sweden, though there is a biodiversity aspect to many projects being undertaken by the Swedish Dairy Association. This same organisation is engaged on projects with Norway and Switzerland on pine tree management.
- BL reported that DairyCo is currently considering how best to undertake an ecosystems services project

## Actions:

- Members to share with the Action Team Leader examples of biodiversity activities in their country (I shared the Voluntary Initiative with them)
- A summary will be developed of Biodiversity activities and as a result a strategy will be developed to address identified needs and gaps in knowledge.

## LCA Monitoring Group

The Monitoring Group met on Saturday October 16

The LCA Monitoring Group met in Parma. The predominant aim was to review queries that had been submitted to the IDF with regards the Common Methodology, since its launch.

A specific agenda point on Allocation saw the following points discussed:

Three suggestions to refine the IDF methodology were raised: not accounting for animals that died on farm, accounting for significant changes in animal stock numbers during the year and dealing with animals that have been, or are, reared off farm (typically heifers).

With regards to fluctuating changes in stock numbers over time, it was suggested that a five-year average would be more appropriate than the individual year being studied. For this purpose, it should be investigated whether there are really significant fluctuations in individual dairy herds over years.

It was also noted that the IDF allocation formula does not take into account the energy that is necessary for the maintenance of the cow. It was agreed to query this with the University of Arkansas.

Recent work identified a potential issue with regard to allocation of the environmental burden between dairy products and 'waste' by-product streams (e.g. whey from cheese for production into biogas). A Flysjö suggested system expansion approach to deal with 'waste' by-product leaving the food chain.

Another question raised was whether to consider a slightly different allocation method for raw milk between the different dairy products, based on a weighted allocation factor on fat, protein and lactose instead of the current practice. The meeting did not come to a conclusion on that point.

A review of queries related to the IDF methodology indicated that in the vast majority of cases all that is required is some clarification in certain areas of the document to simplify interpretation for practical application.

## Actions:

- A more detailed discussion document on allocation with associated questions is to be developed
- Group members were to take the discussions from the meeting back to their specialist advisors to fully appreciate the consequences of the proposals on dairy LCA in their regions.

## GDA Reporting Session – Report on the CD

Wednesday October 20.

- A two hour session that was well attended – I just wonder at times if we are really capturing the right audience.....Are we preaching to the converted – believe greater effort is required on external communications.
- Both in the reporting session (David Homer was a key speaker) and in the supporting documentation UK efforts received a high profile
- Session was well received and has since had predominantly trade press coverage globally.
- UK needs to continue to engage with this process as the returns are well worth the time investment.

**Environment Conference – 19<sup>th</sup> October**

- **Anna Flysjö – Arla Foods – Improving the Carbon Foot Prints of Dairy Products**

Excellent presentation addressing the real issues associated with the **application of LCA science** to the real world situation. 85% of Arla's carbon footprint is at the farm level. Arla Foods are in the process of developing a model to calculate the CF of different product groups to allow improvements to be targeted at the product level. Arla Foods internal target is to reduce GHG emissions by 25% before 2020 (2005 base year).

The presentation also importantly covered how the quantification of GHG emissions can also be used to capture many other parameters crucial to sustainable dairy production.

- **Jean Baptiste Dolle – French Livestock Institute and French Dairy Board**

***The Carbon Footprint at farm gate: Main Results on 400 dairy farms, identification of hotspots and technical solutions.***

Excellent presentation covering the **methodological developments** that incorporate the IDF methodology with those that already were in existence in France. The resultant methodology has been used on some 400 French dairy farms, covering a wide range of production systems. Results provided a range for milk production of 1.2 to 1.3 kg/CO<sub>2</sub>/kg FPCM. The net footprint including carbon sequestration is between 0.8 and 1.2 kg/CO<sub>2</sub>/kg of milk.

The presentation demonstrated the clear correlation between environmental efficiency and economic efficiency, with the study also highlighting the opportunities and strategies for reducing the three main agricultural GHG's, especially in relation to increasing productivity which results in lower CH<sub>4</sub> emissions though potentially increases N<sub>2</sub>O and CO<sub>2</sub> emissions.

Carbon footprint is only one impact indicator – Mitigation strategies must be considered with a holistic approach.

- **Theun Vellinga – Wageningen Livestock Research – *Carbon foot printing of feed and animal nutrition, a tool for mitigating feed emissions***

The proportion of the carbon footprint of livestock production of emissions coming from feed production, cultivation, processing and transport is about 35% for ruminants and 70% for monogastrics.

The goal of this project and the resultant 'tool' is to get a better insight into the **contribution of feed production to GHG emissions** and to identify mitigation options. The basic underlying principles are transparency of data and calculation methods and the use of internationally accepted calculation rules.

The tool will allow the calculation of Carbon footprint per kg of feed and per kg of animal product. The user interface will allow the use of default data or this can be overwritten with primary data based on actual feed formulations.

This tool is still under development with the aim of launching in 2012.

- **Erin Fitzgerald – Dairy Management Inc. – *Using lifecycle assessment to measure, collaborate and innovate***

In 2010 the US dairy industry undertook and published the results of a study of **GHG emissions related to a gallon of milk** from production through to the disposal of the container by the consumer. This study was the first step for the US dairy industry in a comprehensive and science based approach to benchmark, improve and report on its environmental footprint.

A key finding from this study was the influence that management practices have on the carbon footprint for farms, processing plants and transport infrastructure.

On the back of this work the Innovation Centre for US Dairy (the part of DMI that is responsible for this work) currently has 10 GHG reduction programs underway that target efficiencies and innovation based on the outputs from the original study.

These activities are designed to aid the US dairy sector to reach its self imposed target of reducing the carbon footprint of liquid milk by 25% by 2020.

- **Michael Macleod – FAO - *Towards a partnership on benchmarking and monitoring the environmental performance of livestock food chains***

This presentation was basically promoting a project that the FAO are seeking funding for from the private sector. The IDF have agreed to be part of the project though on the basis that they do not have to contribute any funds.

As the IDF has already established a sector specific guideline for the estimation of GHG emissions from dairy production and processing, this FAO project is not anticipating undertaking any further work in this area. The need for the IDF to be involved is to ensure that methodological developments in other sectors do not have a detrimental impact on the advanced dairy work.

- **Muriel Tichit – INRA – *Biodiversity in dairy systems : challenges for a win-win partnership***

Excellent presentation that demonstrated the challenges associated with **managing biodiversity in farming systems**.

To move towards improvement in biodiversity, indicators to monitor the state and trends of both agriculture and biodiversity. The development of these indicators raises several problems related to metrics, functional units, time and spatial scales.

Some indicators can be potentially misleading and all indicators do not have equivalent properties in terms of accuracy, cost and communication to decision makers.

The researchers at INRA suggest that it is difficult to make a strict allocation of biodiversity loss to dairy systems because in agricultural landscapes, dairy systems are interacting with other farming systems and human activities. They conclude that a win – win partnership cannot be achieved without considering other environmental issues.

- **Mia Lafontaine – Quantis – *Environmental and Socio-Economic Life Cycle Assessment of milk in Canada***

Quantis are undertaking a full **environmental and socio – economic LCA for Canadian milk production**

The study utilises primary data from over 250 farms. Spatially explicit characterisation factors for impacts generated by using the geographical coordinates of the 13,000 Canadian dairy farms allows understanding of the ecosystem services (land use and water) and on human and ecological toxicity.

The IDF Common Methodology forms the basis for the GHG calculation component of this study. Water foot printing and land use characterisation make use of latest scientific developments (Boulay et al 2010, Pfister et al 2009, and UNEP-SETAC Land Use Working Group).

The Canadian dairy industry is also intent on developing a graphical interpretation tool that displays both environmental and socio-economical impact profiles based on a small number of factors. This will allow dairy farmers to have a quick assessment of their footprint.

**Dairy Policies and Economics – 17<sup>th</sup> October**

**Jim Begg – Member of the Standing Committee on Dairy Policies and Economics**

**IDF Country Reports**

The IDF Country Reports are a first class source of information on what's happening in dairy markets around the world. The reports cover policy developments, market analysis, structural changes, consumer trends, and the latest dairy publications. The reports are summarized (by Dairy UK) and presented to the meetings of the Dairy Policy and Economics Committee by Dairy UK DG Jim Begg.

In the summary presented in Parma, the **country reports** highlighted a generally positive situation at both the retail and wholesale level for dairy prices, higher farm-gate prices and a largely universal increase in milk production as a result. Key policy developments reported on included rejection of changes to acceptable somatic cell count levels in the US, adoption by Denmark of a saturated fat tax, bans on advertising of some dairy products in Ireland, and discussions underway in both the US and EU on changes to agricultural policy support measures for dairy.

At the market level, developments highlighted included efforts by Dutch and German farmers to differentiate their milk based on production systems, potential negative responses from UK public and consumers to TB-related badger culling programmes, attitudes toward intensive dairy systems and the impact of retailer discounting on farmer confidence.

The Country Reports and summaries can be provided on request from [iwakeling@dairyuk.org](mailto:iwakeling@dairyuk.org)

**Lombardic Farms Technical Tour – 19<sup>th</sup> October**

**Julia Hawley, DairyCo Board Member**

Lombardy in central northern Italy contains a mix of mountain land and vast areas of fertile flat river plains, now heavily irrigated and it also has the greatest density of cows for the whole of Italy, with a stocking rate of 2.8 cows/ha and 41% of Italy's milk quota.

Most of the milk produced in the area is sold for manufacture of PDO cheeses, such as Grana Padano, Gorgonzola or Provolone Valpadana.

The first farm visited was **Angelo Menozzi Farm, owned by the University of Milan**, deliberately running an enterprise mix typical of the area, to support its knowledge transfer role in the local farming community as well as its research and teaching resource within the University. With 64 ha of land, all irrigated, maize is the main fodder crop grown, along with lucerne and Italian ryegrass.



The 90 dairy cows are all 365 day housed, comprising mainly Holsteins, (ave yield 9200 kg, 3.96 % butterfat, 3.54% protein) with a few Jerseys and Simmentals, as well as a handful of beef breeds to support the educational activity.

The unit had recently invested in new sand-bedded cubicle housing with automatic scrapers and 14/14 herringbone with DeLaval Step matrix for locomotion scoring on exiting the parlour.

Of particular interest was Herd Navigator, (HN) a recent collaborative project between the University of Milan, DeLaval and Foss. The system uses complex software to undertake automatic milk sampling in parlour to then analyse the milk for a range of indicators of health and welfare status.

These are: post-calving daily sampling of milk for ketones through BHB analysis, with an alert at the threshold level for ketosis for a particular animal. Typically this may occur at 10-15 days post-calving, and is associated with a detectable acetone smell, but it has been identified that cows with Type II ketosis associated with fatty liver triggering an alert before day 10, despite the fact that acetone cannot be detected until further deterioration has occurred. This system, therefore, enables much earlier identification and treatment of cows with ketosis.

HN also uses novel technology for mastitis detection, analysing milk for the enzyme LDH which is released when inflammation occurs within an infected quarter and is well correlated with and actually a more accurate indication of active infection than Somatic Cell Counts.

HN will sample at least daily for every cow for 30 days post calving to generate a reference level for that animal. After this, the cow's history and natural levels of LDH will influence the sampling protocol but, with the exception of some rapidly developing mastitis cases such as E coli infections, the system will trigger a mastitis alarm on average more than 4 days before clinical symptoms appear, enabling earlier treatment and better cure rates.

The third element of welfare management is fertility and HN uses milk progesterone testing at varying intervals during the heat cycle with particular emphasis towards a new heat event. The system will sample at days 5, 9, 14 and after day 18 to find the next heat. As well as detection of heats, the protocol can generate alarms for both follicular and luteal cysts.

Fertility is a major issue in this area of Italy, a reflection of the high yielding largely Holstein cows which are the main breed in the region and all cows are affected by heat stress in mid-summer which reduces conception rates. Since the introduction of this technology, the farm had seen significant improvements in breeding performance, with the open period reducing from 180 to 120 days in less than a year since installation.



The second visit was to a large **privately owned farm, Azienda Agricola Barbaglio, Cascina Sant' Ignazio**, with over 1,000 head of cattle, including 550 in the milking herd, which was producing an average of 8,893 litres / cow / annum at 3.8% fat and 3.44% protein. The opportunities to learn from this visit were limited by having only one interpreter for a large international group.

With a land area of only 120 ha, large volumes of fodder were bought in for TMR feeding. The farm had invested heavily in recent years with a 40-point rotary parlour and new cubicle housing; all roofs had PV panels and the unit offered 1MW electricity generating capacity, all of which was sold to the national grid; they wished to increase this by a third

which would be used to supply the farm and associated houses.

Sadly, despite the modern facilities, there was a high degree of lameness amongst the cows, which seemed to be attributed to a variety of factors including cubicle design, bedding type, 365 day housing, long distances walked on poorly designed slats and inappropriate footbathing regime. The fertility challenges, referred to at the first farm, were evident in the calving index of 460 days, as well as the issues with lameness, with these factors contributing to a 31% cull rate.

This was an unusually large herd for the region, where the average herd size is nearer 100 cows. When asked whether with the ending of quotas in 2015, there were likely to be other farms expanding to a similar scale, the owner said that he thought not in the Lombardy region. The limiting factor in the area is the nitrate legislation and most farms (including this one) were already exporting slurry to cropping farms which were also at the application limits and this would have to cover greater and greater distances if herds expanded.

As well as cereals, lucerne and maize, many of the farms in the area grow risotto rice and Lombardy is renowned for the quality of rice grown. The straw is not very absorbent and too coarse and sharp for a good livestock feed or bedding and, although some is made into fibreboard, research is being undertaken to identify alternative markets. Another interesting by-product was the 'straw' and husks from maize grown for the grain – on this farm used for a bedding material for calves.

This tour provided a fascinating insight into the challenges and opportunities presented by intensive dairying in this area of Italy.

### ***Dairy Science and Technology Standing Committee***

#### ***Roger Emery – Group Technical Director: Dairy Crest***

A monograph on **Salt in the Manufacturing Process of Cheese** is being prepared, containing chapters on Nutritional benefits of cheese, Impact of sodium chloride in cheese processing and ripening, Optimum levels of Na(Cl) in different cheese varieties, New ways of reducing sodium and the Regulatory situation in different countries. A factsheet will also be produced.

The group is also involved in preparation for future events, including:

- ***IDF Cheese Ripening and Technology Symposium***, Madison, Wisconsin (USA), 21-24 May 2012 – ref. events website: <http://www.idfcheeseus2012.com/>

Registration is open for the Symposium, which will look at the following 3 key areas, and technical tours will be available:

- Maturation and flavour development
- The development and structure of cheese texture and sensory performance
- Health and Wellness – The natural health benefits of cheese.

- ***IDF/INRA International Symposium on Spray Dried Dairy Products***, France, 19-21 June 2012 – ref. events website: [International Symposium on Spray Dried Dairy Products - home page](#)

Registration is also open for this Symposium, and the programme will cover:

- Advances in dairy powder manufacture
- Whey and derivatives
- Process energy and alternative technologies
- Powder properties and reactivity
- Nutrition
- A commercial session.

- ***IDF World Dairy Summit Cape Town***, South Africa, 2012 – the conference on *Dairy Ingredient Technology and Recombination* will be over 1 day with 4 sessions totalling 16 presentations. Topics to be covered at the WDS would not overlap topics to be presented at the IDF/INRA Spray dried products symposium as the focus in Cape Town is on recombination.
- ***The fifth IDF Symposium on Science and Technology of Fermented Milk & the Second IDF Symposium on Microstructure of Dairy Products*** (events to be hosted in Australia in March/April 2014)
- ***IDF World Dairy Summit Yokohama***, Japan, 2013 - proposed conference on milk protein biofunctionality.

The SC will also produce the following four fact sheets for the IDF website.

- Salt in cheese.
- Cheese varieties
- What is milk/milk fat – structure/stability
- Novel technologies

Marie Paulsson (SE) was elected as the new chair and Jean-Pierre Guyonnet (FR) as deputy chair.

**Novel Technologies for Sustainable Dairy Products Conference – 18<sup>th</sup> October**

The SCSDT day at the IDF World Dairy Summit focused on the use of Novel Technologies in Dairy to improve sustainability in the industry. A total of 16 presentations were made, a summary of these is shown below. If anybody would like any further information copies of the presentation can be obtained from Roger Emery by email ([roger.emery@dairycrest.co.uk](mailto:roger.emery@dairycrest.co.uk))

1	<i>Role of novel technologies and approaches for sustainable dairy products</i> Dr Has Mukh Patel, Fonterra Research Centre Palmerston North, New Zealand	Overview of Novel technologies and specific example: <ul style="list-style-type: none"> <li>• High Pressure Processing (HPP) giving improvements in shelf life</li> <li>• Non Gelling Functional Proteins (WPC's) giving texture improvements and better sensory attributes</li> <li>• Fouling – Surface coatings</li> </ul>
2	<i>Application of electrochemically activated water for cleaning and sanitisation of dairy plants</i> Bent Oestergaard, Director Global Marketing, Food & Beverage, SPX	Use of electrolysis to produce hypochlorous acid and sodium hydroxide, from water and salt. A single unit produces to produce cleaning and sanitising agents in one system. Claims that the system reduces CIP time, energy and cost.
3	<i>Novel Coating Technology to Reduce Fouling During Thermal Processing</i> Dylan Liu, The University of Melbourne	The use of a SLLC film coating applied to stainless steel heat exchanger plates. Gives more consistent $\Delta T$ during processing. Allows longer runs between CIP's.
4.	<i>To heat or not to heat</i> Mansel Griffiths, University of Guelph	An overview of Dairy Pathogens, and the potential uses of “non heat” processing technologies.
5.	<i>Sustainable milk powder processing Understanding milk protein interactions in milk concentrates</i> Dr. Thom Huppertz & Mr. Jan Klok, Nizo research.	Increasing evaporator total solids to reduce energy usage in production, through improvement of protein pre treatments.
6.	<i>Spray drying of dairy bacteria: New opportunities to improve the viability of bacteria powder</i> 1 P. Schuck <sup>1,2</sup> , A. Dolivet <sup>1,2</sup> , S. Méjean <sup>1,2</sup> , C. Hervé <sup>3</sup> , R. Jeantet <sup>2,1</sup> 1 INRA, UMR 1253, F-35000 Rennes, France 2 Agrocampus Ouest, UMR 1253, F-35000 Rennes, France 3 Laboratoire Standa, F-14000 Caen, France	An alternative preservation method for starter cultures, rather than freezing or freeze drying. Potential for lower energy usage over the life cycle.
7.	<i>Continuous heat treatment of skim milk by ohmic heating</i> Yannick Remy, GEA	Using high voltage and milk as an electrical conductor to heat the milk. Potential for lower energy pasteurisation if the technology is scalable.
8.	<i>Comparison of continuous ohmic heating and steam injection for the sterilization of infant formula</i> Mathilde COUREL Stéphanie ROUX, Jean-Pierre PAIN Inès BIRLOUEZ-ARAGON Francesco MUNICINO, Mario MASSA	Comparing the physio-chemical effects of steam injecting and ohmic heating on infant formula.
9.	<i>Sonoprocessing of Dairy Ingredients</i> Dr Bogdan Zisu Dairy Innovation Australia	The use of ultrasonic in dairy processing. Looking at applications in viscosity and gelling improvements of whey protein concentrates.
10.	<i>Effect of ultrasound treatment on stabilization of cocoa flavored milk.</i> S. Abbasi, M. Ostadzadeh, M.R. Ehsani Tarbiat Modares University, Tehran, Iran	The use of ultrasonic to reduce particle size of cocoa in milk drinks, to improve stabilization.

11.	<i>Role of Packaging in Improving the Sustainability of a Cheese Supply Chain</i> Eugenio Longo Director, SmartLife® Sustainability Solutions	Optimising packaging type and formats, to deliver the best life cycle sustainability.
12.	<i>Towards a more Sustainable Dairy Industry: Integration across the Farm-Factory Interface and the Dairy Factory of the Future</i> MA Augustin, S Udabage, P Juliano, PT Clarke CSIRO Food and Nutritional Sciences Melbourne, Australia	Looking at the total dairy supply chain and identifying how changes on farm (e.g. Diet) can impact and improve processing and product functionality.
13.	<i>Cold adaptation of the cheese ripening bacterium Propionibacterium freudenreichii</i> Dr. Marion Dalmasso – INRA, UMR1253 STLO, Rennes, France	Investigating the impact of maturation temperature, on the gene activity of Propionibacterium freudenreichii, during the maturation of emmental cheese
14.	<i>Changes in Milk Fat Globule Structure and Heat Transfer in Raw Cream during Plate Heat Exchanger Processing</i> Saskia Schwermann, University of Applied Sciences and Arts, Hannover	Understanding the impact of heating and processing on the structure of milk fat globules
15.	<i>Novel Stimuli-Responsive Ion-Exchange Resins for Use in the Dairy Industry</i> Cheryl Taylor, CSIRO Food and Nutritional Sciences, Australia	Improving the effectiveness of ion exchange resins in the extraction of protein from cheese whey solutions.
16.	Preservation of Raw Milk in Developing Countries by Addition of HOX (Hexose Oxidase) to Activate the Lactoperoxidase System Progress Report Novel Technologies for Sustainable Dairy Products Doug Willrett, Ph.D. Executive Vice President, Danisco A/S	Improving milk quality in developing countries where on farm refrigeration is not present.

## Food Safety

**Dr Ed Komorowski – Technical Director: Dairy UK**

### **Food Safety: An ongoing concern at Parma**

Milk and dairy products have an excellent safety record but this is a situation which does not arise by chance. Raw milk can contain a wide variety of pathogens including E. coli (STEC), Salmonella, Listeria, Campylobacter, Clostridium perfringens, and Staphylococcus aureus. Milk is an excellent source of nutrients, so these bacteria, if present, can easily multiply. The dairy industry needs to remain vigilant to ensure that its products remain safe. At the IDF Summit at Parma the Standing Committee on Microbiological Hygiene reviewed the existing **and emerging hazards associated with milk and milk products**. This Committee includes various experts with international reputations including Professor Olivier Cerf of France, Claus Heggum of Denmark, Professor Rusty Bishop of the USA, and its chair Robin Condrón of Australia, with the consequence that its conclusions carry great weight.

Perhaps one surprising conclusion is that much of the data used to predict the effectiveness of heat in destroying bacteria and viruses is out-of-date. The Committee is close to finalising a protocol which could be used to produce accurate and up-to-date data. The Committee is also engaged in following up earlier IDF meetings on new metrics for microbiological risk management. This follows from a realisation that it is too simplistic to say that, for example, pasteurisation destroys all pathogens. In fact pasteurisation (72°C for 15 seconds), reduces the numbers of any pathogens to safe levels, but this then requires a determination of what are safe levels. While this work is important theoretically it is still some way from practical application.

**Mycobacterium paratuberculosis** is kept under review, but there was no new information on its heat resistance which has been published. While this might appear disappointing, it is reassuring to know that all these experts are keeping the scientific literature under review and have nothing to report.

An action team is working on **the role of salt in matured cheeses**, in order to explain the important role of salt in both ensuring the safety of cheese through its action as a microbiological hurdle to pathogen development and in controlling the biochemistry of flavour development. An action team is also drawing up a fact sheet to explain how microbiological and chemical hazards are controlled to ensure the safety of milk and dairy products.

An ongoing concern is the issue of **antibiotics in milk**, and in particular whether the use of antibiotics in dairy cattle contributes to antimicrobial resistance in humans. Antimicrobial resistance (AMR) has emerged over the last 20 years as a consequence of the large scale use of antibiotics in both human and veterinary medicine. It can result in organisms, so called “super-bugs” which are resistant to therapeutic doses and cause mortality in both humans and animals. As such, antimicrobial resistance is increasingly a subject of consumer concern and as a consequence there is a need for an increased understanding of the contributing factors associated with the development of antimicrobial resistance.

The **prudent use of antimicrobials** was the theme of a whole day’s conference, organised by the Standing Committee titled “Sustainable Food Security: Prudent Use of Antimicrobial Agents”. As well as speakers from the dairy industry, including the present author, the conference listened to experts from various international organisations including the World Health Organisation (WHO), the Food and Agricultural Organisation of the United Nations (FAO), and the World Organisation for Animal Health (OIE).

What is an important starting point is why antibiotics are necessary at all. Dr Jamie Jonker explained from a United States perspective why antimicrobials are used, how they are authorised and controlled, and the testing carried out to determine whether there are residues present in milk. The particular issues around antibiotics in developing countries were well explained by Prof. Cheryl McCrindle using South Africa as the example. Particular diseases would be major problems if antibiotics were not available to treat them.

A question which is often raised is whether antibiotic residues can affect the manufacture of dairy products, and whether if residues are present at or below the MRL fermentation can be affected. Stephen Hennart reported that, in general, it was found that, if milk passed a broad spectrum antibiotic screen, there should be no difficulties in yogurt manufacture, but there could be delays in the fermentation of sour cream. Levels above the MRLs could affect fermentation. Cheese was not studied.

The overall findings were that there was no evidence that human antibiotic resistance was the result of antibiotic use in dairy cattle. Nevertheless the responsible use of antibiotics was advocated, and it was also anticipated that some regulatory authorities would move to restrict the use of certain antibiotics in dairy cattle as a precautionary measure. The proceedings of the one-day conference will be published by IDF. In the meantime the presentations can be made available.

### *Standing Committee on Animal Health*

*Dr Elizabeth Berry – Vice Chair of Standing Committee on Animal Health (SCAH)*

#### ***Guide to Good Dairy Farm Practice***

The Guide to Good Dairy Farming Practice is now available from the IDF or FAO websites. It can also be downloaded from the UK-IDF website by clicking [here](#). Preparation of the subsidiary Guide to Good Hygiene on Farm is underway and a Task Force from SCAH will help with this. The underlying pillars will be coming from other groups e.g. the Task Force on Animal Feeding is working on the nutrition pillar now.

#### ***National cell count reference project***

A joint IDF/ICAR project, to improve analytical efficiency of cell counting, is underway. Bias is considered to be at least 10% between countries. This work is starting with a comparison of existing reference systems – at least three - and aims to provide an international reference material.

#### ***Guidelines for the use and Interpretation of Bovine Somatic Cell Counts in the Dairy Industry***

Part 1 of the document is nearly complete. Part 2 on the use of SCC requires feedback.

#### ***Animal Health Newsletter Issue No. 5***

This is now published with articles on antimicrobial susceptibility, control schemes for bovine coronavirus, BRSV, mastitis, safety of milk with regards BSE, managing the replacement herd, free stall housing and many others. You can view/download the publication [here](#).

#### ***Animal welfare***

The literature review on welfare and mastitis is nearly complete.

**Dr Mike Johnston – Member of Standing Committee on Marketing (SCM)**

The Standing Committee on Marketing in Parma attracted a higher than usual attendance, with 23 representative and observers present.

Craig Plymesser provided a report from the SPCC. The following summarises the subsequent discussion:

- **Dairy fact sheets** should focus on the positives for dairy. Standing Committees will be asked to identify priority areas.
- **Issues management:** agreement that IDF will act as a resource for information and expertise only. SCs will be asked to identify possible future issues that may require consideration. Ian MacDonald (CA) and Vivien Godfrey (US) were nominated to the Action Team.

The theme for the Marketing Conference on November 8<sup>th</sup> at the 2012 World Dairy Summit in South Africa: will be “What’s New and Novel” with four sessions on: new media and promotion, new research and new measurements, new products and trends, new generic advertising.

A new work item on retailer power is being developed.

**International Milk Promotions (IMP) Group**

CDs containing the report of the research project, “The Consumer Relationship with Dairy at an Emotional Level”, were distributed at the Marketing Conference in Parma. The research had been jointly undertaken and funded by IMP and the Global Dairy Platform (GDP). This research is being developed by IMP and GDP through an additional piece of research to develop a marketing architecture for dairy. The results will be presented at a joint meeting, probably in June

In addition, GDP and IMP are working together on a scoping study to look at the potential for either a meta-analysis or a comparative analysis of surveys in member countries in relation to attitudes to dairy and health.

Recent IDF Publications

All IDF publications can be ordered from the UK-IDF office

**Bulletin of the IDF No. 452/2011**

**Collaborative Study on Nitrate in Milk and Milk Products using a Method by Enzymatic Reduction and Photometric Determination after Griess Reaction (International Standard ISO 20541 | IDF 197)**

*An alternative method for determining the content of nitrate in milk and milk products that does not involve any reagent that can have a negative effect of the environment has been developed (ISO 20541 | IDF 197) and tested in an international interlaboratory study to establish its precision (repeatability and reproducibility). This report describes the interlaboratory study and gives the results in full.*

Pages: 35 - Paper 36.00€ - Electronic 32.00€

**Bulletin of the IDF No. 451/2011**

**The World Dairy Situation 2011**

*Annual survey containing statistics on production, consumption, trade and price figures from dairy sector and other sources. Largest dairy companies by turnover and/or milk intake. Comments and prognoses on the situation in different countries and analysis of the whole, covering all major producing and consuming countries. Review of various forecasts of dairy trade.*

Pages: 225 Electronic: 125.00€

**IDF Guide to Good Dairy Farming Practice (2011)**

*This second edition of the Guide to Good Dairy Farming Practice has been developed by an IDF/FAO Project Group of the IDF Standing Committee on Farm Management. It has been written in a practical format for dairy farmers engaged in the production of milk from any dairy species to support the production and marketing of safe, quality-assured milk and dairy products.*

*The Guide focuses on the relationship between consumer safety and economic, social and environmental management at the farm level. Dairy farmers' production systems worldwide need to be able to combine profitability with the responsibility of protecting human health, animal health, animal welfare and the environment. This Guide gives individual dairy farmers proactive guidance on how these objectives can be achieved on their farm.*

The practices that are suggested have been drawn from best practice guidelines and existing assurance schemes around the world, and so individual practices will vary in their applicability to various dairying regions. They are not intended to be legally binding and readers are encouraged to select and implement those guidelines that are of relevance to their situation.

This guide contains 50 pages and can be downloaded [here](#)

#### **Bulletin of the IDF No. 450/2011**

##### **Determination of Water Content in Lactose by Karl Fischer Titration – Interlaboratory collaborative study**

The traditional gravimetric oven drying method for determining water content in dried dairy products does not give reliable results when applied to lactose. A Karl Fischer Titration method that determines molecular water has been developed and tested in an international collaborative study to establish its precision (repeatability and reproducibility) for its adoption as an international standard by IDF and ISO (ISO 12 779 | IDF 227).

Pages: 14 - Paper: 18.00€ - Electronic: 15.00€

#### **Bulletin of the IDF No. 449/2011**

##### **Integrated Supply Chain Management**

The Bulletin sets out in two chapters how Integrated Chain Management (ICM) for Food Safety is an important tool in ensuring the hygienic safety of food products, including milk and milk products. One chapter sets out the leading principles of ICM and the second provides the guidelines on integrity of suppliers' milk and examples of approaches that can be used to counteract systematic and/or large scale adulteration.

Also an article setting out the principles of Fourier Infra-Red Spectroscopy (FIR) and its application to detecting adulteration of milk.

Pages: 31 - Paper: 45.00€ - Electronic: 40.00€

### **IDF Events in 2012**

#### **IDF Regional Conference on Domestic Milk Supply and Demand Systems: Sharing Success Beyond Challenges!** 20 - 23 March 2012, Seoul, Korea

*Sharing the experiences of the leading dairy countries that have worked through numerous challenges to develop successful milk supply and demand systems and marketing strategies*

<http://www.2012idfrc.or.kr/>

#### **2012 IDF Cheese Ripening & Technology Symposium** 20-24 May 2012, Madison, Wisconsin, USA

*Gathering top international cheese scientists and technologists from academia and industry for presentation and active exchange of latest scientific findings and knowledge on innovative technological applications in the field of cheese ripening and technology*

<http://www.idfcheeseus2012.com/>

#### **2012 IDF/ISO Analytical Week** 4 - 8 June 2012, Tel Aviv, Israel

*The annual topical event for experts in the field of standardisation of methods of analysis and sampling for milk and milk products*

<http://www.idf-iso-analytical-week.org>.

#### **IDF/INRA International Symposium on Spray Dried Dairy Products** 19-21 June 2012, St. Malo, France

*Bringing together research and industry leaders to share ideas and information about new developments in the manufacture of dairy powders and the functionality of these products as food ingredients*

<http://colloque.inra.fr/sddp2012>

#### **IDF World Dairy Summit** 4-8 November 2012, Cape Town, South Africa

[www.wds2012.com](http://www.wds2012.com)