South Africa
National Committee

Milk South Africa
Melk Suid-Afrika

REPORT ON PARTICIPATION IN THE WORLD DAIRY SUMMIT AND BUSINESS MEETINGS OF THE INTERNATIONAL DAIRY FEDERATION IN DAEJEON, SOUTH KOREA DURING OCTOBER 2018

"DAIRY FOR THE NEXT GENERATION"

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PREFACE

The 2018 Summit of the International Dairy Federation (IDF) took place in Daejeon in Korea from 15 to 19 October. The theme of the conference was "Dairy for the next generation".

As usual, a strong delegation from the primary and secondary dairy industry represented South Africa at the conference.

The South African delegation comprised:

Dr Koos Coetzee	Project Manager, Industry Information of Milk SA; MPO Chief Economist, Member of the IDF Scientific Program Co-ordinating Committee Member of the IDF Standing Committee on Farm Management
Alwyn Kraamwinkel	Milk SA director; SAMPRO CEO; IDF director; Member of IDF Standing Committee on Dairy Policies & Economics; Member of IDF Standing Committee on Marketing
Melt Loubser	Milk SA director; SAMPRO Chairperson; SANCIDF President Member of the General Meeting of the IDF
Dr Colin Ohlhoff	Member of Milk SA's Research & Development Committee (Field of expertise: Environment and Sustainability)
Prof Elna Buys	Head of Dept Consumer and Food Sciences, UP (Field of expertise: Dairy and meat microbiology); Member of IDF Standing Committee on Hygiene; Member of IDF Standing Committee on Harmonization of Microbiological Standards
Maretha Vermaak	Dietician: Milk SA Consumer Education Project; Member of IDF Standing Committee on Nutrition and Health
Christine Leighton	Project Co-ordinator: Milk SA Consumer Education Project; Member of IDF Standing Committee on Marketing; Chairperson: International Milk Promotion Group

Alwyn Kraamwinkel was elected as a director of the IDF, and Dr Koos Coetzee was again elected to the IDF Science and Programme Coordination Committee (SPCC) at the general assembly which took place before the conference.

Milk SA honours the effort of these persons beyond their local responsibilities, as we realize that their sacrifices are for the greater good of the South African industry.

We trust that this report will provide insight into the amount of knowledge that is generated and shared within the international dairy community, and that the reader will gain some food for thought pertaining to his or her position in the SA dairy industry.

Also, you are kindly reminded to save 24 September to 1 October 2020 when the World Dairy Summit will again be hosted by the South African dairy industry in Cape Town.

THE INTERNATIONAL DAIRY FEDERATION & WORLD DAIRY SUMMIT

South Africa
National Committee

An introduction

- The International Dairy Federation (IDF) is the only organization that can obtain global consensus on all aspects considering dairying, and represent the global dairy sector towards intergovernmental organizations such as FAO, Codex, OiE and WHO.
- IDF creates a platform to be part of a dairy organisation which has 44 countries as members which produce about 60% of the world's milk.
- IDF has access to a large network of worldwide experts in dairy and is the key authority on dairy standards.
- IDF has four focus areas namely Sustainability, Nutrition, Food Safety and Standards. These focus areas span over nine work areas and 17 Standing Committees of the organisation.
- The dairy industry of South Africa is a member of the IDF through the SA National Committee of IDF (SANCIDF).
- Membership through SANCIDF creates opportunities for South African experts to influence and have access to the latest developments and information of other major international organizations such as the World Health Organization (WHO), the Food and Agricultural Organization of the United Nations (FAO), World Animal Health Organization (OIE), Codex Alimentarius, ISO and many other international bodies at governmental and non-governmental level.
- The IDF World Dairy Summit (the Summit) is an annual meeting of the global dairy industry taking part in approximately more than 2.000 participants from all over the World.
- The participant profile of the Summit includes CEO's and employees of dairy processing companies, dairy farmers, suppliers to the dairy industry, academicians and governmental representatives etc. The Summit is composed of a series of scientific and technical conferences, social events including a welcome reception, farmer dinner, gala dinner, technical and social tours.
- The Summit is an unique opportunity for industry experts to share their knowledge of dairy.
- The IDF's Standing Committees, Task Forces and Steering Groups meet in conjunction with the Summits and involve scientific developments, new approaches to food safety and quality assurance concepts, nutrition and health and on the future orientation of the dairy sector.
- The 2018 Summit was held in Daejon, South Korea and as usual, well-represented by South African delegates.
- wMilk South Africa supports the IDF and its Summit financially and through its projects, as they find common ground in its objectives and projects.

THE DAIRY INDUSTRY IN SOUTH KOREA

- Korea's modern dairy sector began in 1902 with 20 Holstein cows
- First modern milk processing facility was built in 1937
- 5,300 dairy farms, over 404 thousands cows
- Average annual milk production : over 2 million tons
- Average milk/dairy consumption per person: 76.4kg annually

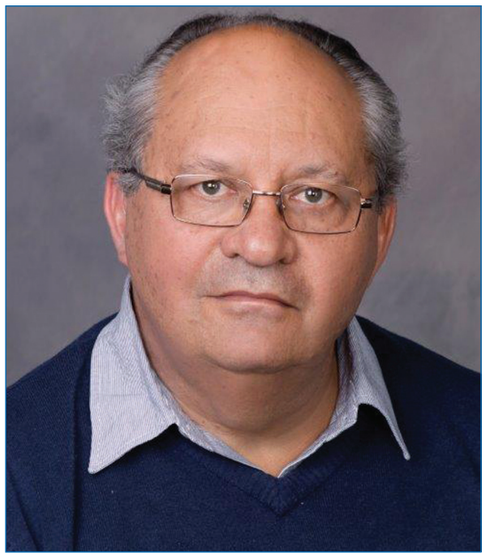
The beginning of dairy in Korea is not known exactly because there are no historical records, but there is a record that milk cow has been cultivated from the time of Goguryeo (37 ~ 668 BC). The actual start of the Korean dairy industry came in 1962 when it imported cows from New Zealand. Since 1962, more than 100,000 cows have been imported for about 20 years, playing a major role in the quantitative development of the dairy industry.

Thanks to aggressive support from the government in the 1960s, the consumption of market milk was steadily increased, and the basis for the production of condensed milk and powdered milk was established to control the amount of milk. In addition, infant formula was produced and contributed to the health of infants.

In the 1970s and 80s, as the production and consumption of milk increased along with the improvement in national income, dairy products became more diverse, including lactobacillus fermented milk, butter as a concentrated food in butterfat, cheeses as high-protein foods, and ice cream. The government's dairy promotion policy, including support for introducing production facilities for dairy products and prohibiting the importation of dairy products except for control of supply and demand, played a major role.

In 1997, the Dairy Promotion Law was established to promote the dairy industry, and Korea Dairy Committee was founded in 1999.

In 2002, with the introduction of the quota system and a more efficient supply/demand management system, Korean Dairy Committee contributes greatly to the stability and development of the dairy industry by creating a stable production environment.



Dr Koos Coetzee

1. Business meetings

1.1 Scientific program coordinating committee (SPCC)

The SPCC met on Thursday 11 October 2018 in Daejeon, Korea. IDF Director-general Carolyn Edmond stressed the importance of completing proposed work items. She invited SPCC members to stress the importance to Standing Committees s to deliver on work item they have agreed to put on the work programme. The committee should decide to stop unproductive work items.

Plant-based beverages

The multi-disciplinary task force on plant-based beverages met 4 times already and works with several Standing Committees. Laurent Damiens gave a presentation on the threat of plant-based imitation dairy products especially in the light of the growth of the vegan movement. In Canada 7% of the population support a vegan lifestyle, in Brazil 19% has already tried it and in France more that 6% is vegan. Plant-based beverages raise concern for the whole sector, who needs to think strategically about how to position its message.

Priority items for 2019

The committee confirmed the following priority items for 2019.

- Protein from a dairy perspective
- Front of Pack Labelling/Nutrient profiling
- Alignment of food additives
- Plant-based beverages
- Digital technological innovations to support the dairy sector. Reporting on dairy declaration of Rotterdam
- Mapping out School Milk Programs worldwide
- *Mastitis:* Latest scientific knowledge
- Labelling initiatives in several countries
- Antimicrobial resistance

Structure of IDF Conferences

C Emond told SPCC that the IDF Head Office considered options for structure of conferences for the WDS in 2019. The current thinking was to stop the silo approach and work more on multi expert topics, in order to have fewer conflicts and more discussions. A possible type of schedule could be a common session in the morning and technical sessions in parallel in the afternoon. Broad topics would be nutrition (sugars), sustainability, dairy safety quality.

1.2 Standing Committee on Farm Management (SCFM)

The SCFM has a wide area of concern. A large part of the work of the committee is receiving and commenting on feedback from other ISDF standing committees and action teams. The following is a selection of aspects discussed during the meeting.

Dairy farmers' roundtable

On the Saturday afternoon, the SCFM hosted a dairy farmers' roundtable. The main purpose of this roundtable is to provide dairy farmers with an opportunity for informal discussions about key global dairy farming issues prior to the IDF Conference. Farmers mentioned various issues that concern them. The uncertainties of the market place is a concern for all farmers. Farmers mentioned the aging farmer population, difficulty of enticing young people into farming, and difficulties of succession planning as problems. Koos Coetzee (ZA) proposed the three P's, profit, planet and people as a framework for addressing farmers' issues.

IDF Guide to good animal welfare practices in dairy production

This meeting discussed this guide. IDF Head office recently sent out the final version for approval by national committees.

Reproductive technologies for farm animals

A survey amongst national committees done in 2018 indicated that the first part of the report should include basis technologies.

Guidelines on the use of sensors for animal health and productivity

A joint task team from the SCFM and the Standing Committee on Animal Health and Welfare works on this item.

2. The World dairy summit

Former UN Secretary-General Ban Ki Moon delivered the keynote address at the conference. Mr Ban described milk as a complete food and he is impressed with the dairy industry's commitment to the sustainable provision of nutritious dairy products to the expected 9 billion people in the world.

He pointed out that the dairy industry plays an important role in achieving the United Nation's Sustainable development goals of poverty eradication, banishment of hunger, good health and well-being and gender equality. The industry creates employment through its value-chain; it generates the third largest output and the largest international trade volume among all agricultural industries. This is done while the industry promotes environmental protection through its actions to minimise carbon and water footprints by minimising greenhouse gas emissions and water and soil pollution.

2.1 The Korean dairy sector

Korea produced 2 Mil tonnes of milk in 2017, ranking 51st in terms of global milk production. In 2017 there were 5 270 dairy farms with 409 000 cows in Korea. The average size of a Korean dairy farm has grown to 62 heads of cattle per farm. The Korean dairy industry is 50% self-sufficient. Liquid milk is the major product category with 76% of production consumed as liquid milk and 9% as fermented products. Three major dairy processing companies Seoul Milk, Maeil and Namyang are responsible for 60% of total processing. The production cost of raw milk is about 0,60 USD per kg (R 8,14/ litre). Their producer price is 156% higher than average world prices. The internal price structure is managed with a controlled one-price system and this encourages processing plants to use imported products.

There were large changes in the Korean dairy industry. The number of farms decreased from 33 000 in 1990 to the current 5 270. The number of cows per farm increased to a peak of 70+ in2013 and has since decreased to 62. There is a decrease in the consumption of liquid milk and an increase in the consumption of dairy products and especially cheese.

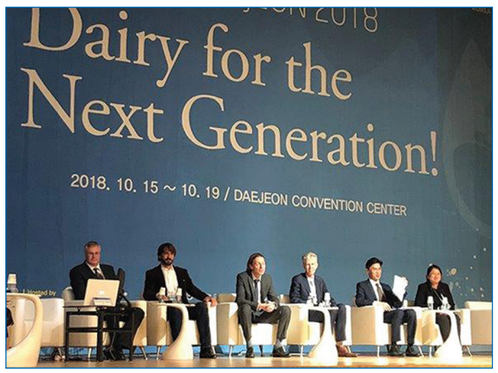
2.2 World dairy leaders' forum

Industry leader Seon Hee Kim, CEO of Korean dairy company Maeil gave his vision for the future of the dairy industry. In Korea, the per capita consumption of white milk is decreasing while the consumption of cheese and butter increases. In an attempt to boost liquid milk consumption Maeil developed alternative milk drinks such as ready to drink cafe latte and other coffee-based drinks. They also developed speciality products such as lactose-free and organic milks. A challenge for the industry is to adapt to the fast aging Korean population.

Michael Dykes, President and CEO of the International Dairy Foods Association talked about future challenges facing the US dairy industry. In the US milk supply exceeds milk demand. Production grows at 1,4% per year while demand only grows at 0,6% per year. This has resulted in the US exporting about 20% of milk, on a skimmed basis and their exports will increase in future. US productivity is increasing. Milk production per cow increased by 33% from 1998 and there is genetic potential for further increases. Cow numbers remain stable at 9 million heads and the average herd size has increased to 225 cows in herd. The industry faces challenges in terms of the decreasing fluid milk consumption, competition from plant-based products and changing diets and attitudes of consumers. He stressed that dairy markets are global.

Henrik Hauggaard, President of Tetra Pak, Japan and Korea provided information on the future of dairy technologies. He emphasised that the speed of change is increasing and that the industry will have to adapt and evolve. All role players in the value-chain have serious worries, farmers are concerned about decreasing profitability, and the dairy processor faces the commoditisation of basic dairy categories and E-commerce impacts on retailers. We have reached the age where the consumers is the undisputed king. We are moving to the so-called fourth industry revolution. The first revolution took place from 1780 with the development of the steam engine, by 1880 mass production with the use of electricity started. By 1970 we went into the third revolution with automation using computers and electronics. Industry 4 uses cyber systems, data and the internet for full connectivity. Industry 4 holds benefits across the value-chain. Processors will enjoy more flexibility, higher food safety, quality, and increased productivity.

Minfang Lu, CEO of Mengniu Dairy gave some insights on dairy sector development in Asia. Asia produces the highest volume of milk globally, and it achieves the highest consumption growth. In spite of the high total demand, growth in per capita consumption remains low and the region is highly dependent on imports. With strong government support, they will develop a healthy industry.



2.3 Special Conference: The next decade

The opening speaker of this conference Prof. Chun Kyung-soo from the Seoul National University provided an interesting perspective on the cultural aspects of milk as a food, source of wealth and of labour. According to the bio cultural coevolution theory, the ability to digest lactose into adulthood developed simultaneously with pastoralism. In East Asia, the absence of cows resulted in the inability to digest lactose. The use of lactose-free milk and fermented dairy products can grow the East Asian market.

Berthe Tekola from the FAO in Rome presented an FAO outlook. The main drivers of dairy demand are population growth to an estimated 9,8 billion people in 2050, income growth of 2% per year and growing urbanisation. Seventy percent of the world population will live in cities in 2050. Milk production will grow by 26% to 2027. Echoing Ban Ki-moon's statement, she emphasised that the livestock can contribute directly to the achievement of each of the SDGs. This can be done by "producing more with less"

Stephanus Hubertus Gay from the OECD reported on the joint OECD-FAO outlook report published in June/July. The report expects agricultural trade growth to slow down; real prices to reason at or even below current levels and that there will be several uncertainties. The FAO-OECD outlook report did not provide any new insights.

According to Prof Thia Henderson from University College Cork in Ireland, the global food system is flawed with high environmental impact, concerns about animal and human health, economic conditions and power in the supply chain and threats to food security and safety. Veganism combined with the development of imitation dairy products can seriously damage dairy demand. She explained how the Irish dairy industry developed a national food sustainability program.

2.4 Farm Management Conference

2.4.1 Dairy animals for the future

The full-day conference looked at three future aspects namely dairy animals. The people of dairy and the future of dairy farming. In the first section, Marten Shaffer from DataGene in Australia told delegates how the integration of different data sources could aid the farmer of the future. The system integrates Information from herd health practitioners, farmers' own software, and the national animal identification and milk recording schemes as well as information added by the farmer are into a decision support system for farmers.

Jean-Louis Peyraud from France emphasised the role of grassland-based production in sustainable dairy farming. If one compares food production from ruminants and monogastric animals, two negative factors face ruminants namely a higher carbon footprint and a lower efficiency in converting plant protein into animal protein. The growth of global demand for animal products will increase pressure on the livestock sector. He promoted a more holistic approach to measuring the impacts of dairy production systems. The competition between feed for animal and food for humans actually only concern those proteins of plant origin that are consumable by humans but used as animal feed. It should not include the non-edible parts of plants. Grassland-based milk production produces more protein and energy per kg of human edible plant protein than mixed dairy farming systems. It is possible to mitigate GHGs emission by good crop and livestock husbandry, selection for low methane production and precision livestock farming. His final message is that ruminants can use marginal land not suited to crop production to produce edible protein.

The Farm management Conference dealt with data and technology, animals and the management of people in dairy farming. In the first session on data and technology Nick Evans illustrated how farmers can filter the growing stock of data available to them into management tools that can help them to optimise their decisions in future. Data is available from different sources in different formats. Their company collect this data, change it to a standardised format, analyse and interpret it and then supply the resultant information to decision makers. Agribusinesses are currently the main users of these data although there are a few farm applications available.

The second speaker, Dr Bernadette O'Brien from the Animal and Grasslands Research Centre in Ireland discussed the use of precision tools for pasture management. Future farming will be data driven and decisions will be based on real data. There is a significant potential to use precision technology to provide cost-effective solutions to farm problems. In pasture dairy systems variation in the quantity and nutritive value of pastures influence dry matter intake. The challenge is to measure and manage this variability. She illustrated with a few examples how farmers can use precision information to manage pasture-based dairy herds. This includes the use of plate-meters with GPS linkage, remote sensing and a grazing management decision support tool. Future development is envisaged in field of estimating of feed intake by cows with sensors to measure grazing behaviour and activity and determination of location data for individual animals.

2.4.2 People: Skills for the future, successor, and mental health

Yong Suk Son from the Korea University discussed the labour supply and succession in Korean dairy farming. More than 80% of Korean dairy farmers are over 50 years of age, with more than half these farmers over 60 years. Seventy percent of labour consists of own and family labour with a modal number of two workers per farm. The dairy farming sector fails to attract newcomers because the investment to start dairy farming is very high, Prospective new entrants perceive as a sector with a heavy workload and preconceptions about the dairy industry. The threats of free-trade agreements and various limitations create the impression of an uncertain future. However, it is possible to attain a successful succession to dairy farming. This can be done by emphasising the benefits of dairy farming in terms of job security and profitability relative to other sectors, by further training, school and tertiary education.

Chris Lewis, chairperson of Federated Farmers New Zealand Dairy explained how the New Zealand dairy industry entices the next generation into the dairy business. The New Zealand dairy industry flourishes and thus need more good people to continue its growth. It is their strategy to build great workplaces for New Zealand's most talented workforce. They also run an apprentice program in which the apprentice can gain work experience and gain a recognised qualification. Dairy farmers have access to a guide on creating a good workplace. The manual explains the five pillars of great workplaces.

The five pillars are:

a balanced and productive work time,
fair remuneration,
wellness, wellbeing health and safety,
effective team culture, and
rewarding careers.

David Cotton, dairy farmer from the United Kingdom explained how his dairy business developed over the last twenty years. His father started the business 60 year ago, milking 40 cows in a tie-stall barn. Twenty years ago, they milked 140 cows in a seven-a-side herringbone parlour and today he milks 250 cows in an eighteen a side parlour with the same number of employees. He stressed the importance of ongoing learning especially for farmers. He diversified in developing a caravan site and converting lower farm offices to accommodate various businesses. It is becoming more difficult to get good labour especially with the unsociable hours required on a dairy farm, it is difficult to keep up with technological development and pressure from supermarkets and customers will force them to include grazing. Political interference and legislative issues remain challenging.

2.4.3 Farming for the future

In this session, Martin Scholten from the Wageningen University in the Netherlands discussed challenges facing the dairy industry. Hunger and malnutrition increases and the world will need 70% more protein by 2050. Thirty percent of crops are used as animal feed and more than 50^ of crops and food are wasted or unused. Fresh water is scarce. According to him, the next food revolution will be a white revolution. It will have to be a responsible white revolution. Dairy production will have to change from a production efficiency basis to a resource efficiency basis. He promoted a concept of a circular production process with recycling and zero food waste. Crop production based on the use of circular fertilisers, diversity in cropping programs and the valorisation of crop residues. He recommends circular feed use, customised farm practises, manure utilisation and breeds adapted to the environment. If all produced agro-biomass, including crop residues, food waste and manure are used to produce food; the dairy industry's different footprints will reduce.

I presented the final paper of this section on the impact of disruptions and ways to limit this impact on the dairy value-chain. Farmers face various challenges. New technology enables higher productivity but smaller producer cannot afford to implement it. Farmers use biotechnology like GMO seed to improve productivity and use less chemicals. However, consumer perceptions can result in this technology being banned. The correct and responsible use of biotechnology is important. Adverse climatic events like floods and drought, and disease outbreaks cause disruptions to a farmer's business. On the retail side, consumer perceptions disrupt the demand for dairy products. The growing vegan sector, coupled with the development of imitation dairy products already poses serious problems in developed markets. The development of 3-D printing of food makes it possible to create imitation dairy products. Consumers' perceptions about the environmental impact of livestock, animal welfare issues, and food safety can seriously harm the market for dairy products. The dairy industry must ensure that they fully inform the consumer about the safety, environmental impact and health benefits of using dairy products. Sustainable food production is based on the three Ps namely profit, people, and the planet. In the fast changing world with expected and unexpected disruptions happening, we should add innovation as a fourth element of sustainability.

Alwyn Kraamwinkel

Introduction

1. The meetings of the Board of Directors of the IDF, Standing Committees of the IDF, the World Dairy Summit of the IDF and the meetings of the GDP took place from 11 October 2018 to 18 October 2018.

2. The undersigned attended and/or participated in the following meetings:

- Board of Directors of the IDF
- Annual General Meeting of the Global Dairy Platform
- Standing Committee on Dairy Policies and Economics
- Standing Committee on Marketing
- Meeting of Chairs of Standing Committees, members of Science Programme Coordinating Committee, IDF personnel and Board of Directors of IDF
- General Assembly of the IDF

- The following sessions of the World Dairy Summit:
  - Leaders Forum
  - IDF Forum
  - Dairy Policies and Economics
  - Parts of the session in respect of Marketing and in respect of Environment
  - Parts of the session in respect of Animal Health and Welfare.

From the South African organised dairy industry, a number of persons who serve in particular structures of the IDF, participated in the World Dairy Summit.[2])

3. It is not functional to report in detail on the wealth of information and issues attended to by the meetings referred to in the previous paragraph. Details are available at the websites of the IDF and the GDP and the work areas and strategic goals of the IDF are described in the attached Annexure A.

4. In light of the previous paragraph, the purpose of this report is to share major observations made in respect of the meetings referred to in paragraph 1, as well as in light of informal discussions with representatives of other countries.

5. In the next sections of the report, observations are described regarding a number of issues which are of major importance in respect of the future development and growth of the international and South African dairy industries, namely:
   - The policies of different countries in respect of their dairy industries;
   - The competition between plant based food and food originating from animals;
   - Animal welfare;
   - Environment protection;
   - Food safety; and
   - The use of antimicrobial agents.

To meet the challenges in respect of the abovementioned issues, actions by the international and local organised dairy industries, as well as actions by individual members of the dairy industries, are necessary.

1. *SAMPRO and the MPO are members of the GDP, the objective of the GDP overlaps with that of the IDF and is described in the annual report of the* ***GDP as follows: "GDP continues to facilitate the development of a complete research portfolio of the nutritional, environmental, social and economic impact of dairy, with the goal of supporting evidence-based policies and recommendations.".*** *Dr Judith Bryans is the President of the IDF and is a member of the board of directors of the GDP.*

2. *Mr Melt Loubser, member of the General Meeting of the IDF, Mrs Christine Leighton, member of the Standing Committee on Marketing, and Chair of the International Milk Promotion Group, Dr Koos Coetzee, member of the Science Program Coordinating Committee and the Standing Committee on Farm Management, Mrs Maretha Vermaak, member of the Standing Committee on Nutrition and Health, Dr Colin Ohlhoff who focussed on environmental issues, Prof. Elna Buys is a member of the Standing Committee on Hygiene, and member of the Standing Committee on Harmonization of Microbiological Standards, and Mr Alwyn Kraamwinkel, member of the board of directors, Standing Committee on Dairy Policies and Economics, and Standing Committee on Marketing.*

Policies of different countries in respect of their dairy industries

6. The policies of different countries in respect of their dairy industries are very different and are positioned at, or between, two extreme approaches, namely:

   - **Production orientated.** The essence of this approach is that everything is done in order to protect the production of raw milk and dairy products in the countries concerned, with no or little attention to the impact of the approach on consumers and industrial users of dairy products. Typically, this approach put the focus on raw milk production and less focus on the value adding by the secondary dairy industry and includes measures to manage (or influence) supply and demand of raw milk and dairy products, as well as subsidies to raw milk producers. This approach is only viable if imports are severely restricted as the approach typically results in high prices for raw milk and dairy products, which can only be achieved by preventing, or severely restricting, imports from more competitive countries. Obviously, the higher prices resulting from this approach render dairy products less competitive relative to the other products and services available to consumers and it limits consumption of dairy products and thus the growth and development of the dairy industry.

   - **Market orientated.** The essence of this approach is that the dairy industry should serve the needs of consumers and industrial users of dairy products and that market forces (subject to competition legislation), and not government measures, shape the structure and behaviour of the dairy industry. As a result, the structure and behaviour of dairy industry is continuously subject to change in favour of the more competitive members of the dairy industry. Typically, this approach includes import dispensations which allow imports to play a meaningful role in the domestic market of the country which follows this approach.

7. Most dairy producing countries apply policies which are closer to a production orientated approach, than to a market orientated approach. Different arguments are used to justify the more production orientated approach and it includes arguments about protection of environment, animal welfare, food safety, poverty reduction and maintenance of tradition lifestyles and rural communities. For example:

   - Japan focuses on maintaining the traditional industry, severely restrict imports and the raw milk price in Japan was in 2017, according to the IFCN[3]), 153.2 percent higher than the "world market price";

   - India focuses on poverty reduction, imports are so restricted that it represents 0.1 percent of consumption, the raw milk price of India was in 2017, according to the IFCN, 15.6 percent higher than the "world market price" and the imports represented, according to the IFCN, 0.9 percent of consumption;

   - The European Union (28 countries) (EU) supports the production of raw milk through direct and indirect subsidies. The major role of dairy companies, of the EU in respect of international trade is, to a large extent, the direct result of the past and present artificially low raw milk prices in Europe created by the past and present support to raw milk producers. This support to raw milk production, enabled manufacturers of dairy products in the EU to become major exporters of dairy products. As a result, prominent European producers of dairy products (typically cooperatives with raw milk producers as members) are in favour of support to raw milk producers and measures to limit competition in the EU market from outside the EU, through various measures such as import duties and prevention of competition of genetic modified plant products as well as the import of animal products in respect of which the animals received hormone treatment. In 2017, imports by the EU of dairy products represented 0.8 percent of the consumption and the raw milk price in the EU was 8.4 percent higher than the "world market price"; and

   - The dairy industry of Canada is highly regulated and it includes measures about the volume of production of raw milk and prices. In 2017, the raw milk price in Canada was, according to the IFCN, 83.4 percent higher than the "world market price", the self-sufficiency rate was 99 percent and the imports represented 7.5 percent of the consumption.

3. *International Farm Comparison, Dairy Report 2018*

8. The extent to which the South African dairy industry is subject to policy shaped by a market orientated approach, is exceptionally high. According to the IFCN, the raw milk price of South Africa is 1.1 percent above the "world market price" and imports represent 9.3 percent of consumption.

9. Taking into account that the views resulting in the policies of different countries, are deeply entrenched in the minds of the leaders of the relevant industries and policy makers in the countries, it is not realistic to expect in the foreseeable future, any major weakening of the production orientated approach of most countries. As a result, the distorted international trade in dairy products will remain the reality. The EU in particular focus on increasing the export of dairy products on the back of especially artificial low raw milk prices created by past and present support to raw milk production and to restrict, as far as possible, imports of dairy products by the EU, through whatever measure is available.

10. Uncertainty regarding policies of different countries in respect of international trade of dairy products is on a higher level than in the past, due to:

    - The ambition of the President of the USA to change international trade agreements, his trade restrictions on specific countries, and his negative attitude in respect of the World Trade Organisation (WTO). The WTO played a major role in liberalization of the international trade and gives smaller countries more negotiation power than if smaller countries negotiate individually with bigger countries outside the WTO. Bigger countries realise this position and focus on agreements with individuals or groups of smaller countries outside the WTO negotiation structures;

    - The exit of the United Kingdom from the EU;

    - The boycotts in respect of Russia; and

    - New trade agreements between different countries.

11. In conclusion, international trade in dairy products will, in the foreseeable future, continue to by shaped by past and present policies of different countries which are production orientated, or significantly shaped by views which are production orientated, and not by the natural (not artificial) competitiveness of the different countries in respect of the production of raw milk and dairy products.

Competition between plant based food products and food products of animal origin

12. In major countries there is a growing and very significant trend to promote plant based food products at the expense of products from animal origin (especially meat and dairy products) and to discredit products of animal origin. In the international press, references are made to the "plant based dairy alternative momentum" and major dairy enterprises are increasingly involved in the production and marketing of the so-called "plant based dairy alternatives". The description "plant based dairy alternatives" is highly misleading as the nutritional value of the so-called alternatives is much lower and due to the other differences between dairy products and plant based food products.

13. The position described in the previous paragraph, created a shift to plant based food products in important markets.

14. The motivation for the promotion of plant based food products are presented to the public and policy makers as scientific evidence regarding environment, animal welfare and nutritional issues, and as highly emotional arguments (plants don't get babies and do not make noises). An example of the emotional attack on dairy products is a poster, with the message that presenting children with milk and meat as food is a crime, was prominently displayed in a particular European country.

15. A very serious issue is that there are different schools of thought in the scientific communities regarding:

    - The differences between the impact of the dairy industry on the environment and the impact of plant based food products on the environment; and

    - The nutritional value of dairy products relative to the nutritional value of plant based food products.

16. There is good reason to expect that the World Health Organisation will issue early in 2019 a report compiled by the part of the scientific community that has a negative view regarding dairy and other animal products. It should be taken into account that for a few decades, the dominant element of the scientific community promoted very negative views regarding dairy fat and science which proves the opposite, became over time so dominant, that the negative views were largely pushed aside.

17. Complex scientific issues are relevant in the debate regarding the nutritional value of plant based food products and the nutritional value of dairy products and the impact of the production of dairy products on the environment relative to that of plant based food products. To deal successfully with these issues research and co-operation between the dairy industries of different countries are required.

18. Over many years the work of the IDF contributed immensely to the scientific evidence regarding the nutritional value of dairy products and the impact of the production of raw milk and dairy products on the environment. In the last year, the Consumer Education Project of Milk SA contributed significantly to the work of the IDF regarding the relative nutritional value of milk and plant based beverages.

19. The relative impact of plant based food and food of animal origin, on the environment, as well as the relative nutritional value of the two types of food products are high on the work programs of the IDF and the GDP and this position will remain a reality in the coming years.

20. In South Africa, the Consumer Education Project of Milk SA and the Research Project of Milk SA should continue their efforts to promote balanced science based views regarding the issues concerned.

Animal Welfare

21. The welfare of dairy animals is extremely important and it impacts on the views of consumers in respect of dairy products and thus on the consumption of dairy products and therefore on the important role of dairy products in respect of nutrition.

22. In the first place, there should be a common understanding regarding the standards required to ensure (or measure) dairy animal welfare, and in the second place, the issue is to what extent raw milk producers adhere to the standards.

23. Regarding the standards required to ensure (or measure) dairy animal welfare, the SABS, with meaningful contributions by the Dairy Standard Agency and the Research Project of Milk SA, finalised a set of standards. The IDF will publish its reviewed standards early in 2019. The "Code of Practice for Milk Producers" of Dairy Standards Agency, of which the first edition was published in 2006, also contain information relevant in respect of animal welfare.

24. As there are different unrealistic views regarding what dairy animal welfare entails, it is an important challenge for the organised dairy industry and individual members of the dairy industry to promote the acceptance by the general public and interest groups of the standards referred to in the previous paragraph.

25. Just as important as the promotion of a common understanding of the requirements which should be met in respect of animal welfare, is the actual compliance with the relevant standards by individual raw milk producers.

26. It is the task of individual raw milk producers to accept and apply the standards in respect of animal welfare and it is the task of individual manufacturers of dairy products to ensure that their suppliers of raw milk meet the standards. Also, the compliance with dairy animal welfare standards should be appropriately conveyed to the relevant target markets and in this communication, the individual members of the dairy industry and the organised dairy industry, have each a role to play. To enable the organised dairy industry to execute this role, information regarding at least a number of indicators of animal welfare, should flow from the raw milk producers and manufacturers of dairy products, to the organised dairy industry.

Environment protection

27. As indicated earlier in this report, the issue of the impact of raw milk production on the environment is important as protection of the environment is of crucial importance and as negative views regarding it, is used to promote anti-dairy views.

28. Various initiatives exist in the IDF and the GDP to measure the impact of the dairy industry on the environment, to promote actions to limit it and to provide science based information regarding it to policy makers.

29. The Research Project of Milk SA contributed to the work of the IDF regarding greenhouse gas emission and its "Dairy Sustainability Framework" initiative, and the Manager of the project compiled for Agri SA, a very meaningful document regarding greenhouse gas emissions of the agricultural industry and the merits of tax in respect thereof.

30. The role of the IDF in respect of the "Dairy Sustainability Framework" initiative, the "Livestock Environmental Assessment and Performance" (LEAP) initiative with the Food and Agricultural Organisation of the United Nations (FAO) and the "Global Agenda for Sustainable Livestock" (GASA), are very important. The South African National Committee of the IDF and the Research Project of Milk SA decided to contribute to the finance and otherwise to the LEAP initiative, and participates in work of especially the "Dairy Sustainability Framework".

31. The individual members of the dairy industry (raw milk producers and manufacturers of dairy products), carry the prime responsibility to take actions to minimise their impact on the environment and it requires formal structured planning, the execution of the plans and the measuring of results.

32. The ambition should be that the organised dairy industry should communicate macro messages regarding the actions taken by the dairy industry members to protect the environment, to the public and the international initiatives referred to in paragraph 30.

33. To achieve the ambition referred to in the previous paragraph, there should be agreement with, at least, a sample group of raw milk producers and manufacturers of dairy products, about the variables which should be taken into account, the ways in which results will be communicated to the organised dairy industry, and how the macro message should be communicated to the different target audiences.

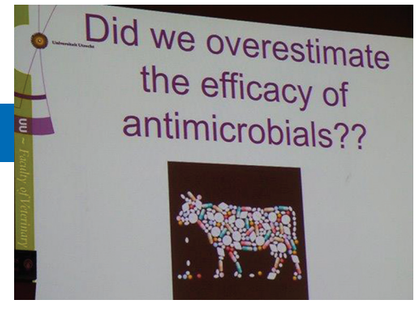
Food Safety and quality

34. The role of the IDF in respect of food safety and quality of dairy products, is described as follows:

"Dairy Safety and Quality
IDF strives to create a global consensus on risk assessment, as well as promote science-based and informed approaches to food safety and quality. IDF works with key international organizations to ensure the safety and quality of dairy products are continually improving. The work covers microbiological as well as chemical and physical risks. The evolution of testing and monitoring, alongside IDF research and publications on issues like residues and contaminants, pathogens and spoilage organisms, antimicrobial resistance, the impact of zoonoses, pasteurization and new classes of hazard control measures, effectively safeguard and build upon the integrity of dairy globally."

35. It is common knowledge that the reputation, consumption and production of food products including dairy products, can suffer severely due to failure to adhere to food safety and quality standards.

36. In light of the previous paragraph, the work of Dairy Standard Agency and the Regulation and Standards Project of Milk SA, and strong support for these initiatives by individual members of the industry, will remain of great importance in the foreseeable future. The guidance provided by Dairy Standard Agency is captured in the "Code of Practice for Milk Producers" and the "Code of Practice for the Secondary Dairy Industry" and Dairy Standard Agency provides, in terms of a cost recovery pricing model, independent audit services to the members of the primary and secondary dairy industries.



The use of antimicrobial agents

37. This issue is internationally and in South Africa, of great importance, due to:

- The development of antimicrobial resistance;
- The impact of the use and misuse of antimicrobial agents on the image of dairy products and the consumption of dairy products. Anti-dairy and pro-plant lobby groups are using arguments regarding the use of antimicrobial agents by the dairy industry, to promote their messages;
- The impact on human health; and
- Promotion of antimicrobial agents by the manufacturers of these products focus on increased sales and not on minimising the use of the products.

38. Research conducted in the Netherlands, as presented during the World Dairy Summit, clearly showed that decrease of the use of intramammary antimicrobial agents in respect of dry cows, supported by better management, resulted in lower somatic cell counts, and decrease in antimicrobial resistance. Obviously, the decrease of the use of antimicrobial agents created meaningful cost savings for raw milk producers but also less sales of such agents.

39. The presentation, referred to in the previous paragraph, also conveyed the message that there is a great need to convince, not only producers of raw milk, but especially the veterinarians who advise the producers, of the viability of selective use of intramammary antimicrobial agents.

40. It is clear that it is beneficial for the dairy industry and practically possible, to prevent the unnecessary use of antimicrobial agents by raw milk producers. It is not good enough to ensure the absence of antimicrobial agents in milk as the unnecessary use of such agents creates costs for raw milk producers, it increases antimicrobial resistance and is harmful in respect of the image of dairy products and thus the consumption of dairy products.

41. The appropriate use of antimicrobial agents is primarily the task of the individual members of the dairy industry but aspects thereof are of collective interest and are receiving attention from the Research Project of Milk SA.

Alwyn P Kraamwinkel 1 November 2018

Dr Colin Ohlhoff, Alwyn Kraamwinkel, Dr Koos Coetzee, Andrew Hoggard (Australia)

IMPRESSIONS OF THE WDS 2018

Melt Loubser

General

This general feedback report might add value to official discussions between IDF and SANCIDF. The IDF is an organization that deals with the challenges common to the global dairy industries. It is a world dairy asset of vital importance.
The scientific approach to issues, the collaboration with world standard setting bodies including WHO and FAO, it's collaboration with and consultation to Codex, the scientific collaboration with GDP and the brand of IDF as the leading authority on dairy matters, are some of the reasons highlighting the importance of this federation.
The value that IDF adds to Dairy Industries of the world comes at a fraction of the cost of what it would be if individual countries were to deal with common challenges on their own.

The South African Dairy Industry has been a long standing full member of the IDF and we shall strive for this to continue into the future. South Africa is an active participant in the workings of the IDF via its various involvement in the standing committees, the board of directors, it's role in the scientific programs and the willingness from SA to act as the host for the yearly World Dairy Summit in 2012 and again in 2020.

Annual General Meeting

The AGM took place as scheduled with most member countries present. As international President of IDF, dr Judith Brown handled the meeting with a great deal of ease and her report on the activities of the IDF for the past year was informative. It is clear from the reports that she remains highly devoted to the IDF and various trips were made by herself in order to strengthen the relationships between IDF and other member and potential member countries. In general members

were satisfied, but there are a couple of concerns which I believe is noteworthy and were not necessarily expressed by member countries in strong enough terms. The financial difficulties of the Federation has been ongoing for a couple of years or for as long as I participated in the Annual General meetings of the IDF. The solutions to this problem can only be found either by increasing membership numbers, increasing membership fees or decreasing of cost which in the case of IDF will basically mean a reduction in staff numbers or staff cost. Due to this constraint, it is obvious that fiscal discipline is of utmost importance. Past leaders of this organization has done things that cannot be aligned with fiscal discipline of a members organization. For example excess funds in the past were invested in stock markets which resulted in big losses incurred by the IDF. The past financial year there were big deviations, in excess of 20%, to the approved budget of 2017 for reasons that was explained, but not necessarily to my satisfaction. It is also obvious from the approved budgets that large percentages of the budget are spent on traveling and other arrangements for the President and Director General. There was also an indication from the Director General that she would need to visit SA to inspect our readiness to host the summit in 2020. I also observed that the budget for the 2018/2019 financial years were not formally approved at the AGM. All of the above-mentioned are indicators of a relaxed attitude towards fiscal discipline in an environment such as the IDF. I believe that this principle needs to be highlighted in an appropriate way. I propose moving forward that we advocate for the formation of an audit committee which consist of external members with the necessary financial literacy and fiscal discipline. Secondly that a chart of authority be drawn up indicating at which level member countries need to give permission for excess deviation in expenses above approved budgets.

Opening ceremony

The opening ceremony was highly effective due to mainly the involvement of Mr Ban Ki-moon, Previous Secretary General of the UN. His presence did elevate this ceremony to higher levels and created a big interest from participants into this event. Mr Ban Ki-moon expressed his views and his memory of the nutritional impact of dairy, specifically milk powder during the Korean War, was inspirational and conducive to the international nutritional value perception of dairy. I therefor think that it is important to have the main personality at the opening ceremony and not at the Gala dinner as is planned for the SA event.

Other activities at this opening event was not noteworthy. The World Leaders Forum was interesting, but great care must be taken to ensure that participants to this event remains objective and are not merely extensions of their business objectives.

Other sessions

The attendance from South Africans to all parallel conferences were good and great care was taken to split delegates from SA for maximum take out from these sessions. This will be visible in the reports to Milk SA and SANCIDF from delegates to the sessions and will contribute to the knowledge base of our industry.

What became very eminent this year is the exponential increase in the prominence on environmental and animal welfare issues which also informs the hype on plant based versus animal based nutrition. A substantial part of the conference was devoted to this topic. These sessions were well attended by dr Colin Ohloff from the South African delegation and I am convinced that his reporting from these sessions will add meaningful insights to the South African Dairy Industry on these matters.

Of concern to me is the pace of progress on issues due to the science based nature of activities. A science based approach can take years to render results and in the case of issues such as plant based nutrition versus animal based, can become highly emotional, especially in the plant based circles and this can be detrimental to the message of dairy given the scientific approach by the latter. It will therefore be very important that outcomes based researches are prioritized as far as possible and that small wins are shared with the industry as and when it becomes available. This needs to happen without compromising the end result.

Milk SA will have to intensify its focus on issues of environmental and animal well fare nature including the nutritional debate on plant based versus animal based nutrition.

Tova Avrech (Israel; IDF Director), Alwyn Kraamwinkel, Maretha Vermaak, Gill Slaughter (IOrganizer; WDS2020), Melt Loubser, Xori Ashlanazi (Israel Dairy Board)

Reflecting on the conference as a whole enhances my view that IDF plays a critical role in the world dairy situation. It is difficult to always find words to report on the overall magnitude of such an event. Detailed reports from delegates will highlight a lot of detail on the intellectual side, but there are huge undocumented value in the gathering of the world dairy fraternity, the social interaction, after hour discussion and in general the combining of like-minded individuals.

The South African dairy industry only stands to benefit from the association with IDF. The current arrangement via the funding of membership fees through Milk SA remains excellent value for money as are the various sponsorships for attendance by SA delegates to the World Dairy Summits from Milk SA, SANCIDF, various projects of MSA as well as the reserve fund created from the profits of the 2012 IDF world dairy summit in Cape Town.

It was a privilege for me to attend this event and trust that my overall reporting will add value moving forward.

Melt Loubser

Dr Colin Ohlhoff

Overview

The author attended and/or participated in the following meetings and seminars:

- Standing Committee Meeting on Environment (Saturday, 13th October 2018)
- Standing Committee Meeting on Animal Health and Welfare (Sunday, 14th October 2018)
- Sessions Attended:
  - Keynote Address (Monday, 15th October 2018)
  - World dairy Leaders Forum (Monday, 15th October 2018)
  - IDF Forum (Monday, 15th October 2018)
  - Plenary Session (Monday, 15th October 2018)
  - Various presentations in sessions on Farm Management and Science and Technology of Fermented Milk (Tuesday, 16th October 2018)
  - All presentations in sessions on Environment (Wednesday, 17th October 2018)
  - Various presentations in sessions on Nutrition and Health as well as Animal Health and Welfare (Thursday, 18th October 2018)

Observations and Important Themes from Standing Committee Meetings

It was evident from the discussions of European panel members that the Paris Agreement, as defined at the Paris Climate Conference (COP21), serves as a strong driver for Europe's commitment to limit the increase in global temperature to below 2°C. Adherences to climate change action plans are of paramount importance, with certain countries already aiming to be fossil fuel free by 2050. The Netherlands has been at the forefront of this drive whereby they aim to become energy neutral within the next 25 to 30 years while their dairy sector has committed to a 2MT CO_2 reduction between 2015 and 2030.

Waste, in particular packaging waste, received notable attention. As worldwide food consumption will continue grow, it is becoming increasingly important to develop packaging solutions which enable the use of renewable materials. Legislation in Australia for instance, will require all food packaging to be reusable or recyclable by 2025. In France, the eco-design of packaging is a 'hot-topic' with a drive to reduce the use of lidding and caps. Progression towards a circular economy was a topical discussion point. This focused on the reuse of materials and value-addition to waste streams. Although production efficiency remains vitally important, sustainable intensification will continue to be the driver for agricultural production systems.

The ISO standard for Animal Welfare Management (ISO/TS 34700:2016) was discussed with the United States indicating that all its milk producers would need to conform. The standard was released approximately three years ago and is currently being reviewed to assess its level of application. The ability of countries to react and mitigate the impact of potential disease outbreaks was also identified as an important discussion topic. Reference was made to the outbreak in July 2017 of Mycoplasma bovis in New Zealand which required a concerted biosecurity response. Complex disease and economic modeling as well as scientific assessments served as the basis for the decision to cull around 22,000 animals on the country's South island.

Furthermore, the challenges faced by farmers with the use of biosensors in their herd management regimes were mentioned. With the number of different brands available in the market, communication and the exchange of data between different devices was a mounting frustration. The ultimate value of biosensors however remains an effective tool for precision herd management and improving animal welfare as well as contributing to the maximization of profits.

Observations and Important Themes from Conference Sessions

The journey towards environmental excellence is complex, yet its necessity is immediate. Global initiatives in the dairy sector, as well as many other agro-processing industries, are primarily driven by four key factors. These include overpopulation, the limited availability of resources, climate change and finally the expectations of consumers. Dairy, as an industry, is being placed under further scrutiny through a consumer base which believes that the focus on environmental issues is only going to increase over the next few years. Topics relating to the environment were diverse, ranging from the accounting of Carbon sequestration, the recognition of biodiversity and its preservation, the impact of dairy on poverty reduction and farming methods which contribute towards sustainable development.

The Dairy Sustainability Framework (DSF) continues to provide a platform for the global dairy industry to exchange sustainability information between both dairy processors and consumers. This serves as reference for the alignment of the sector's actions towards producing milk and associated dairy products in a continuously improving and sustainable manner. The DSF should therefore be viewed as an important guideline for the South African Dairy Industry. When considering environmental pollution reduction approaches, Silvopastoral systems received some review. These production systems focus on the integration of trees and grass pastures, where application was demonstrated in a Brazilian case-study which showed interesting environmental benefits including a 55% reduction in Green House Gas (GHG) emissions as well as associated improvements in soil quality and biodiversity.

The majority of environmental presentations correlated closely with the nutritional aspects of dairy. This focus is largely driven by the current global movement towards veganism and the growing perception that plant-based eating provides a more sustainable nutrition source as opposed to milk. This notion has become a serious threat to the Dairy industry. Data presented at the Summit indicated that currently 7% of adults in Canada are either vegan or vegetarian, while 19% of adults in Brazil have tried to adopt a vegan/vegetarian diet. Germany, France and Spain reportedly have 6% of their adult population living on a vegan diet. Interesting data was also presented identifying the reasons why consumers are switching from milk and dairy, to other alternatives in the United States. While lactose intolerance served as the greatest motivator, 20% of consumers cited animal rights as an issue, while 15% migrated away from dairy due to environmental concerns. From a nutrition perspective, focus should be applied to the essential role of a balanced diet which includes a daily dairy component. The nutritional value of milk and associated dairy products is often lost amongst the hype of plant derived 'alternatives'. This requires a holistic systems-thinking approach combining both environmental and nutritional aspects.

An interesting concept which is often overlooked in dietary assessments relates to the fact that global food systems are remarkably interconnected as a result of global trade. This implies that food which we purchase in our local supermarket often has a much wider footprint. Carbon footprint and GHG studies need to account for commodities which are imported/exported to more accurately gauge their ultimate CO_2 emission status. Dairy alternatives and plant-based beverages can be highly formulated, often containing a vast range of ingredients, sourced from across the globe, to ensure fortification. Such beverages are fortified to attempt to mimic milk composition and their composition can vary considerably between, and within types.

It was clear that there remains a need for us to educate consumers so that the interconnectedness and complexity of our nutritional impact on the environment can be viewed in a broader context. The author noted that possibly the greatest current threat to dairy consumption is for consumers to not value it in their diet. This issue needs to be approached through vigorous promotion of the enjoyment, taste and health benefits of dairy.

A Dutch Researcher presented an interesting online environmental-nutritional calculator which links the nutritional value of various food groups to their respective environmental Carbon footprints. This offered valuable insight into the notion that decreasing dairy in your diet would ultimately reduce your Carbon footprint and also asked further questions as to how we should define a 'healthy and sustainable' diet. It was evident from this work that decreasing dairy in your diet removes essential nutrients which then need to be substituted through the intake of other nutrient sources. When one considers that these 'substituted sources' are coupled with their own unique Carbon-footprints, often requiring a combination of alternative sources to replicate the equivalent nutrient value of dairy, then the scenario reflects in a more favorable light for dairy.

A number of speakers used comparative references between the nutrient composition of milk versus that of various plant-based beverages. With the exception of soy drinks, most plant-based drinks are low in protein, rely on fortification with minerals and vitamins and generally contain added sugars. This opposed to the naturally occurring sugar, lactose, in milk. Emphasis was placed on the need to employ science-based approaches towards developing factual counter evidence for a subject where decisions tend to be based on emotion. There is still however a drawback in the time it takes to complete such detailed studies. Unfortunately the industry cannot afford to rely on sparsely published information and therefore a balance between scientific- and outcomes-based approaches should be employed so that progress and findings of importance can be frequently fed back to the industry. This will facilitate swift reaction from the industry to appropriately address topics of concern, especially those of consumers.

In conclusion, to consume less animal- and more plant-derived foods is not necessarily the correct paradigm towards decreasing our environmental footprint. Our ecological footprint is more influenced by our total lifestyle. Refining the link between nutrition and environmental impact remains the most promising tool to empirically determine the true 'sustainable diet'. According to information presented at the WDS, a sustainable diet should be a combination of the following: Calorie intake according to food-based dietary guidelines should be followed; Reducing red meat intake (in particular imported meat) and balancing whole grain products with vegetables and fruits (as locally sourced as possible); Dairy intake remains at the current recommended level and consume less soft drinks and alcoholic beverages.

'Milk is Life' was the closing statement of Mr Ban-Ki Moon (Former UN Secretary General) and his sentiments set the tone for what was an enlightening conference to attend. Amidst a plethora of technical presentations and those touching the softer philanthropic issues, valuable insights were gained into the current status of the global dairy industry. It was indeed a privilege to attend this event and trust that the experience gained will benefit all future contributions to the South African Dairy Industry.

Acknowledgement

The author would like to express sincere gratitude to the South African National Committee of the IDF for funding to attend the WDS 2018 in Daejeon, South Korea.

Above: IDF Standing Committee Meeting on Environment Group Photo (Copyright IDF)

Above: In attendance of the keynote address, H.E. Mr Ban Ki-moon

Above: Daejeon International Convention Center, venue for the IDF WDS 2018

Prof Elna Buys

Reporting on:

- Standing Committee on Microbiological Hygiene (SCMH)
- Standing Committee on Harmonization of Microbiological Methods (SCHMM)
- Session: Science and technology of fermented milk
- Session: Food Safety Workshop

1. SCMH and SCHMM

Priority items for 2018/2019

- IDF publications on significant microbiological hazards and topics
- Application and implementation of the new metrics for microbiological risk management in the dairy food chain
- CCFH – Revision of General principles of Food Hygiene and HACCP
- IDF Bulletin on Pasteurisation

A revised Bulletin on pasteurisation was discussed. Key technological, microbiological, and nutritional aspects of cows' milk pasteurisation are reviewed. Value for the industry is: an overview of the process of pasteurisation of milk, the advantages of milk pasteurisation from a public health perspective, and the scientific basis demonstrating that milk pasteurisation does not impact the nutritional properties of milk.

A draft of the review paper of significance: Ecology of *Listeria* spp. and *Listeria monocytogenes*: Significance in dairy production was circulated for final comments. There will be a request to make the review paper available to the IDF members. It is stated that within the dairy context contamination of processed dairy products still occurs although historical control measures through pasteurisation have had a major impact on reducing the occurrence of listeriosis. Understanding of ecological niches within dairy manufacturing plants is lacking and this is essential to prevent recontamination after critical control points. Significance to industry: this review summarises the different relevant actions to be implemented to ensure safe final dairy product production in terms of *L. monocytogenes*. Statements are made in terms of **control measures** that can be used for inhibition of *L. monocytogenes*:

- pH less than or equal to 4.0
- Water activity less than or equal to 0.92
- Formulation containing one or more inhibitory substances
- Cold chain
- Prevention of cross-contamination and re-contamination after heat treatment

Testing for *Listeria spp*., and reacting to positive results as if they were *L. monocytogenes*. To understand that maintenance of a L. monocytogenes -free processing environment is relatively difficult to achieve as many different factors can effect occurrence.

A Factsheet on Whole Genome Sequencing (WGS) was proposed as well as a webnar. The discussion indicated that WGS implication for food industry ranged from

- Competent authorities using tool to Source track.
- Manufacturing using it to identify spoilage communities in processing environment, characterize food microbiota, document non-involvement in specified outbreaks, confirm the origin of food stuffs.
- The comparison of those sequences and sequences of isolated from clinical patients allows a more rapid detection of foodborne outbreaks at an early state. Outbreaks can also be traced back to their source and even geographical origin.

New work item proposed: **Process Environment Monitoring**

The purpose of the document is to provide the dairy industry a harmonized approach to do the monitoring of the microbiological pressure in the environment of production. To promote the good practices of the dairy industry to answer recent foodborne outbreaks linked to persistent contamination in the environment (*L. monocytogenes* in deli meat, South Africa, in frozen corn, Hungary, *Salmonella* Agona in powder infant formulae, France).

2. Science and technology of fermented milk

The most interesting aspects and of interest to the industry of these sessions are summarised below. All the presentations are available.

Fermented foods with the potential to fight disease and improve nutrition was discussed and it was indicated that the meal plan affects amount of microbes in GIT. There is a EU QPS list of safe organisms of environmental bacteria that enter the GIT. Japan has listed a wide variety of organisms in dairy, much higher diversity than EU. The question raised was – Is current exposure to microorganisms enough? Should we be eating more fermented foods? Rezak et al. 2018 in: *Frontiers in Microbiology* – gives levels in various fermented foods. Although ingested bacteria can cause major shifts composition of microbiome of the small intestine, alteration in the colon very difficult. If fermented foods makes up a 1/3 of the diet then it is a major source. According to EFSA no health claims may be made accept that probiotics can alleviate lactose intolerance. If the term probiotic is present on the product it is seen as health claim. Most EU member states mention yoghurt in dietary guidelines only 5 mention probiotics. The food matrix plays a role in survival of LAB through the GIT – with dairy matrix being significantly better in terms of protection of the LAB. The maximum number of LAB for safe human consumption, animal studies showed that there does not seem to be any limit in terms of detection limits possible today. In terms of the live vs. dead debate. Metabolites are still released, inactivated may still adhere, mechanisms on inactivated bacteria in some reviews on how they possibly promote health. However, the definition of probiotic is live organism.

During the discussion on fermented milk and gut cancer, microbiome was indicated as a tool for precision diagnosis and personalized treatment strategies. It was stated that the host-microbial interaction plays a major role in shaping wellness or disease of the human body.

Impact of milk fermentation on the inflammatory transcriptomic and metabolomic profiles of humans having ingested dairy products. This is a new area of research, very interesting and the it was shown that the impact of milk fermentation on the metabolic response of humans to the ingestion of dairy products can be measured.

Probiotic yoghurt: the importance of science and regulation for the consumer. There has been a decline in probiotics since 2006 when nutrition and health claims regulation NHCR EC 1924/2006 implemented and created high level of uncertainty regarding use of the term probiotics in the EU market. EFSA does not accept health claim. Italy permits a single probiotic claim around the maintenance of gut flora balance – therefore increase in probiotic use of supplements in Italy. The wider implications for consumers is confusion due to mixed messages on the benefits of probiotics. The view is that the confusion - re consumer is a pity since the demand from consumers is that they most want to get probiotics from food not supplements. The risk for probiotic science is associated with the impact of social media with some self-declared specialists who are not hindered by lack of knowledge.

3. Food Safety Workshop

The most interesting aspects and of interest to the industry of these sessions are summarised below. All the presentations are available.

During the Codex discussion it was emphasised that the standards are **voluntary, based on science, work on consensus, transparent and inclusive**. It was noted that food safety affects the consumer's willingness to pay. Food regulators and industry must use evidence based method to decide on risk. A WGS approach for safety and quality control of microbial food cultures in fermented dairy foods must be taken. There is growing concern regarding use of GRAS microorganisms. Qualified presumption of safety (QPS) was introduced as a generic risk assessment approach for harmonizing the assessment of notified biological agents. IDF has an updated inventory – 2012. Genomic comparison can be used to compare the unidentified strain to a known identified strain. The evaluation of the safety of the culture should be directed at 3 levels:

- At strain level
- During production process
- Throughout the shelf life of the food

A discussion on actions taken since melamine crisis focused on what had been implemented?

- Food safety committees were implemented at all levels of government
- Realised food safety is a farm to fork responsibility, not only processing
- Legislation was implemented and updated
- Regular testing of samples – 180 000 p/y government
- Laboratories attained instruments to test
- Third party certifiers implemented – HACCP, BRC, new factories equipped with state of the art laboratories and instruments
- After food safety improvements sales revenue increased with 145%
- All factories now have BRC and IFS certification

Outbreak discussion focused on what can be changed in dairy food sector. Three 3 case studies – SA, 2015-2018 Frozen corn, 2018 Ireland – RTE foods were discussed (https://efsa.onlinelibrary.wiley.com/doi/pdf/10.2903/sp.efsa.2018.EN-1445). WGS is only successful as a took during an outbreak if epidemiology is in place. It was stressed that process environment management and sampling must be implemented. It took 3 y to find the source in Europe ST 6 outbreak, there were positive samples in environment and it was mentioned that it was essential to validate cleaning validate as well as hygienic design. If there are no positive samples for LM in the processing environment then change sites of sampling.

Documents of interest available:

- EFSA document on where to do environmental sampling – 5 steps
- Risk profiling Listeria in RTE foods – in Ireland
  https://www.safefood.eu/Publications/Research-reports/Risk-profiling-Listeria-in-ready-to-eat-foods.aspx

Whenever you find LM in the environment – there is a risk, it is not related to specific strains. Documents do not make food safe – it is implementation and training, retraining food handlers. There must be an understanding of the risk if you deviate from the safe practices. Food safety culture is based on education. Process environment monitoring is a pro-active approach – zoning must be in place. Efficacy of cleaning practices select resistant strains, alternate cleaning agents, use of surrogate bacteria for validation.

Phages are in dairy industry is seen as a LMIC focus. Biocontrol strategies for LM – ListShield – USA approved. PhageGuard Listex is used for cheese, surface ripened. Phage not effective in milk matrix.

Maretha Vermaak

Meeting and sessions attended:

- Business meeting: Task force on Plant-based beverages
- Business meeting: Standing Committee on Nutrition and Health (SCNH)
- Session: Symposium on Science and technology of fermented milk
- Session: School milk for the future
- Sessions: Some sessions on Marketing and Environment
- Session: Nutrition and Health and Health benefits of Fermented Dairy

1. Task force on Plant-based beverages

The aim of the work is to develop a communication framework, targeting different audiences, that compares plain milk and plant-based beverages. A multidisciplinary team that encompasses experts from a number of IDF standing committees have considered several indicators to highlight the fact that plant-based drinks are not alternatives to milk, particularly in terms of their nutritional content. The factors that have been included in the strategy include; processing, food safety, regulatory, nutrition, economic, health, environmental impact, and consumer perceptions.

A presentation was compiled and presented at the various standing committee meetings.

In summary the global position currently is:
Plant based drinks are not MILK ALTERNATIVES and cannot be considered as milk substitutes

- Nutritionally they are not alternatives to milk as milk provides a whole natural matrix of nutrients in comparison to an artificially composed nutrient drink.
- A huge amount of scientific evidence exists to support the fact that milk and dairy products are healthy, while there is a lack of evidence on the relationship of health with plant-based drinks.
- Overall milk is a natural product, where plant-based drinks are highly formulated or processed food products.
- Milk is financially accessible, whereas plant-based drinks are very expensive.

The issue is not only the misuse of the term "milk" or "dairy", but also the claims and position of terminology on the packaging of PPB. PPB do not contain any milk or milk products, therefore lactose is not expected to be in the food. Therefore, the use of the term "lactose-free", according to regulations is not an authorized claim. It has also been noted that PBB only contain 2-17% of the original/actual substance (7 almond in a litre of almond milk) and that all PPB are always fortified with calcium. The calcium bioavailability of these products, with exception of Soy milk, is unknown. This item is still a work in progress.

2. Standing committee Nutrition and Health (SCNH)

Priority items and objectives for 2018/2019

Protein from a dairy perspective

The aim of the TF is to review the role of protein from a dairy perspective and its place in a healthy sustainable diet. The TF have drafted a white paper providing a landscape analysis of dairy protein in the diet. Further work needs to be done on defining the term protein, and explaining quantity versus quality proteins, as well as analysing the environmental impact of various protein sources.

School milk programmes

The aim of the AT on School Milk Programmes is to re-issue a modified version of the previous survey and to collect data on school milk programmes – specifically looking logistics, impact, economics and promotion. In addition to IDF members, partnership has been agreed with Tetra Pack and FAO to strengthen data collection. Circulation of the survey are aimed for mid-February 2019.

As the next World School Milk Day (2019) falls during the IDF WDS in Istanbul it has been proposed to celebrate School Milk Programmes during the summit and therefore the AT will provide a summary of the newly collected data.

The dietitian of the Consumer Education Project of Milk SA serves as team leader of this action team.

Impact of changes in dietary recommendations of milk and dairy

This work originated from a joint action between the SCM and SCDPE.

The aim is to analyse the changes in dietary guidelines and to calculate the impact of the reduction of the recommendations on different indicators. The AT progressed the work through having a survey circulated on the national situation regarding dietary recommendations. A good response rate was received, analysis of the responses was shared during the meeting.

A representative of France suggested developing a factsheet highlighting the various recommended dairy portion sizes/ intakes around the world and in collaboration with this, review the dietary guidelines from around the world and share findings.

A suggested new work item on the topic of dairy products and ultra-processed foods was presented to be a priority for 2019. The aim of the AT would be to define and describe the landscape of ultra-processed foods and discuss where dairy products fit into this definition. It was suggested that there is a need to develop science-based communications on ultra-processed foods and their relationship with NCDs, as well as other health outcomes, for health professionals and policy makers.

Dairy nutrition and environmental sustainability (Joint AT with SCENV)

This action team has closed but due to the SPCC that are currently looking into a new work stream on sustainable diets, the objectives of this AT will be revised.
The president of the SCNH mentioned that a sister paper to the EAT-Lancet commission is due to be published in November in the Lancet and is unlikely to be dairy friendly. A rebuttal paper with the key points on dairy and sustainable diets will be prepared and potentially shared in preparation of the EAT-Lancet Commission report

Roundtable discussion on National items

The following countries provided an update on national actions:

- CA (High fat, salt and sugar foods (HFSS) marketing, sugar reduction/regulations),
- FR (additives and processed foods),
- DK (fake news),
- NO (3 a day promotion/dairy portions, vitamin D fortification),
- CH (referendum results, fat and sugar regulations),
- SA (SSB levy to inc desserts, PBB terms and labelling),
- NL (labelling of added salt & sugar),
- UK (Brexit issues, obesity strategy, PHE consultations),
- AU (sugar reduction, labelling, obesity strategy, PBB),
- NZ (sustainable diets, obesity strategy, labelling, sugar reduction),
- US (sugar tax, milk and dairy terms, labelling, serving sizes),
- CL (sugar & fat regulations, country of origin and type of milk)
- KR (lactose-free legislation, milk intake, sugar reduction, childhood obesity)

Next meeting to be held on the 14th May 2019 in Utrecht, The Netherlands

3. Science and technology of fermented milk

The following presentation have been presented within this session:

- Fermented foods with the potential to fight disease and improve nutrition, presented by Seppo Salminen
- Challenges of synthesizing (GABA) in milk and yogurt by a novel strain of Lactobacillus brevis, presented by Nagendra Shah
- Impact of milk fermentation on the inflammatory, transcriptomics and metabolomics profiles of human subjects having ingested dairy products, presented by Guy Vergéres
- Do fermented milk products combat disease?, presented by Mansel Griffiths
- Probiotic Yoghurt: the importance of science and regulation for the consumer, presented by Bruno Pot
- Functional lactic acid bacteria as new ingredients of fermented milks, presented by Sungsik Jang
- Indian Traditional Dairy Products – Process and Product Development presented by DK Sharma
- Beneficial function of Bifidobacterium breve A1 for maintaining cognitive function in Alzhheimer's disease model mouse, presented by Yodai Kobayashi

All presentations are available on request and have been reported on by other delegates.

4. School milk for the future

Rafael Fabrega from Tetra Pak reported that for more than 55 years Tetra Pak has participated in the development of school feeding and nutrition programmes, which have provided value to children and society around the world.

- worldwide 140 million children receive milk in schools.
- 39 countries reported official national recommendations on milk consumption for children.
- 58% of school milk programmes provide milk for free, another 27% are subsidized.
- 87% of countries reporting about school milk in the survey use aseptic packaging in school milk programmes.
- 200 ml is the most common portion size.

Various studies on the impact of the school milk programme shows improvement in children's scholastic performance, increase in school attendance as well as improved nutritional status (height, weight, BMI).

Dr Judith Bryans presented on 'The contribution of School Milk to the nutrition of children worldwide' and illustrated the global nutritional status of children throughout the world emphasising that still 88% of countries face a serious burden of malnutrition with both underweight and overweight being part of the problem. The number of overweight or obese infants and young children (aged 0 to 5 years) increased from 32 million globally in 1990 to 41 million in 2016. She also illustrated how milk relates to the Sustainable Dietary Goals (SDG's) with focus on the goal of Zero Hunger and food security.

With the FAO/IDF global School Milk survey being a great success in 2013 with 60 countries responding, Dr Bryans also referred to the new survey on School Milk Programmes that will be managed by the SCNH who will report back on the results at the World Dairy Summit in Turkey later this year.

Representatives of Korea, China, Japan and Turkey reported on how their School Milk Programmes are currently executed and the impact it has.

5. Nutrition and Health and Health benefits of Fermented Dairy

The following topics were presented:

- The need to increase the consumption of dairy products to promote health in Korea
- Drinking more milk is associated with less salt intake and improves dietary sodium-to-potassium ratio in Japanese diet - A new strategy to prevent cardiovascular diseases, presented by Nagako Okuda
- Health effects of dairy fat, eaten in a Cheese Matrix presented by Emma Feeney
- Overview of nutritional differences between dairy and alternatives presented by Ji A Jung
- Interplay between microbiota and gastrointestinal disease, presented by Jihyun F. Kim
- Gut microbiota-based therapy for gastrointestinal diseases, presented by Yong Sung Kim
- Probiotics and the gut-brain axis: effects on physical and mental symptoms of stress, presented by Kensei Nishida
- 'Kefir – a gut health-promoting fermented dairy food?', presented by Paul D. Cotter

Some interesting information that was presented was the fact that research showed that the intake of Lactobacillus through dairy consumption can

- reduced stress-related physical symptoms
- suppressed additional changes in salivary cortisol and gene expression
- preserved the alpha-diversity index of the gut microbiota

And therefore, suggested that daily intake of Lactobacillus caseiShirotacan lead to a better quality of life through

attenuation of physiological stress response. Daily intake of LcSmay may also contributes beneficial effects on sleep quality during stressful condition. These effects may be the result of how Lactobacillus caseiShirota act on the brain through the afferent gut-vagus nerve system and reduce the stress acceptability in the brain.

Professor Yong Sung Kim presented a very interesting talk on the imbalance of the intestinal microbiota. His presentation can be summarised in the following points:

Various gastrointestinal disorders are related to imbalance of intestinal microbiota

- Probiotics have been used widely for a long time for gastro intestinal (GI) disorders including acute diarrhoea, antibiotics associated diarrhoea and irritable bowel syndrome. However, the effect is modest and strain specific.
- Antibiotics can be used for improving small intestine bacterial overgrowth in patient with irritable bowel syndrome (IBS).
- Success rate of fecal microbiota transplant to treat recurrent clostridium dificile infection is over 85%.
- However, fecal microbiota transplant showed a lesser effect on inflammatory bowel disease and a questionable effect on IBS, which have more complex pathogenesis.
- Gut microbiota-based therapy for GI disorders is promising, but it needs more robust randomized clinical trials.
- The novel and safe therapeutic modalities such as live biotherapeutic products, next generation probiotics or bioengineered product/synthetic stool, etc. should be developed in the future.

In conclusion – it has been a wonderful opportunity and privilege to once again represented the CEP of Milk SA at the IDF World Dairy Summit in Korea. It is not only about the knowledge we gain but also about the very important connections we make with our international peers, and to learn who are the various experts on specific subject within dairy nutrition.

Christina Leighton

Reporting on:

- International Milk Promotion Group
- Standing Committee on Marketing (SCM)
- Joint meeting of SCM and SC Dairy Policies and Economics
- Marketing conference
- Global Dairy Platform

1. International Milk Promotion Group (IMP)

- The Project Coordinator of the CEP completed her term and Chair if the IMP but remains a member of the presidium.

- A part of the IMP business meeting, a workshop on Plant Based Beverages (PBB) was held. The European Milk Forum had done a lot of work on PBB and this is a priority item for the IDF on different levels including nutrition and targeted communication to carefully selected bodies such as health professionals, government bodies and consumers.

  - A Sub-taskforce (TF) was formed under IMP as the arguments around PBBs should remain pre-competitive, meaning that communication should be unbranded.
  - Objective of the TF will be to develop a communication framework for the different target audiences that will be identified. This will not be a marketing plan. The communication framework will include different target audiences and include communication objectives for each. The communication framework will be presented at the IDF WDS 2019.
  - The aim of the TF is to meet by the end of 2018 and early 2019 with the intention to finalise a communication framework which will be delivered at the 2019 WDS.

- The IMP will hold its mid-year meeting in April/May 2019 in Arizona, USA.

2. Standing committee on marketing

The main purpose of the committee is to identify the communication requirements related to marketing issues of dairy health and nutrition. The marketing conference of the WDS is also planned during these meetings.
Work shared:

- IMP: report on the mid-year meeting was presented. (IMP is a permanent taskforce of the SCM)
- Plant based beverages – presented by France
- School milk programmes from different countries
- Food-based dietary guidelines from different countries, focussing on recommended daily dairy intake
- Work executed by the European Milk Forum (EMF)

3. Joint meeting of SCM and SC dairy policies and politics

- During this session the country reports were presented by Richard Walton
- Planning of the continuation of the Global Trends Report was discussed during this meeting and the way forward regarding capturing this information from many different countries was debated.

4. Marketing conference

The marketing conference used the theme of the IDF WDS i.e. 'Dairy for the Next generation' to plan three sessions of the marketing conference. Information on selected presentations are provided below:

4.1 Session 1: The latest updates on food trends in the market place

The first session was a joint effort by SCM and SCDPE and shared current food and dairy trends globally and focussed on analysing the global economy and dairy markets particularly in Asia (Korea and Japan) and North America.

4.1.1 The presentation by Gira highlighted the following:

- Production will continue to grow in the traditional exporting countries but at a lower rate than in the past.
- China will continue to represent more that 23% if world growth consumption.
- The high valuation of fats at the expense of proteins may continue. Full-fat milk powder may be the smart way to use proteins.
- Cheese production will continue to attract more and more milk. The type of cheese is questioned. Foodservice will be the main user of cheese.
- Dairy products are being cannibalised by vegetable alternatives and the challenge was – 'what is the dairy industry doing about it'?
- Milk alternatives are both a threat and opportunity for dairy.
- A1 Milk is bridging the gap between dairy and alternatives, with limited conflict.
- Adding maximum value to each litre of milk will increase in importance for dairy.
- Historically, the most flexible dairies always came out top.

4.2 Session 2: Opportunities and challenges in dairy

During this session case studies from Japan, Chile, Chinese and North American markets were shared in terms of innovation in each of these markets. Valuable information to include in this report is highlights from the presentation by Zenith UK which showed key consumer trends and innovations in dairy products.

4.2.1 Presentation by Zenith: Boldly facing the future of dairy

4.2.1.1 The macro-economic drivers of consumption of dairy are:

- Increasing prosperity and affordability
- A rising middle class in emerging market
- Millennials are shifting into a higher purchasing power age bracket
- Growth of aging population
- Urbanisation
- Globalisation, connectedness and mobility

4.2.1.2 Consumer's drivers of consumption of dairy are:

- Health and wellness based on global obesity concerns
- Wealthy consumers are willing to pay more
- Disadvantaged consumers managing limited budget
- Growing awareness and concern over sustainability
- Place of origin; localisation and ethical integrity

4.2.1.3 Key consumer consumption habits are:

- Meal replacement and snacking, change in portion size. Dairy products have a different time and place of consumption. Snacking is very popular and includes products for 'breakfast on the go'
- Transformation of packaging and labelling. Consumers are seeking new and innovative trends in packaging choice and design. Milk has not transformed in decades and
- Personalised nutrition instead of medication

4.2.1.4 Key consumer preferences are:

- Natural sources of origins
- Rise of sophisticated global flavours
- Low or no added sugar
- Low and no calories
- Functionality

4.2.1.5 Innovations in dairy products include the following

- Consumption occasion – different dairy products are consumed at different occasions e.g. yoghurt at breakfast and cheese at special occasions.
- New flavours and textures
- Dairy is the 'new' protein
- Dairy alternatives are driven by consumers perception that dairy free is a healthier product than dairy
- Inclusion of functional ingredients in product development
- Segmentation - products for the elderly and for children (different ages)
- Consumer centric brands – new format of packaging. E.g. animal wellbeing; carton packaging; recycling innovation; social responsibility; glass bottles

4.2.1.6 Challenges faced by the dairy industry:

- Allergies and intolerances
- Ingredients used in milk production (hormones, medicines)
- Nutrition intake monitoring (fat, sugar, carbohydrates, cholesterol, energy)
- Sustainable concerns- animal welfare; emissions; water wastage

4.2.1.7 Consumer-centric innovation will drive value and margin

- Adapting global innovation trends to local taste and consumption needs
- Health and wellness perception will drive consumer engagement
- Targeted usage occasion and segmentation
- Sustainable impact of the dairy industry
- Dairy alternatives driven by changing consumer needs

4.2.2 Dairy innovation in the aging market: Innovation in the Japanese market

In Japan the population is decreasing but the aging population is increasing. By 2025 it is predicted that the aging population (> 65 yrs) will be more than 30 % of the population. This change in the dynamics of the population stimulates innovation in food products development. Life expectancy vs 'healthy' life expectancy requires healthy food products. Food products must be healthy; the right size and user friendly. The focus is on value and not volume.
The government also encourages the use of functional ingredients and this has led to the increased sales of yoghurt and other fermented products.

4.2.3 Dairy status Korean market

In Korea the consumption of cheese is greater than the consumption of fluid milk. The production of cheese has increased extensively over the past 20 years. Innovation is required to drive the liquid milk market, especially in packaging shape and design, providing flavoured milk options and increased size in flavoured milk products.
The cheese market is strong in prepacked sliced cheese.

4.2.4 Innovation in the North American Market

In North America the number of dairy plants is increasing especially cheese, yoghurt and butter plants, in spite of the fact that there is a decline in population growth. The gains in dairy production outpaces the gains in consumer consumption.

Cheese consumption has increased and the biggest uptake is seen in foodservice as cheese is added to many recipes. Other reasons for the increased cheese consumption are home cooking and culinary exploration as well as the natural clean label of cheese.

Butter consumption has increase in light of communication by researchers reversing their opinions about healthy fats in dairy.

Fluid milk consumption has declined mainly due to the availability of more competition in the market. Consumers can substitute dairy for many other options. However, the market for drinkable calories (energy) is not growing and consumer are taking up occasion specific beverages and avoiding calories. Typical products that are preferred are ready-to drink coffee; value-added waters; sports drinks, energy drinks and ready-to drink teas. In order to rescue the declining fluid milk consumption, marketers are using health claims to boost sales e.g. organic, grass fed; GMO free.

Yoghurt market has matured, resulting in declined consumption. Consumers are seeking high fat yoghurt. 'Greek' yoghurt as also lost its novelty, consumers are avoiding sugar and substituting yoghurt with prepared meals – all contributing to the declined market.

4.3 Session 3: Opportunities and challenges in dairy

4.3.1 European Case Study (AHDB's work on Millennials)

The research presented in this presentation showed that millennials (born 1980 – 2000) are seeking alternatives to dairy. These changes are driven by changing lifestyles. Dairy in consumed with other foods (hosts products) such as with coffee; on toast; part of breakfast and in recipes. New 'host products' should be explored in order to showcase the versatility of dairy. Although millennials are consuming less fluid milk as such, they eat more cheese than before.

This target audience also seeks new flavours, exciting packaging. Dairy alternatives are meeting this need and thereby capturing the interest of this conflicted health seeking audience. The research further showed that only 60% of alternative buyers are repeat purchases and with the right product innovation and communication, there is an opportunity for dairy to win these consumers back.

4.3.2 Milk vs plant base alternatives

Plant based eating patterns was one of the priority topics addressed at the summit. This presentation on Plant based drinks vs Cows milk, was presented in several conferences at the summit and standing committee business meeting to give many delegates exposure to the presentation. This presentation was based on research done in France.

Veganism is a lifestyle and not a diet and also a growing market that offers many varieties of plant-based drinks, resulting in a reduction in the consumption of fluid milk. This seems to pose a real threat to the dairy industry. Although vegans are still a small segment of the population, they are growing significantly and earning share of voice in the media.

There are a variety of reasons why consumers are switching to alternatives (in declining order) i.e. lactose intolerance; dairy allergies; avoiding growth hormones; reducing saturated fat consumption; cutting back on dairy with age; animal rights/ cruelty issues; avoiding antibiotics in dairy and environmental reasons.

Consumer are confused about plant-based drinks:
- They think that there is milk in plant-based drinks
- Plant-based drinks can replace cow's milk nutritionally
- Plant based drinks have the same nutrients as cow's milk
- Can meet an infant's nutritional needs.

How would the dairy sector respond to the vegan lifestyle and product choices?

The objective of the IDF is to address these threats with a global voice and strategy, by developing a global science-based communication framework for the dairy sector to help national committees develop action plans, with the intention to protect consumers against misleading messages.

4.4 IMP Trophy

The three finalists of the IMP - Yves Boutonnat Trophy award was presented during the marketing conference. The Project Coordinator chaired this session. The three finalists were:
- EMF: Milk moments
- UK, AHDB: The Department of Dairy Related Scrumptious Affairs
- Denmark: The healthy school project

The winner, EMF, was announced at the WDS Gala dinner and the Project coordinator presented the trophy to the winner.

5. Global dairy platform

The GDP mid-year meetings were held in June in London UK. The business meetings were held in Daejeon, Korea, on Friday 12 October 2018.

The GDP has three main working areas:
- World Milk Day
- Dairy relevance
- Balancing the debate

5.1 World Milk Day was discussed at the mid-year meeting and presented at the IDF-WDS

This was the second year that GDP coordinated a global effort for WMD and it was well supported globally.
In order for this effort to be meaningful it has to have an anchor message. There were some anti-dairy detractors from different countries, but by introducing a debate on the social media platform, the conversation was steered in a positive manner. E.g., France posted the question of: Do you put milk before or after on your cereal. This way participants focussed on the fun aspect as opposed to focussing on hard dairy nutrition facts that can spark a negative debate.
During the marketing conference, the GDP presented the results of this global initiative that ran 1 June 2018.

5.2 Dairy relevance

A taskforce was developed that used the 'Billion People' concept and the dairy relevance map to explore the possibility of collaborative actions across borders. The action aimed to unite the dairy sector over a one-week period, to tell a complete global story of the impact dairy makes around the world from global nutrition and environmental sustainability to economic impact in communities and more. The target audience was the younger, conflicted consumers. The content was simple message using #enjoydairy and showing dairy moments that were captured around the world.
The collaborative action was introduced at the business meeting in Daejeon and participating countries were recruited. The date for execution was 5 -9 November 2018. The outcomes of this global collaboration, which resulted in 17 countries participating in the #enjoydairy campaign, will be presented at the IMP/GDP joint meetings in May 2019.

Christine Leighton
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IDF-WDS, 2018. Daejeon, Korea