

國際乳品檢測之需求與挑戰研討會

Analytic Needs and Challenges of Global Dairy Products

2019年8月2日

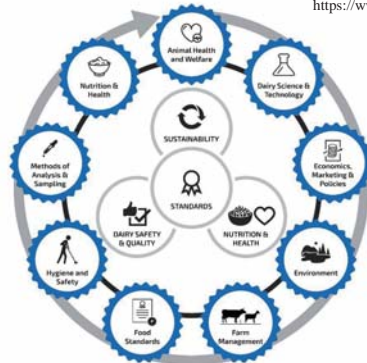
國際乳業聯盟 (IDF) 的九項標準

Nine standards of International Dairy Federation

行政院農業委員會畜產試驗所
吳明哲組長(Mr. Ming-che Wu)



<https://www.fil-idf.org/>



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國際乳業聯盟(IDF)的九項標準

Nine standards of International Dairy Federation



- ANIMAL HEALTH AND WELFARE
- DAIRY SCIENCE AND TECHNOLOGY
- ECONOMICS, POLICIES AND MARKETING
- ENVIRONMENT
- FARM MANAGEMENT
- FOOD STANDARDS
- HYGIENE AND SAFETY
- METHODS OF ANALYSIS AND SAMPLING
- NUTRITION

IDF contributes to the development of science-based globally harmonized standards, guidelines, codes of practice and related methodologies across all working areas, to continually improve regulatory environments for the dairy sector



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IDF welcomes the first World Food Safety Day, adopted by the United Nations General Assembly in December 2018, which was celebrated on 7 June 2019 under the theme "Food Safety, everyone's business."

HISTORY

2007 Japanese man creates beer from milk	1967 First ultrafiltration	1950 Milk carton introduced
1903 IDF established	1895 Commercial pasteurization machines were introduced	1889 First sterilized milk
1878 Continuous centrifugal cream separator invented by Dr. Hervéy De Laval.	1884 Milk bottle invented by Dr. Hervey D. Thatcher, Potsdam, New York.	1862 Louis Pasteur, a French microbiologist, conducted the first pasteurization tests
1791 Invention of Casembiet	1525 The First Cattle Brought to the Americas Arrive at Vera Cruz, Mexico	500 AD Cows and sheep in Europe farmed and grazed for their milk
100 BC First pressed cheese	1400 BC First cheeses in Mesopotamia and India	2000 BC The Domesticated Cow Appears in Northern Indian Vedic Civilization

World Dairy Summit
September 23-26, 2019
ISTANBUL, TURKEY
www.idf2019.com

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1. ANIMAL HEALTH AND WELFARE
2. DAIRY SCIENCE AND TECHNOLOGY
3. ECONOMICS, POLICIES AND MARKETING
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5. FARM MANAGEMENT
6. FOOD STANDARDS
7. HYGIENE AND SAFETY
8. METHODS OF ANALYSIS AND SAMPLING
9. NUTRITION AND HEALTH

IDF STANDING COMMITTEES

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- Internal reference document
- Short external communication (factsheet/extended factsheet)

- ◆ Salt in manufacturing process of cheese
- ◆ Conference on Dairy Science and Technology for the **IDF World Dairy Summit**
- ◆ Monitoring of issues including new opportunities and challenges in production and bio-activity of functional dairy foods, microstructure of dairy products, ewes and goats milk, cheese ripening, etc...

- World Dairy Situation report
- Conference on Dairy Policies & Economics for the IDF World Dairy Summit

- | | |
|-------------|------------|
| 1. 動物健康和福祉 | 6. 食品標準 |
| 2. 乳製品科技 | 7. 衛生和安全 |
| 3. 經濟、政策和營銷 | 8. 分析和抽樣方法 |
| 4. 環境 | 9. 營養與健康 |
| 5. 農場管理 | |

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- ✓ Energy efficiency and GHG emissions quantification and mitigation, including renewable energy generation
- ✓ Water quality, efficiency and reuse
- ✓ Biodiversity
- ✓ Waste management and reduction
- ✓ Review and adoption/promotion of best available technologies and practice
- ✓ The intersection of nutrition and environmental sustainability

- Finalization of update of IDF/FAO Guide to Good Dairy Farming Practice
- Initiation and progress of new work on IDF/FAO Guide on hygienic practices at farm level
- Payment systems for ex farm milk

- Codex discussions on possible standardization of processed cheese
- Codex discussion on possible standardization of whey permeate powder
- Coordination of Codex nutrition matters with the SCNH (Standing Committee on Nutrition and Health)
- Codex regional standardization

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- Significance of Shiga-toxigenic E coli in dairy production
- Surveillance of relevant information and reporting of emerging hazards associated with milk and milk products, and subsequent publications
- Design of microbiological control systems in dairy production
- Continuous update of the inventory of microorganisms with history of safe use

- ✓ Development of IDF/ISO International Standards,
- ✓ Monitoring and provision of input to Codex Committee on Residues of Veterinary Drugs in Foods (CCRVDF), and Codex Committee on Methods of Analysis in Sampling (CCMAS) in collaboration with other IDF working bodies,

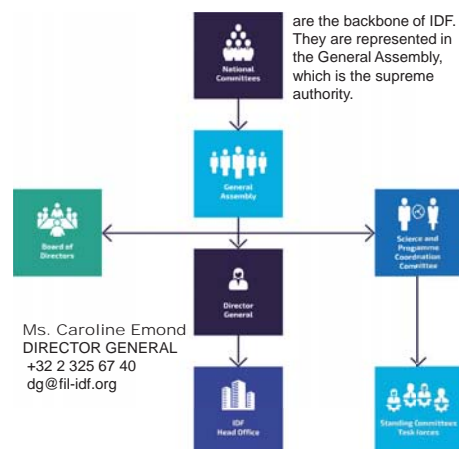
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- Reaction to the revision of the FAO report on Milk and Milk Products in Human Nutrition.
- Dairy fat – input and follow up of the FAO/WHO Expert Consultation on Fats and Fatty Acids in Human Nutrition; input in Codex discussions related to fats, setting up of a speaker network.
- Coordination of Codex Nutrition Matters and input to CCNFSU and CCFL.
- Dairy nutrition and environmental sustainability.
- Carbohydrates including a specific focus on lactose.
- Dairy and children's diet.
- Review of Vitamin K2 produced by microorganisms in fermented dairy products
- Update of the IDF Nutrition website www.idfdairynutrition.org

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IDF's mission is to help nourish the world with safe and sustainable dairy.



- Since **1903**, IDF is a recognized international authority which contributes actively to the development of science-based standards for the dairy sector.
- IDF and the International Organization for Standardization (ISO) have established a joint IDF/ISO work programme for the development of **standard methods** of analysis and sampling for milk and milk products.



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IDF IS CURRENTLY INVOLVED IN FOUR VERY DIFFERENT TYPES OF STANDARD SETTING ACTIVITIES

- Food standards for international trade with **Codex**
- Animal health and welfare standards for international trade with **OIE**
- Standards for Methods of analysis and sampling with **IDF/ISO, AOAC, USP**
- Standards for milking machines, dairy safety and quality management systems, environmental standards etc. with ISO and other organizations (**FAO, ICAR, ...**)



"The role of the IDF is to provide science-based expertise and consensus for the global sector"

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JOIN IDF FOR COUNTRY MEMBERSHIP BENEFITS

1. Coherent and visible representation of local dairy sectors worldwide
2. Outstanding opportunities to promote local dairy industries through global and regional events
3. Privileged internal and external communications channels
4. Easy and quick access to IDF publications and data
5. Scientific and technical support for events
6. Networking with global dairy experts and key influencers
7. Participate in creating global consensus on topics related to dairy
8. Jointly prepare input towards intergovernmental organizations
9. Access to topic-specific documentation on the goodness of dairy

國際乳業聯盟 (IDF) 會員國家委員會

1. 當地乳製品行業的連結國際唯一代表機構
2. 能通過全球和地區活動促進當地乳業發展的佳機
3. 經由政府授權的內部和外部聯絡處
4. 容易且快捷地取得IDF出版物和數據
5. 活動有科學和技術性內涵
6. 與全球乳品專家和關鍵影響者建立聯繫
7. 參與就乳製品相關主題達成全球共識
8. 共同為政府間組織提供貢獻
9. 取得優質乳製品的專題文檔

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JOIN IDF FOR EXPERTS

1. Access to an unrivalled source of scientific and technical knowledge
2. Comprehensive coverage and understanding of all dairy-related issues
3. Participation in world class working groups
4. Analysis of key issues of interest for the dairy sector
5. One-of-a-kind networking opportunities at IDF events
6. Contribution to the setting of international standards
7. Key contacts with global organizations such as FAO, Codex Alimentarius, WHO, OIE, CFS, ISO



<https://www.fil-idf.org/about-us/join-idf/>

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IDF – ITS UNIQUE ROLE WITHIN CODEX

Besides dairy commodity standards, IDF's current activities in Codex are focused on:

- **Food hygiene and safety**
- **Food labelling**
- **Food additives**
- **Methods of Analysis and Sampling**
- **Nutrition**
- **Residues of veterinary drugs and contaminants**
- **Export certification systems**

To learn more about Codex, please click [here](#).

http://www.codexalimentarius.net/web/index_en.jsp

IDF is the platform for the international dairy sector to discuss standards for international trade and to achieve consensus on a common approach to issues discussed in Codex. IDF contributes to the work of the Codex Committee on Milk and Milk Products (CCMMP) by providing first drafts of standards and contributing expert input throughout the development of new standards until their final adoption. IDF also monitors all the other Codex Committees that influence the dairy sector. IDF experts from all over the world are actively involved in Codex scientific and technical discussions with potential impact on production, packaging, marketing, consumption and trade prospects of dairy products.



Dairy is a vital part of the global food system, providing economic, nutritional and social benefits to a large proportion of the world's population.

DAIRY FACTS



5 JOBS

For every 100 litres of milk produced locally, up to five jobs are generated



NUTRIENTS

Milk is one of the most nutrient-rich foods, containing calcium, proteins and minerals among other relevant nutritional components



40%

Global livestock production accounts for 40% of the value of world agricultural output



150 MILLION

Globally, around 150 million small-scale dairy households are engaged in milk production



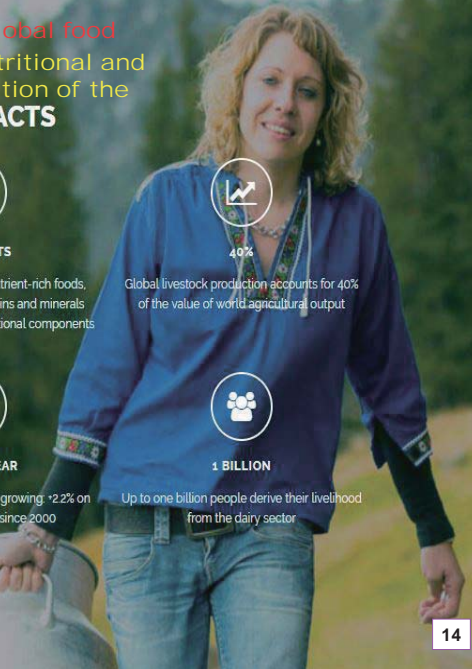
+ 2.2% / YEAR

Milk production is steadily growing +2.2% on average every year since 2000



1 BILLION

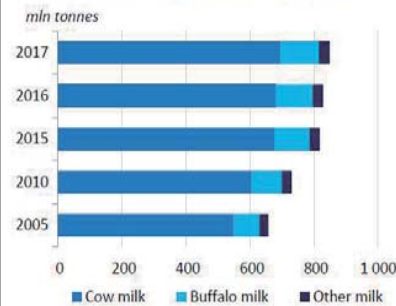
Up to one billion people derive their livelihood from the dairy sector



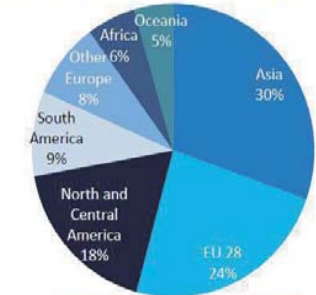
WORLD DAIRY SITUATION AT A GLANCE

MILK PRODUCTION

World: milk production by species



World: cow's milk production (share per region)

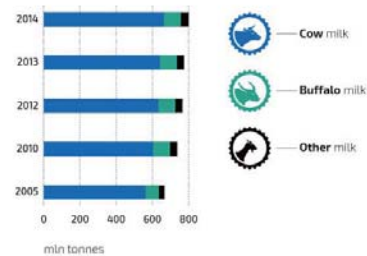


World total 2017: 696 billion kg

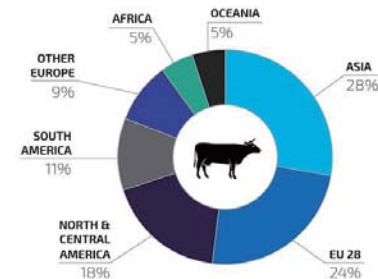


MILK PRODUCTION

WORLD: MILK PRODUCTION BY SPECIES



WORLD: COW'S MILK PRODUCTION (SHARE PER REGION)



Source: CNIEL, ZulveINL, FAO, IDF National Committees, national statistics



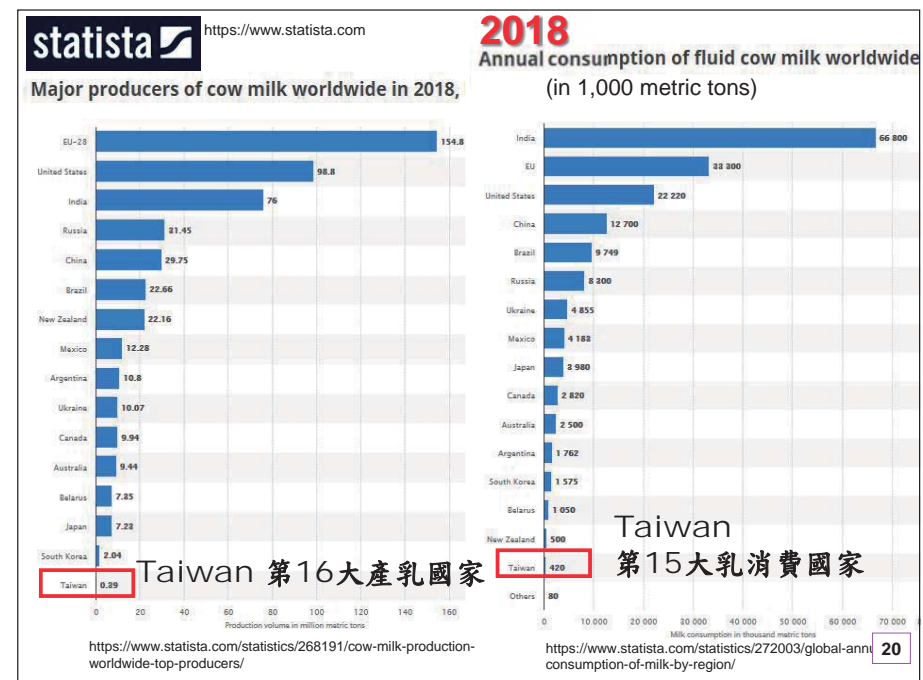
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MILK

APRIL 10, 2018

Where Will The Dairy Industry Be in 50 Years?

NEWS | BY: JIM DICKRELL

By 2067, the United Nations predicts world population will grow by 3 billion to **10.5 billion** people. Most of these folks will be added in Asia and Africa. Not only will population increase, but dairy consumption will increase even more as incomes rise and the demand for diets higher in protein grows. All totaled, **milk** production will have to grow **13.2 trillion pounds**. For that to happen, the average dairy cow in the world will have to double its annual milk production.



Dairy farmers in 2067 will meet the world's needs for essential nutrients by adopting technologies and practices that provide improved **cow** health and longevity, profitable dairy farms, and sustainable agriculture.

Integrated sensors, robotics, and automation will replace much of the manual labor on farms.

Journal of Dairy Science®
Official Journal of the American Dairy Science Association®

May 2018 Volume 101, Issue 5, Pages 3722–3741

Invited review: Learning from the future—A vision for dairy farms and cows in 2067

J.H. Britton, R.A. Cushman, C.D. Dechow, H. Dobson, P. Humblot, M.F. Hutjens, G.A. Jones, P.S. Ruegg, I.M. Sheldon, J.S. Stevenson

International Non-Governmental Organization (1951 Rome Italy)

Members of ICAR (International Committee for Animal Recording)



2011 (in blue)
Japan
Korea
Taiwan



2018 (in yellow)



- ISO 17678 | IDF 202: **2019** – Milk and milk products – Determination of milk fat purity by gas chromatographic analysis of triglycerides
- ISO 15151 | IDF 229: **2018** – Milk, milk products, infant formula and adult nutritionals — Determination of minerals and trace elements – Inductively coupled plasma atomic emission spectrometry (ICP-AES) method
- ISO 21424 | IDF 243: **2018** — Milk, milk products, infant formula and adult nutritionals — Determination of minerals and trace elements — Inductively coupled plasma mass spectrometry (ICP-MS) method

