



Food and Agriculture  
Organization of the  
United Nations



World Health  
Organization



# A drop of oil, a tonne of value

**Codex Committee on Fats and Oils**

CODEX ALIMENTARIUS

# Introduction



©Codex/Bob Scott

➤ **Ms Noraini Dato' Mohd Othman**  
Senior Director  
for Food Safety and  
Quality, Ministry of  
Health Malaysia,  
Chairperson CCFO.

The Codex Committee on Fats and Oils (CCFO) elaborates worldwide standards, codes of practices and guidelines for fats and oils of animal, vegetable and marine origin. The CCFO meeting convenes every two years and is attended by Members and Observer organizations from across the globe.

CCFO is a committee that brings together members of diverse cultural and legal settings but yet are bonded by a strong value system and a desire to protect consumer health and ensure fair practices in the trade of fats and oils.

Fats and oils are used throughout the world for dietary, food applications and industrial uses. The total world trade for **17 major edible fats and oils** is estimated at **215 million tonnes in 2017**. Palm oil and soybean production were **65 million tonnes** and **53 million tonnes** respectively, accounting for **55 percent** of the total world production of fats and oils.

Over the last ten years, total production of fats and oils has **grown by over 40 percent**. (Source: Oil World 2018)

The United Kingdom hosted the first historic session of the CCFO in London, United Kingdom in 1964 and continued this responsibility until the 20<sup>th</sup> Session in 2007.

# Chairperson's perspective

## WHY MALAYSIA TOOK UP THE ROLE OF HOSTING CCFO

Recognising the active participation and significant contributions to the work of Codex, Malaysia was designated as the host government for the CCFO at the 30<sup>th</sup> Session of the Commission in 2007 and has hosted the CCFO sessions since 2009.

Malaysia was honoured to take up this important role and the opportunity to further contribute towards setting international food standards. Serving as Host Country, Chairperson and Secretariat of CCFO has also enhanced Malaysia's capability to strengthen its national food control system, to better appreciate the importance of Codex texts and of adapting them into national legislation, reflecting the country's commitment to the spirit of global harmonization.



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## HOW DOES MALAYSIA MANAGE CCFO MEETINGS?

- CCFO sessions are managed by the Food Safety and Quality Division (FSQD), Ministry of Health Malaysia, which serves as the CCFO Secretariat that is responsible for the planning and management of the sessions. A senior officer of the FSQD is the Chairperson of the CCFO.
- For the purpose of formulating Malaysia's national positions for CCFO, a separate agency has been appointed to serve as the Chairperson and Secretariat of the National Codex Sub-Committee on Fats and Oils. This sub-committee which reports to the National Codex Committee, comprises all relevant stakeholders including government agencies, industries, consumer associations, academia and professional bodies.

**WHAT ARE THE FOOD SAFETY AND TRADE ISSUES CONCERNING FATS AND OILS?**

- Since fats and oils are used globally for a variety of purposes, it is important to ensure that they are safe to protect consumer health and promote fair practices in the food trade, which are the dual mandates of Codex.
- Amongst the important factors that have a direct effect on the safety and quality of fats and oils is the introduction of new fats and oils on the market; technological and scientific innovation, and climatic, geographic and varietal differences. Increasing awareness among consumers has led them to become more selective of what they eat and encouraged producers to introduce new healthier varieties.

**WHY ARE STANDARDS NEEDED?**

- Standards for fats and oils should reflect global variability, accommodate new varieties, and safeguard the integrity of authentic oils. The standards developed should also ensure that the fats and oils are produced, handled and transported in a safe manner.

**WHAT ARE THE CURRENT AND FUTURE ISSUES LIKELY TO BE ON THE COMMITTEE'S AGENDA?**

In line with the prevailing practices in global production and trade of fats and oils, the main agenda items in recent CCFO sessions have been proposals for standard development for new varieties of vegetable oils; amendments to parameters due to differences in geographical locations and trade practices, and work on standards for new oils. It is foreseen that future work of CCFO will continue to be within these main areas of focus.

**WHAT CHALLENGES AND OPPORTUNITIES DO CHAIRS OF CCFO SEE NOW AND IN THE FUTURE?**

- ↓ The work of CCFO will remain relevant and challenging, due to increasing demand for healthier fats and oils, the need to ensure authenticity and various factors affecting the safety and quality of fats and oils such as climate change, production in new geographical locations and technological advancement.
- ↓ It is clear that the Chairperson of CCFO will face challenges in managing the agenda items of CCFO sessions to ensure that all proposals are taken into consideration and that Members have an opportunity to voice their opinion while ensuring progress in the work of the committee.
- ↓ With the prevailing spirit of continued cooperation among Members of CCFO and efforts to resolve differences in positions, significant progress has been made on numerous agenda items during recent sessions. CCFO has made sincere efforts and shown willingness to provide solutions that lead to positive outcomes on all agenda items.
- ↓ This cooperation and the spirit of goodwill among Members provide the opportunity to advance the work of CCFO to meet global needs. The CCFO will continue to explore new ways of addressing all challenges and managing its agenda items.



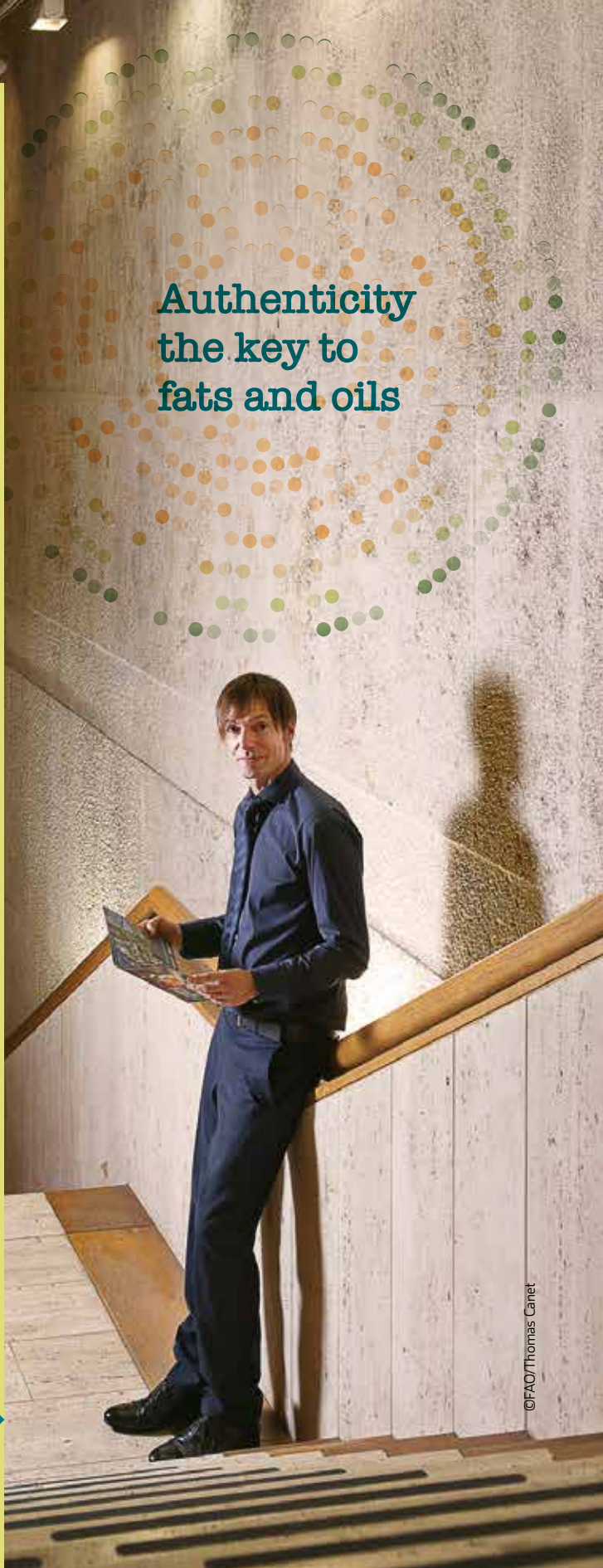
**F**ood is personal. It reflects who we are, where we come from and our cultural heritage. The fats and oils we grow up eating are an example. In Germany in the 1960s we used more butter than oil to cook, and the butter vs margarine controversy later took hold. Virgin sunflower and safflower seed oils are the first oils I remember being used in our salads. Nowadays one can find an amazing variety of oils in the supermarket and living in Italy for over ten years I am acutely aware of the pride that producers and consumers alike place in their local products. There isn't a village or town that you can visit on this peninsula that doesn't offer you a particular local delicacy rooted in history and in Italy this is never more true than for olive oil.

We all use fats and oils every day - they are essential ingredients in many dishes. The safety, quality and authenticity of the products that CCFO deals with are of immense importance to consumers, suppliers, retailers and regulators around the world. Governments come together in Codex committees to build through consensus the regulatory compendium for our global food system. Codex strives to ensure safe, high quality food in every home and to provide reliable information to consumers, listen to their views and guide them to healthy and safe choices.

For over 55 years CCFO has been developing standards for fats and oils. For me, it has always been a pioneer in ensuring authenticity and I commend the committee, now under the leadership of Malaysia, a country with such expert knowledge and understanding of the global significance of fats and oils, for their work. I would like to thank Malaysia and all our host governments for the continued support and dedication they give to the work of Codex.

Tom Heilandt →  
Codex Secretary

## Authenticity the key to fats and oils



**MALAYSIA**

**MAKING A DIFFERENCE**

As one of the leading producers and exporters of palm oil, Malaysia strives to provide the world with a high quality product that conforms to global food safety standards.

Malaysia produced 19.5 million tonnes of palm oil in 2018 from only 5.8 million hectares of land (approximately 2% of the global harvested area of oilseeds). The Malaysian palm oil industry represents one of the agriculture commodities that contributes to the United Nations Sustainable Development Goals and supports the livelihood of 650,000 smallholders in Malaysia. The development of CCFO Standards is of crucial importance in facilitating the global trade in fats and oils including palm oil. Malaysia will continue to be a responsible producer and exporter of palm oil and contribute towards development of fair global standards on fats and oils.



**ARGENTINA**

**IN ALL LATITUDES**

Argentina is one of the main world exporters of sunflower oil and has been increasing its production in recent years. For years Argentina has shown that planting different types of sunflower seed in suitable areas with a higher temperature produces a change in the fatty acid composition of the sunflower seed and consequently in the extracted oil. Examples include sunflower oil obtained from sunflower seed produced in the northeast of Argentina, which accounts for approximately 20% of Argentine production, and sunflower oil extracted from sunflower seeds grown in some areas of Brazil. Given the relevance of geographical location of production of sunflower seeds for fatty acid composition, Argentina looks forward to Codex considering and covering the composition of oil from seeds grown at all latitudes of the planet. The success of Codex is in guaranteeing the authenticity of products regardless of the production location and basing its standards on the best available scientific evidence.



**IRAN**

**SINCE ANCIENT TIMES**

A balanced diet has a profound effect on health and can help prevent many diseases. Nuts are part of healthy diets in the Mediterranean and since ancient times they have formed part of the traditional diet in Iran and many other countries. Pistachio nuts, hazelnuts, walnuts and almonds are rich sources of energy, oils, proteins, essential fatty acids, essential amino acids, antioxidants, vitamins, minerals and other bioactive nutrients. Oil generally accounts for more than 50% of the overall composition of nuts and these oils are attracting more attention due to their nutritional properties, consumer popularity and multiple uses in diets including as salad oil, cooking oil or in food formulations. They also command a high price when traded.

Oil can be extracted from nuts by cold or hot press or by solvent. Nut oils extracted by cold press are common in Iran and consumers prefer them because of their unique organoleptic characteristics. Due to increasing demand in the market, there is a need to introduce Codex standards, which can help ensure fair practices in trade, prevent adulteration and guarantee the purity of nut oils.

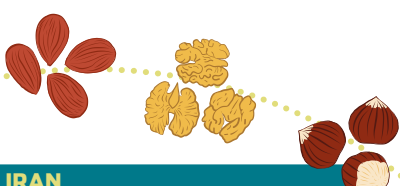
**MAIN NUT PRODUCING COUNTRIES**

- | Australia | Chile |
- | European Union |
- | Iran | Turkey |
- | The United States |

**THE UNITED STATES**

**A NEW TYPE OF OIL**

The United States is one of the major producers of soybean oil, producing about 11 million metric tonnes in 2018 from a global total of about 56 MMT. Soybean oil is the dominant oil consumed in the United States and is valued as a food because of its high levels of essential fatty acids (linoleic and linolenic acids) and high proportion of omega-3/omega 6 (n-3/n-6) fatty acids. The production of soybean oil is closely linked to the production of soy protein isolates for foods and soy protein meal for animals. In recent years, plant breeders have developed new varieties of soybeans that produce a high oleic soybean oil (about 75% oleic acid) and this new type of oil has been recognized to have improved oxidative stability, lower levels of saturates, and improved nutritional properties compared to conventional vegetable oils. Codex has standards for both mid- and high-oleic acid containing oils. With the current interest and development of high oleic oils from several other plants (peanut, rapeseed/canola, and algae), it will be an opportunity for Codex to develop standards for these new oils to facilitate their trade and ensure their safety and authenticity.





## EUROPEAN UNION

### AUTHENTICITY AND QUALITY

CCFO has developed a number of very useful standards which facilitate safe global trade in fats and oils thus serving both exporting and importing countries. A good example is the *List of Acceptable Previous Cargoes* which has proven to be of special importance for countries which do not have the capacity to carry out necessary risk assessments at the national level and therefore rely on Codex for guidance. Another example of valuable CCFO work is the ongoing revision of the Codex standard for olive oil which should result in an international standard with the latest knowledge of the characteristics of olive oils contributing to consumers trust on the authenticity and quality of olive oil worldwide and to fair trade practices.

# Points of view

## CHINA

### AN IRREPLACEABLE ROLE

Fats and oils play an irreplaceable role in Chinese cuisine, which makes China a major importer as well as an exporter on the global market for fats, oils and related products. The Codex Committee on Fats and Oils (CCFO) has worked on major global concerns and delivered standards that help address issues concerning health and trade. The food standards in China that deal with fats, oils were developed in consultation with the relevant Codex standards. China would like to compliment CCFO on its achievements and will go on working collaboratively with other countries in CCFO and other Codex committees in the future to safeguard health and promote fair practices in food trade.

# Taking a neutral position In the fats and oils Chair



©UK Food Standards Agency

The fats and oils committee was hosted in the UK from 1964 until Malaysia took over in 2009. Michael Wight is interim Director of Policy at the UK Food Standards Agency and chaired the committee in 2007. He has also served on the Codex Executive Committee.

“The UK was interested in hosting fats and oils as it allowed us to take a more neutral position compared to committees such as food hygiene where the UK is active and would have a particular viewpoint”, said Wight. This provided the chair with neutrality and the freedom to listen to all participants dispassionately without any conflict of interest. “It’s a lively committee. I’m not a scientist and so discussions around linoleic acid for example, always made me appreciate the scientists I had sitting beside me”, he said. Chairing a technical committee it can sometimes be an advantage not knowing all the technical details so the chairperson can listen to both sides of an argument. “I really enjoyed it, a really well-behaved committee”, said Wight, “most of the time”. Navigating a course through national positions that facilitates trade and protects health is in Wight’s words “incredibly interesting, achieving balance and pulling that Codex philosophy through the whole system”.

Interviews  
➤ Michael Wight

## Still on previous cargoes

Previous cargoes were on the agenda of the committee in 2007 and they are still there now. Every country in Codex is concerned about food safety and the level of inadvertent contamination and the consequences to public health you may get from putting foodstuffs into a container that has been carrying something else, because tankers are not always going to be carrying food. “Codex is about making sure that you have standards that can enable trade but it is also ultimately about safeguarding public health and if you cannot do that then nobody is going to trust your food system and no-one is going to want your goods”, said Wight. You may find animal feed going one way and then a GM crop coming back and this could be of concern for example. Finding contamination may result in the food not meeting regulations and so it cannot be sold on the home market. Countries will have different views therefore on what an acceptable previous cargo might be.

## Future challenges

Challenges will include how to produce food that is environmentally sound whilst meeting the demand for good, wholesome, safe food. Consumers are increasingly expressing concern about available resources and regulatory authorities in the view of Michael Wight will also have to balance sustainability, the environment and consumers’ wider interests. This means that areas such as food labelling and information to consumers all need to be considered part of risk management.

## Staying relevant

Michael Wight is a great supporter of Codex but with 188 members it is not always possible to have a quick discussion and get agreement on everything. “To stay relevant, countries need a framework where they can adopt standards quite rapidly”. A lot more needs to go on “behind the scenes” so that countries with a genuine interest can come together and work on their disagreements. Meanwhile, multinationals are developing standards that go well beyond what Codex requires in response to consumer demand. Wight said, “In a global food system, with all the interdependencies that brings, to stay relevant Codex does need to move faster and be a global facilitator with standards that make sense in today’s markets whilst at the same time supporting countries who want to enter those markets and not leaving anyone behind”.



## Codex is a great place to start



©FAO/Alessandra Benedetti

➔ Richard Cantrill

Richard Cantrill is an independent consultant and has been attending the fats and oils committee for over 20 years. He is the former Chief Science Officer and Technical Director of the American Oil Chemists' Society (AOCS) and initially became involved in Codex as a large number of AOCS methods are listed in the Codex fats and oils standards. He also chairs the interagency meeting of standard developing organizations, whose standards are used at the *Codex Committee on Methods of Analysis and Sampling (CCMAS)*.

"Methods of analysis are a way of guaranteeing the safety and quality of the oil in question", said Cantrill. They enable technicians to distinguish one product from another and help ensure that they are what they are supposed to be. In the standard for olive oil for example they also help ensure authenticity and combat fraud. "Consumers are more sensitive to authenticity these days and this requires better specifications and better methods of analysis", he said.

### Cost and scientific innovation



Regulatory bodies, basing their work around consensus, in general tend to be in what Cantrill terms "the safe zone" as regards science; certainly not cutting edge "because the methods used have to be accessible to everyone not just rich exporters or private companies", he said. "For nations starting to export, Codex standards are a great place to start". Codex standards tend to mirror the best practices of most trade organizations and trading nations and as such form a benchmark that countries can adopt as a starting point in their own legislation.

### Where are the experts?

The first meeting Cantrill attended, he noticed how almost every delegation had a technical expert with them and it was "very easy to have a scientific discussion". Today delegations often have to report back to their capitals for an opinion which "drags the procedure out instead of a group of people having an ad-hoc meeting and saying 'well that's a good idea'".

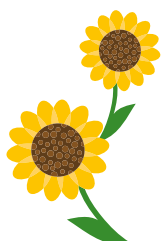
### Authenticity



There are not enough markers in fats and oils to differentiate one from another. There are new soybean oils with fatty acid composition that look exactly like olive oil and it is going to be relatively hard to tell them apart. "We're getting into the area of consumer hand-held devices that go beyond simply reading barcodes", said Cantrill. The battle lines are being drawn between those companies leveraging consumer concerns and uploading data to the cloud whilst scientists question whether this is all going to be scientifically correct.

### Staying relevant with quicker answers

Ricard Cantrill believes "Codex needs to break down some of the silos to stay relevant". It is hard to see where things are housed unless you have an overview of the different facets of Codex. Cantrill advocates for much more discussion and communication between the committees especially those bodies that meet less frequently and at different intervals. "Issues such as trans-fatty acids are moving between the nutrition committee and CCMAS without necessarily talking to CCFO where the expertise in fatty acids resides", he said. Increasing and streamlining the amount of work done between sessions and "ensuring working groups are actually consensus building and not just opinion collecting is one area where improvement is needed".



# Observing Codex

Fish oil is produced from small pelagic fish species like the Peruvian anchovy, that have no or only a limited direct human consumption market, as well as trimmings such as heads, tails and viscera of fish processed as food. Annual global production of fish oil is around 1 million tonnes with South American, Scandinavian countries, the United States and South Africa, being major players. Currently approximately 70% of global fish oil goes into aquafeed and around 20% into direct human consumption, through capsules often taken as a so-called “nutraceutical products” for benefits to cardiovascular health and other health indices.

The fishmeal and fish oil industry is highly technical in nature, producing very nutritious products for farmed fish, pigs, poultry and humans, from marine resources that are otherwise not utilised. The fisheries that supply the materials are often seasonal, and as a consequence production is phased to supply, with plant located in coastal regions to facilitate delivery of fish and trimmings.

“Codex work is very important to us”, said Neil Auchterlonie, Technical Director of **IFFO, The Marine Ingredients Organisation**, a Codex observer. “We need to know and understand the business implications of any of the developing issues that concern standards and regulatory frameworks”. One reason IFFO attends the fats and oils committee is their focus on the development of standards for fish oils for human consumption. “This is a really important market for the industry and we need to be aware of any developing issues that relate to the marine environment including reviews of anthropogenic and environmental contaminants”, said Auchterlonie.

IFFO represents around 235 members from 50 countries collecting and collating market data and representing their members on legislative, regulatory and technical matters in different markets including, the EU, the United States and China. IFFO communicates the varying regulations from the major markets to its membership and at times works closely with officials and politicians. “How Codex garners scientific opinion on various topics is also very important to us as that will influence legislation in the markets that concern IFFO members too”, said Auchterlonie.

© IFFO / Rob Kennard

Interviews

➤ Neil Auchterlonie



# Standards

developed by  
the Committee

- **CODEX STAN 19-1981**  
Standard for Edible Fats and Oils not Covered by Individual Standards
- **CODEX STAN 33-1981**  
Standard for Olive Oils and Olive Pomace Oils
- **CODEX STAN 210-1999**  
Standard for Named Vegetable Oils
- **CODEX STAN 211-1999**  
Standard for Named Animal Fats
- **CODEX STAN 256-2007**  
Standard for Fat Spreads and Blended Spreads
- **CODEX STAN 329-2017**  
Standard for Fish Oils
- **CAC/RCP 36-1987**  
Code of Practice for the Storage and Transport of Edible Fats and Oils in Bulk

## Meetings

### Codex Committee on Fats and Oils (CCFO)

#### CCFO25

27/02/17 – 03/03/17  
Kuala Lumpur • Malaysia

#### CCFO24

09/02/15 – 13/02/15  
Melaka • Malaysia

#### CCFO23

25/02/13 – 01/03/13  
Langkawi • Malaysia

#### CCFO22

21/02/11 – 25/02/11  
Penang • Malaysia

#### CCFO21

16/02/09 – 20/02/09  
Kota Kinabalu • Malaysia

#### CCFO20

19/02/07 – 23/02/07  
London • United Kingdom

#### CCFO19

21/02/05 – 25/02/05  
London • United Kingdom

#### CCFO18

03/02/03 – 07/02/03  
London • United Kingdom

#### CCFO17

19/02/01 – 23/02/01  
London • United Kingdom

#### CCFO16

08/03/99 – 12/03/99  
London • United Kingdom

#### CCFO15

04/11/96 – 08/11/96  
London • United Kingdom

#### CCFO14

27/09/93 – 01/10/93  
London • United Kingdom

#### CCFO13

23/02/87 – 27/02/87  
London • United Kingdom

#### CCFO12

19/04/82 – 23/04/82  
London • United Kingdom

#### CCFO11

23/06/80 – 27/06/80  
London • United Kingdom

#### CCFO10

04/12/78 – 08/12/78  
London • United Kingdom

#### CCFO9

28/11/77 – 02/12/77  
London • United Kingdom

#### CCFO8

24/11/75 – 28/11/75  
London • United Kingdom

#### CCFO7

25/03/74 – 29/03/74  
London • United Kingdom

#### CCFO6

17/11/69 – 20/11/69  
London • United Kingdom

#### CCFO5

16/09/68 – 20/09/68  
London • United Kingdom

#### CCFO4

24/04/67 – 28/04/67  
London • United Kingdom

#### CCFO3

29/03/66 – 01/04/66  
London • United Kingdom

#### CCFO2

06/04/65 – 08/04/65  
London • United Kingdom

#### CCFO1

25/02/64 – 27/02/64  
London • United Kingdom

# Protecting health, facilitating trade



“Ensuring the authenticity of food has been a problem for millennia” wrote Dr J R Bell, former Head of the Food Science Division in the United Kingdom *Ministry of Agriculture, Fisheries and Food* and Chairperson of the Codex Committee on Fats and Oils at its 14<sup>th</sup> session. The year was 1994 and Dr Bell was writing about how standards ensure authenticity in an FAO publication entitled *Food, Nutrition and Agriculture*.

Fast-forward 25 years and it is equally true today that where there is a commodity like fats and oils that commands a premium in the market with high value or high-volume sales there are going to be unscrupulous individuals or organizations who seek to profit from illegal activity.

Matters of food authenticity are less likely to create problems for public health but they can and do create great damage in the market, leading to breakdowns in consumer confidence and unfair competition as honest traders are unable to match the discounted prices of their fraudulent rivals.

The Codex Committee on Fats and Oils (CCFO) was established in 1964 to elaborate worldwide standards for fats and oils of animal, vegetable and marine origin including margarine and olive oil. The standards CCFO develops help to ensure product authenticity.

This publication explores how CCFO operates and the role Malaysia has played since taking over the committee from the UK in 2009. With contributions from producing nations, traders, members and observers, the reader will glimpse what goes on in an international standard setting body to ensure safe food and a level playing field for trade.

## For more information

[www.codexalimentarius.org](http://www.codexalimentarius.org)  
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