CODEX ALIMENTARIUS COMMISSION

Food and Agriculture Organization of the United Nations

World Health Organization

Viale delle Terme di Caracalla, 00153 Rome, Italy - Tel: (+39) 06 57051 - Fax: (+39) 06 5705 4593 - E-mail: codex@fao.org - www.codexalimentarius.org

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CODEX COMMITTEE ON FATS AND OILS

Twenty-forth Session

Melaka, Malaysia, 9 – 13 February 2015

ACTIVITIES OF INTERNATIONAL ORGANIZATIONS RELEVANT TO THE WORK OF CCFO

(FEDIOL, FOSFA, IOC)

FÉDÉRATION DE L'INDUSTRIE DE L'HUILERIE DE LA CE (FEDIOL) [1]

FEDIOL welcomes the invitation to provide information to the Codex Alimentarius Committee on Fats and Oils for discussion at its 24th session to be held in Melaka, 9th – 13th February 2015, as agenda point 2(b).

Introduction

FEDIOL is the European federation representing the interests of the vegetable oil and protein meal industry. FEDIOL members are 12 national associations of oilseed crushers and refiners. In countries where there is no association present or where the existing association is not a member of FEDIOL, individual companies can apply for associate membership. Currently this is the case in six more countries, extending the scope of FEDIOL to 18 EU Member States.

Directly and indirectly, FEDIOL covers about 150 processing sites that crush oilseeds and/or refine crude vegetable oils and fats. These plants belong to around 35 companies. It is estimated that over 80% of the EU crushing and refining activity is covered by the FEDIOL membership structure.

The oilseed processing activity is spread over 18 Member States with a concentration of plants with crushing and refining activities in countries such as Germany, the Netherlands, France, Spain, UK, Italy, Czech Republic, Poland, Belgium, Hungary and Romania.

FEDIOL, overview of activities

FEDIOL is active in many issues in the areas of food and feed safety, nutrition and labelling, environment, trade and access to raw materials, sustainable consumption and production. A brochure giving an overall overview is available here.

Whilst we do not aim to provide here an exhaustive list of such activities, we would like to illustrate FEDIOL work with the following ones which might be of interest to the Codex Alimentarius Committee on Fats and Oils:

Food Safety

FEDIOL members are committed to the quality and safety of their products as first priority. For that purpose, **codes of practice** are developed at FEDIOL level to further ensure the highest level of safety and quality of products along the supply chain by preventing or limiting the occurrence of contaminants in vegetable oils and fats, meals and by-products.

Examples of recently developed FEDIOL Codes of Practice include:

- a FEDIOL Code of Practice & Quality Assurance Agreement on the purchase conditions of Fresh Bleaching Earth and Filter Aids for vegetable oils and fats refineries and integrated plants (see here).
- a FEDIOL Code of Practice for the transport in bulk of oils into or within the European Union (see here).

FEDIOL is also monitoring and engaging closely on a number of food and feed safety issues including different contaminants and pesticides.

[1] This document has been prepared by and under the responsibility of FEDIOL.

This involves for example the **following contaminants and food safety issues**:

- on MCPD esters and glycidyl esters, FEDIOL continues to work in (1) understanding the formation pathways of these compounds, in (2) contributing to data collection to the European Food Safety Authority (EFSA), in (3) researching and implementing viable mitigation methods to reduce levels of MCPD esters and glycidyl esters in vegetable oils and fats on an industrial scale and in (4) disseminating information and sharing knowledge on the issue.
- on pesticides, FEDIOL is particularly involved in identifying applicable EU harmonized processing factors for vegetable oil and fat.
- on transport and previous cargos, in addition to the Code of practice cited above, FEDIOL has also developed a Practical Guide to previous cargo(es) restrictions for means of transport and tank lining as per FEDIOL Code of Practice for the transport in bulk into or within the European Union of vegetable oils and fats, which are to be (or likely to be) used for human consumption (see here). FEDIOL has been striving for a harmonisation between the different Lists of acceptable previous cargoes (CODEX List, EU List and FOSFA List).

Nutrition and Labelling

In the overall context of health, diet and physical activity, FEDIOL members have been supporting industry initiatives to improve the fatty acid profile of vegetable oils and fats (reduce TFA and SAFA and increase MUFA and PUFA) *via* reformulation, optimisation of refining processes and development of a FEDIOL Code of Practice on refining.

Following these numerous industry actions, low **TFA** vegetable oil and fat formulations are provided today to customers and consumers, enabling overall reductions in the TFA content of food products. Consequently, the intake of TFA in the EU has decreased considerably over recent years and is estimated to 1% on average on fat basis in products of the vegetable oil and fat sector.

FEDIOL continues to closely monitor developments around TFA, SAFA and vegetable fats and oils nutrition to ensure a science-based approach, when discussing reformulation, optimisation and dietary and nutritional recommendations.

For example, FEDIOL has recently contributed to the EU consultation towards a TFA report (see here) and to the Canadian discussion paper on a TFA free claim (see here). Communication documents are also regularly prepared. See for example a recent FEDIOL factsheet on palm oil (see here) and one on frying oils (see here).

Vegetable fats and oils fatty acid profiles and related standards

FEDIOL closely follows developments related to fatty acid profiles of vegetable oils and fats to ensure a continuous and uniform supply.

To that end, FEDIOL regularly participates in Codex electronic groups when it comes to specific vegetable oils and fats within the Standard for Named Vegetable Oils. For example, FEDIOL recently contributed, including with data, to the electronic WG discussions on sunflower oil and is also involved in the electronic WGs discussions around standard for high oleic soybean oil and high oleic palm oil.

FEDIOL is also closely monitoring the changes in fatty acid profiles of vegetable oils and fats available on the market, which can lead to discrepancies with the existing Codex standards. For example, FEDIOL recently issued a statement on the import of groundnut oil highlighting the current differences around some fatty acid profiles of groundnut (peanut) oil between the Codex standard and what is available on the market (see here).

FEDERATION OF OILS, SEEDS AND FATS ASSOCIATIONS LIMITED (FOSFA INTERNATIONAL)[2]

The Federation of Oils, Seeds and Fats Associations Limited (FOSFA International) is pleased to provide the following report to the Codex Committee on Fats and Oils for discussion at its 24th session to be held in Melaka, Malaysia, 9 – 13 February 2015.

Introduction

FOSFA is the association for international trading of oils and fats and oilseeds, and has observer status for the Codex Committee on Fats and Oils. The activities of the Federation may be summarised as follows.

- The issuance of internationally recognised and accepted contract forms.
- The organisation and administration of an effective arbitration service.

[2] This document has been prepared by and under the responsibility of FOSFA.

- The administration and management of an education and training programme.
- The provision of information and advisory services concerning contract forms, trade practices, technical matters and arbitration procedures.
- The administration of Schemes for Member Analysts and Member Superintendents associated with the development of methods of sampling and analysis to meet the increasing demands of the trade.
- Liaison with kindred bodies, governments, etc., to standardise practices for the good of the international trade.

FOSFA has over 1,000 members in 85 countries. It currently has over 50 contracts, and it is estimated that over 85% of the international trade in oilseeds and oils and fats is carried out using these contracts. This has the benefit of allowing traders to discuss the three major issues of quantity, date of delivery and price, while leaving the details to their contract execution departments. The details (such as which party organises the ship, which party insures the cargo, which samples and analyses the cargo, etc.) do not usually change and are well understood by both companies, being established globally and set out in FOSFA's contract terms. The contracts are readily available for use, and trading parties do not need to be a member of FOSFA to use the contracts, as the above figure indicates. However, should a dispute arise between the trading parties, this is taken to arbitration, organised by the Federation, before the parties are able to take the matter to the courts. This is so that the dispute can be resolved by those active in the trade for a reasonable cost before resorting to the legal profession and the associated costs. Most cases are settled in this way.

FOSFA's Role in Reducing Risk to Consumers

It has been accepted for many years that the biggest risk to food safety within this international trade is the transporting of the cargo by sea from the producing country to the consuming country. The management of this area of risk forms a major part of all FOSFA contracts and is described in the document 'Qualifications and Operational Procedures for Ships Engaged in the Carriage of Oils and Fats in Bulk for Edible and Oleo-Chemical Use'. It is accepted by most countries that the use of dedicated freight space is uneconomic, inefficient and environmentally unfriendly and thus, other cargoes may be carried as previous cargoes before the loading of edible oils. Over the decades of modern trade, it had been found that some cargoes should never be allowed as previous cargoes due to either their extreme toxicity, their intense bad flavour/smell characteristics, the difficulty in cleaning them out of the tanks or other problematic properties. Thus, when the contracts were revised in the mid-1980s with the increased awareness of food safety, and bulk parcels became more popular, a list of these products was drawn up and designated as 'the banned list'. Thus, under these standard 'banned list' terms of contract, the receiver would accept the cargo as long as the previous cargo was not on the banned list i.e. a known toxic or non-compatible (in foodstuffs) substance.

However, with the increase in the sophistication of consumers together with the increased value of branding and the fear of litigation, some companies wished to further reduce the risk of the consequences of a contamination from previous cargoes. Thus, in the early 1990s, a list of common previous cargoes which would cause few problems, if any, were there any carry-over was drawn up within FOSFA and other trade bodies. These were cargoes which were typically very water soluble or highly volatile, very easily cleaned, were not toxic and were easily detectable by chemical analysis. This list became know as the acceptable list of previous cargoes. Thus, by the addition of an optional clause to the contract, agreed between the parties, it became an 'acceptable list' terms contract where the receiver would accept delivery of the cargo as long as the previous cargo was included in the acceptable list.

Thus, the two lists are never applicable together within one trading contract. Depending on the terms of the contract, either the previous cargo must not be on the banned list (the standard position), or the previous cargo must be on the acceptable list (when specifically agreed). These conditions are always checked by the receivers' superintendents as instructed by their principals (see www.fosfa.org).

In 1993, the European Union decreed that all foodstuffs were destined be transported in dedicated freight from 1995. However, in 1996, after representation from the industry, oils and fats were given a derogation to this rule, but at the same time, it was decided that all previous cargoes for imports into the EU must be on the EU acceptable list. At that time, the EU broadly adopted the FOSFA acceptable previous cargo list, but since then, both bodies have added some new cargoes and removed some others. In 2009, the European Commission asked the European Food Safety Authority (EFSA) to evaluate these new items and, following the adoption of the Codex list, the items which were on the current list. EFSA were also asked to include the criteria which were adopted by Codex for determining acceptable previous cargoes. Following these evaluations, the EU issued a new list in May 2014. The FOSFA trade list and the EU list are, in the main, the same.

The only other country to adopt legislation which required all previous cargoes to be on the acceptable list is

China, in 2013. The list they used was the Codex list of acceptable previous cargoes. No other region has yet adopted the same type of legislation as the EU for oils and fats. However, it should be noted that the trading rules used extensively for imports into the USA (the National Institute of Oilseed Products, NIOP, rules) also require that all previous cargoes are on the NIOP List of acceptable previous cargoes, which is essentially the same as the FOSFA list. But this is not USA legislation.

In summary, while it is not FOSFA's role to dictate the terms of trade between parties, the contracts do offer them a method by which they can reduce the risk of serious consequences from contamination of their products by previous cargoes. There are obviously many products which do not appear on either list. In general, these products may be more toxic than those on the acceptable list, may be more reactive with oils and fats and may not be removed by further processing. Nevertheless, with good management of the ships' tanks (cleaning, inspection loading etc.) they would cause very few problems during the shipping part of the supply chain, while allowing greater flexibility in ship utilisation and voyage planning. It is also worth noting that the quality of the fleet used by the edible oils industry has continually been upgraded over the past two decades via the revision of their rules by the International Maritime Organisation.

Current work

The Federation continues to maintain and adapt its contracts to the changing business conditions through the decisions and recommendations of its various committees. Contracts for new/updated EU terms for Edible Tallow/Lard/ Poultry Oil, Acid Oil and Feed Fat Nos 72, 91 and 93, were issued with effect from January 2014. The General Oilseeds Contracts now include a Combined Crops Passport (CCP) Clause, replacing the outdated Pesticide Residue Clauses. The rapeseed contract, No 26A, has been revised with a new Glucosinolates provision as to levels and seed stock.

FOSFA has for many years, published a Code of Practice for Member Superintendents on their role of surveying the loading and unloading of its commodities. This code includes such vital aspects as tank inspection as well as weight determination. Following the adoption of belt weighing and draft survey provisions within the majority of the Oilseeds Contracts, this Code of Practice has recently been amended to cover these provisions.

Over the past 20 years, FOSFA has provided secretarial services for the International Organization for Standardization Committee ISO/TC34/SC11 -- Animal and vegetable fats and oils. This helps to ensure that the methods for the sampling and analysis of the commodities which are required by the industry for the checking and maintenance of quality during transportation are included in the work of the Committee. Recently, an automated method for the measurement of density has been published by the Committee.

The ongoing deliberations of the International Maritime Organisation also form part of the watching brief of the Federation. This body regulates the types of ships which are required to carry edible oils and fats across the oceans as well as many of the procedures which must be followed to maintain the safety of seamen and the quality of the maritime environment. FOSFA contributed data for a wide range of oils and fats back in 2005 when these products became regulated in line with other bulk substances; the MARPOL Annex II regulations.

Summary

FOSFA contributed significantly to the original Code of Practice for the Storage and Transport of Edible Fats and Oils in Bulk ion 1987. It has contributed to the updates to that document and was an active member of the group which developed the Codex criteria for acceptable previous cargoes. The Federation will continue to support the work of the Codex Committee for Fats and Oils in the areas of storage and transport.

INTERNATIONAL OLIVE COUNCIL (IOC) [3]

The International Olive Council (IOC) is a Madrid-based, intergovernmental organisation created in 1959 to administer the International Agreement on Olive Oil and Table Olives. This legal instrument was set up under the auspices of the United Nations to safeguard and develop olive cultivation and the produce of the olive. Its chief objectives are:

- To ensure regular international trading in olive products
- To develop international cooperation and to improve olive production
- To champion the quality of olive products
- To encourage consumption of olive oil and table olives

The following are Members of the Council: Albania, Algeria, Argentina, Egypt, the European Union (Austria,

[3] This document has been prepared by and under the responsibility of IOC.

Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and the United Kingdom), Iran, Iraq, Israel, Jordan, Lebanon, Libya, Montenegro, Morocco, Syria, Tunisia, Turkey and Uruguay. These 44 countries or 17 Members account for 97% of world production, 76% of global consumption, 96% of exports to the world market (excluding intra-EU trade) and 15% of world imports (again excluding intra-EU trade).

One of the activities assigned to the IOC to expand international trade is to draw up and adopt trade standards for olive oil and olive pomace oil, and for table olives, and to devise methods for testing their physico–chemical and organoleptic characteristics. The crucial point is that these international trade standards are mandatory for IOC Members. Hence, given the share of the world market held by IOC membership, they carry a great deal of weight.

When developing its testing methods and standards the IOC draws on the cooperation of international bodies, both intergovernmental like Codex Alimentarius and non-governmental like ISO, AOCS and IUPAC. Methods of analysis that are specific to olive oil are assigned a special reference: COI/T.20 and are recommended in the IOC trade standard. All this information about the IOC can be accessed at the IOC web site at http://www.internationaloliveoil.org/estaticos/view/157-structure-of-chemistry

The team of chemists who collaborate with the IOC are all experts nominated by their respective governments. They conduct research and interlaboratory tests to develop or finalise methods for IOC approval, aimed at preventing fraud and promoting olive oil quality. Some experts from non-IOC Members or from industry organisations also attend as observers or for very specific subjects. Since 2014, the agenda of the chemistry expert meetings is public to facilitate written input from experts-stakeholders who would not usually be invited to the meetings. The aim of doing so is to reinforce the remit of the IOC as a global forum for olive oil matters. Another example of this international role of involving experts from non-IOC Members is the work carried out in 2014 with experts from the Food & Drug Administration of Taiwan on methods for the identification of copper pyropheophytin in olive pomace oils. Ongoing and completed work covers a range of subjects:

- Revision of COI-referenced methods (phenolics, fatty acids, aliphatic alcohols, alkyl esters and waxes, etc.);
- Drafting of new COI-referenced methods (peroxides, acidity, HPLC determination of sterols, etc.);
- Coordination of research on testing methods to find solutions to problems generated on the international market;
- Organisation of annual check tests for IOC recognition of physico–chemical and sensory testing laboratories;
- Detection of extraneous oils in olive oils;
- Organisation of ring tests for the determination of contaminant residues and pesticides;
- Evaluation of the oxidative status of olive oil;
- Detection of the addition of deodorised olive oil to extra virgin olive oil;
- Organoleptic assessment of virgin olive oils (COI/T.20/Doc. No 15);
- Organoleptic assessment of table olives (OT/WG 1-01/Doc. No 4-2);
- Methods for testing oil-olives;
- Labelling;
- Harmonisation of olive oil testing methods issued by standards institutions;
- Harmonisation of the Codex olive oil and table olive standards with IOC standards and preparations for upcoming Codex sessions.

Progress or developments in several noteworthy areas are now reported:

- **Method for the determination of sterols and triterpene dialcohols by capillary column gas chromatography** (COI/T.20/Doc. No 30)

At its 17th extraordinary session held in Istanbul in June 2011, the IOC Council of Members agreed to make this method applicable to olive oils as of 1 January 2012 and to olive pomace oils as of 1 January 2013. In December 2013, the method was revised and recommended for definitive application by Members to both these products. It was included in the Codex standard in July 2013.

- **Method for the determination of diacylglycerols and triacylglycerols** (COI/T.20/Doc. No 32)

In December 2013 the IOC adopted a Decision recommending its Members to apply this method provisionally until the IOC chemists take a stance on the limits for triacylglycerols.

A ring-test is planned to validate this determination. The IOC experts do not consider it advisable to fix a limit for diacylglycerols because extra virgin olive oil reaches thermodynamic equilibrium after a year, in which case this parameter would be of no use. Triglycerides determination enables detection of certain types of oils (palm, high oleic, etc.) but only when added singly; it is not effective if more than one extraneous oil is added.

- **Global method for the determination of extraneous oils** (COI/T.20/Doc. No 25 Rev.1)

This method was provisionally adopted by the IOC in 2006 for the detection of potential adulterations. Work continued with a view to its definitive adoption and countries were requested to forward relevant data (obtained using propionitrile).

It was definitively adopted in May 2013 for entry into force on 1 January 2014. However, due to difficulties in its application, the chemistry experts decided at their meeting in March 2014 to review some sections of the method, which has not been included as a compulsory method in the IOC standard. In October 2014 it was confirmed that an additional ring test was needed.

- **Reduction of stigmastadiene limit**

In May 2013, the IOC Council of Members adopted a new stigmastadiene limit of 0.05 mg/kg (instead of 0.10 mg/kg) for extra virgin and virgin olive oil because the previous limit did not afford sufficient guarantees to protect the quality of these products.

Research is currently underway to validate a direct method for the determination of stigmastadiene. A ring-test was organised for this purpose at the beginning of 2014. In October 2014 it was announced that a further ring-test was underway.

- **Reduction of myristic acid limit**

At the 100th session of the IOC Council of Members, the IOC Technical Committee adopted a proposal to lower the myristic acid limit to 0.03% in order to permit the detection of palm oil. The Council of Members endorsed this proposal and the new limit became applicable in May 2013.

- **Method for the determination of waxes**

The IOC experts considered it necessary to determine the percentage of C40 waxes relative to the total waxes due to the integration of peaks that ought not to be included, and to conduct further testing to check whether the limit was applicable to all oils.

At its 100th session, the Council of Members adopted the reduction of the wax limit for extra virgin and virgin olive oils to 150 mg/kg for C42+C44+C46 (C40 is no longer taken into account). The lower limit became applicable as of May 2013.

- **Replacement of alkyl ester parameter by ethyl esters (for extra virgin olive oil only)**

As of May 2013, the determination of total alkyl esters has been replaced by that of solely ethyl esters. The following limits and timing were approved for their application:

≤40 mg/kg in 2013/14

≤35 mg/kg in 2014/15

≤30 mg/kg from 2015/16

FAEE + FAME < 75 mg/kg during the 2012/13 crop year

Several research projects are underway to determine how this parameter changes in extra virgin olive oils over time.

- **Method for the organoleptic assessment of virgin olive oil**

This method underwent extensive revision in 2007, in particular to amend the median of the defect predominantly perceived between the extra virgin and virgin categories of olive oil, which was raised to 3.5 on taking into account the uncertainty of the method. The method and accompanying standards are reviewed on an ongoing basis as research makes advances. The most recent revision was adopted in 2013

to amend the software used to calculate the classification of virgin olive oil and to improve panel homogeneity.

- **Compositional survey of olive oils with anomalous parameters**

In 2008 the IOC Council of Members decided to set up a restricted working group on olive oil composition and varietal identification to investigate the cases of authentic olive oils produced from autochthonous varieties for which certain parameters did not comply with the limits fixed in the IOC trade standard.

Producer countries were requested to complete a questionnaire and to ship samples of off-standard oils for a survey designed to gain an insight into such cases and to propose the application of decision trees as a solution while maintaining the existing limits in order to guarantee product authenticity and to prevent potential fraud.

The results and conclusions of this three-year survey, which concerns olive oils with off-limit campesterol or delta-7-stigmastenol values, will be presented at the upcoming session of the Codex Committee on Fats and Oils (Malaysia, February 2015). Decision trees for such oils have been included in the IOC trade standard in order to strike a balance between the need to respect genuine virgin olive oils and the need to avoid facilitating fraud because the two parameters concerned – campesterol and delta-7-stigmastenol – are evidence of the addition of specific seed oils.

Composition of olive oils obtained from various varieties:

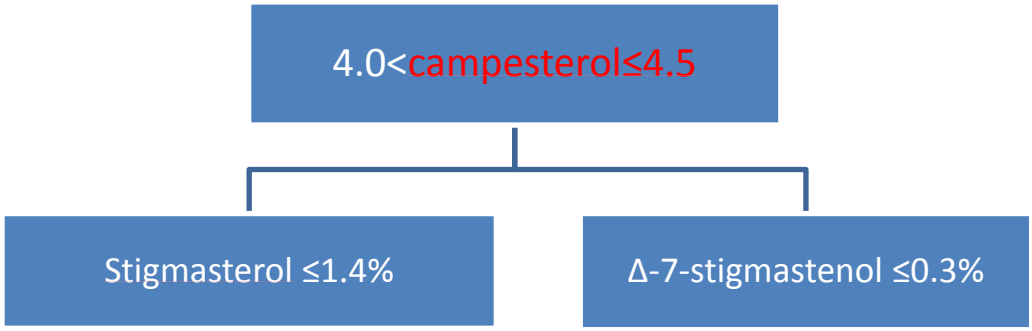
- **Adoption of decision trees to guarantee oil purity while allowing trading of authentic product that does not fully comply with standards**

In May 2013 it was decided to adopt three decision trees:

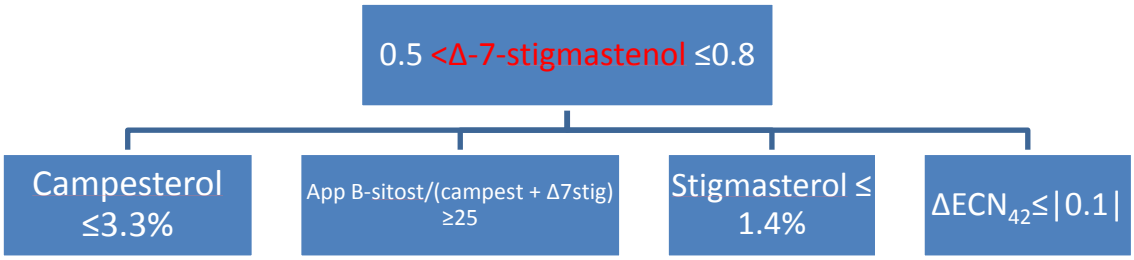
  - One for virgin and extra virgin olive oils with campesterol values between 4.0 and 4.5%
  - One for virgin and extra virgin olive oils with delta-7-stigmastenol values between 0.5 and 0.8%; and
  - One for olive pomace oils with delta-7-stigmastenol values between 0.5 and 0.7%

The rest of the parameters must comply with the limits fixed in the standard, particularly the new stigmastadiene limit (0.05mg/kg).

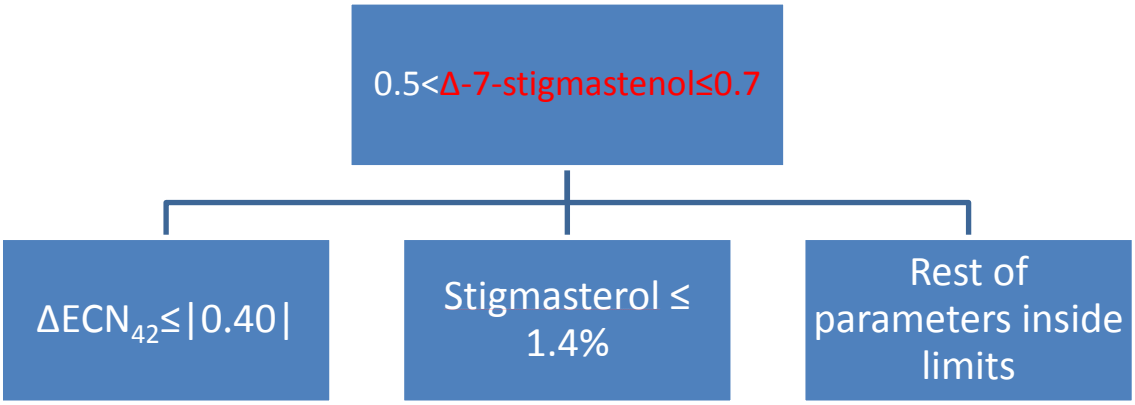
***Campesterol* decision tree for virgin and extra virgin olive oils:**



***Delta-7-stigmastenol* decision tree for extra virgin and virgin olive oils:**



***Delta-7-stigmastenol* decision tree for crude and refined olive pomace oils:**



- **Harmonisation of Codex standard for table olives with IOC standard**

The Executive Secretariat submitted a proposed revision of the Codex standard in 2004 in order to bring it into line with the IOC trade standard for table olives. This revision was included in the Codex list of priorities. After the work carried out by the electronic working group set up especially for this purpose, the revision was approved at the session of the Codex Committee on Processed Fruits and Vegetables (CCPFV) on 15–19 October 2012 and definitively adopted by the Codex Alimentarius Commission in July 2014.

- **Harmonisation of IOC methods with ISO standards**

Cooperative ties between the two institutions have been strengthened in recent years with a view to harmonising ISO standards with the testing methods cited in the trade standard of the IOC, which is the specialist international intergovernmental agency for olive products.

- **IOC recognition of chemical and sensory testing laboratories**

The IOC runs annual collaborative tests to check the proficiency of olive oil chemical and sensory testing laboratories. Laboratories which obtain satisfactory test results and prove they have been awarded accreditation by a national laboratory accreditation body are granted IOC recognition for the pertinent one-year period (from 1 December of one year to 30 November of the next).

In all, 80 chemical testing laboratories and 65 olive oil tasting panels from a spectrum of IOC member and non-member countries participated in the ring tests to earn entitlement to IOC recognition for the period from December 2014 to November 2015.