CODEX ALIMENTARIUS COMMISSION E

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

Agenda Item 10 **CX/CAC 13/36/10-Add.4**

JOINT FAO/WHO FOOD STANDARDS PROGRAMME

CODEX ALIMENTARIUS COMMISSION

36th Session, FAO Headquarters
Rome, Italy, 1-5 July 2013

MATTERS REFERRED TO THE COMMISSION BY CODEX COMMITTEES AND TASK FORCES

MATTERS REFERRED FROM THE 35TH SESSION OF THE COMMISSION DISCUSSION PAPER FOR THE ESTABLISHMENT OF CODEX COMMITTEE ON SPICES, AROMATIC HERBS AND THEIR FORMULATIONS

(Prepared by India)

Additional Project Documents

This document should be read inconjunction with CX/CAC 13/36/10-Add.2

Proposal for New work on Codex Standard for Dehydrated Thyme

Introduction

Thyme, botanically-known as *Thymus vulgaris*, gets its name from the Greek word '*thymon'*, a herb used as incense or as a fumigator during sacrifices. Thyme is the general name for the herb varieties of the species *Thymus* which are native to Europe and Asia. There are over one hundred varieties of thyme. Thyme is native to western Mediterranean region, extending to South Eastern Italy. A member of the mint family, thyme is a perennial evergreen shrub, whose sometimes woody stems are covered with small, gray-green to green leaves. Thyme is a variable shrub with its small, two-lipped flowers range in color from pale pink to purple and bear quadruplet nutlet fruits. The entire plant is aromatic. Some plants have variegated leaves and grow to about 25 cm in height. The leaves, flowering tops and essential oil are used.

The flowering thyme tops contain an essential oil consisting primarily of *thymol* and *carvacrol*, along with tannins, bitter compounds, saponins, and organic acids. There is an international standard for the quality requirement for dried thyme. The essential oil content of the dried whole leaves should be minimum 0.5% oil and that for dried powder should be 0.2% oil.

1. The Purpose and Scope of the Standard

The scope of the work is to establish a worldwide standard for Thyme - *Thymus vulgaris*, which must supply dehydrated thyme to consumer after proper preparation and packaging. Thyme is the general name for many of the herb varieties of the *Thymus* species, all of which are native to Europe and Asia.

The objective is to develop a world-wide standard based on basic characteristics like moisture, total ash content, acid insoluble ash, volatile oil content, extraneous matter etc.

2. Relevance and Timeliness

The need to have an international standard for thyme stems from the fact the crop is grown in developing countries in fragmented areas by marginal farmers. Thyme is grown in many areas of the world. It is globally traded and is not limited to any particular region. Therefore, it is necessary to establish standard covering quality characteristic of thyme such as moisture, total ash content, acid insoluble ash, volatile oil content, extraneous matter etc.

3. Main aspects to be covered

The standard entails aspects related to the properties of Thyme in dehydrated form incorporating physical parameters, presence of extraneous matter, oil content in order to provide adequate product characteristics. To supply high quality products, the objective of the standards is:

- Establish the minimum requirements for Thyme in its dehydrated form including and in additions to the quality parameters like the physical appearance, uniformity of the product and other extraneous matter etc.
- Define the categories to classify Thyme in accordance with the characteristics of the herb; such as for cut herbs, essential oil, fixed oil, extracts etc.
- Include the provisions to be considered related to the uniformity of the packaged product and the packaging used.
- Include provisions for the labeling and marking of the product in accordance with the general standard for the labeling of prepackaged foods.
- Establish tolerances regarding quality and size permitted in packaged Thyme.
- Include provisions for hygiene with reference to the recommended international Code of Practice for hygiene and general principles of food hygiene, contaminants, pesticides residues and methods of analysis.

4. Assessment against the Criteria for the Establishment of Work Priorities

4.1 General criterion

The elaboration of the standard for the forms of Thyme would be to the benefit of many countries in general and more particular in the case of developing countries who export so that their competency could be raised. Arriving at levels of standardisation based on the properties of different varieties to meet industrial and consumer needs with exactness and credibility.

Criteria applicable to commodities

(a) Volume of production and consumption in individual countries and volume and pattern of trade between countries:

Thyme is produced from cultivated and wild harvested plants in most European countries, including France, Switzerland, Spain, Italy, Bulgaria, Portugal and Greece. Some of the Asian countries like India, Thailand and Singapore are also producers. Australia is also a major producer. Yield and quality of essential oil varies according to the genetic make-up of plant material, crop maturity at harvest, environment and distillation practice. Southern European herb growers benefit from the longer growing season owing to climate advantages. Therefore, most of the thyme produced in Europe comes from France, Spain and Portugal.

It is noted from the Eurostat (2009) that the production of herbs/aromatic plants and plants for seasoning are produced in several European countries. The production in 2008 is of the order of 130 thousand tonnes approximately. These include Thyme.

Most of the thyme produced is for the fresh and dried market. Yields of *T. Vulgaris* for fresh herb production can be five to six t /ha and for dry herb production can be two t/ha. Under irrigation, thyme will yield about 15 tonnes of plant material per hectare per annum, at an oil recovery rate of 0.5 to one percent or 75 to 150 kg/ha per annum. Under dry land conditions the yields will vary considerably. Few producers in South Africa are distilling thyme for essential oil production.

Cultivation of the traded herb is primarily in Spain, France, Italy and Bulgaria. An essential oil yield of 1.0 % (10 ml oil/kg fresh thyme) is expected from wild thyme in hot summer conditions. Yields may decrease to 0.10 % in winter. Yields from cultivated material range from 0.05 to 0.50 %, depending on variety. However, herbage yields under cultivation far exceed production in the wild, so more oil would be produced per hectare in cultivated crops. In Switzerland, selected cultivars are yielding 3 % essential oil from fresh herbage of more than 15 t/ha.

On account of the unorganised production scenario, exact figures of production of the crop are not available. However International Trade Centre Geneva had compiled figures for exports and imports of thyme clubbed with bay leaf statistics as listed below:

Year	Export (Quantity in MT)	Import (Quantity in MT)
2006	3717.708	9328.591
2007	1713.462	975.564
2008	389.489	-

Source: Commodity Trade Statistics Database | United Nations Statistics Division

The above data pertains to Albania, Argentina, Austria, Australia, Azerbaijan, Brazil, Bulgaria, France, Greece, India, Italy, Mexico, Portugal, Singapore, Spain, Switzerland, Thailand, United Kingdom, USA etc.

(b) Diversification of national legislations and apparent resultant or potential impediments to international trade:

Imports of Thyme take place for many applications. It goes for dehydration and distillation in the producing countries. The consignments are traded based on applications and consumer requirement. However it would be preferred that the trade in dehydrated Thyme is carried under an International criteria based on Codex Standard. Therefore, the new work would provide internationally recognized specific standards in order to enhance international trade and to accommodate the importer's requirements.

Forecasts show that the overall consumption and trade in Thyme will rise with more application. Any extra addition in production could be well absorbed by the global market on account of the continued demand by processing industries.

International Standard (ISO 6754:1996), prescribes quality requirements for Dried Thyme. But an international standard is required since buying entities undertake different standards while effecting purchases which is detrimental to the interest of the marginal farmers and developing nations. The essential oil content of the dried herb is an important factor contributing to the flavour intensity.

Due to lack of international standard for thyme, international trade has been widely affected. Importers prefer to import based on internationally accepted standard. Therefore, new work would provide international recognized specific standard in order to enhance international trade.

As a result, by eliminating the variable (sometimes conflicting) sets of rules and regulations, trade barriers will be reduced and we would gain a comprehensive legal framework for the minimum acceptable standard for Thyme internationally.

(c) International or regional market potential:

Thyme is one of the most important European culinary herbs. Because the leaves are leathery and contain little water, they dry without excessive loss of flavour and are most often used in this form.

Global export for Thyme from 2008-2012 averages to be around 3000 MT and the import figures from 2009-2012 is around 1600 MT.

(d) Amenability of commodity to standardization:

The characteristics of Thyme, from its cultivation to harvest, fruit characteristics, cultivar varieties, composition, quality and packaging all lend to adequate parameters for the standardization of the product. There are existing standards in different countries as well as ISO which indicates amenability to standardization though harmonization.

(e) Coverage of the main consumer protection and trade issues by existing or proposed general standards.

There is no general commodity standard covering thyme. The new work will facilitate trade by establishing an international agreed quality standard.

(f) Number of commodities which would need separate standards including whether raw, semi-processed or processed.

The standard will be for one commodity dehydrated Thyme.

(g) Work already undertaken by other international organization in this field.

There is no other international organization that has undertaken international standard for thyme**.** International organizations like the European Spice Association, American Spice Trade Association and ISO have dealt with the standards for Thyme. Many conventions including that of the World Spice Congress and the World Spice Organisation have addressed the issue of harmonization of grades and specifications for herbs. Thyme is a herb produced in developing and developed countries. Moreover, significant concerns were raised in the International Organization of Spice Trade Associations (IOSTA), World Spice Congress and World Spice Organization meetings to standardise the quality parameters.

5. Relevance to the Codex strategic objectives.

The proposal is in line with the Strategic Vision Statement of the Strategic Plan 2008-2013, in particular, **Activity 1.2, 4.1, 5.1** and aims at setting up internationally accepted minimum quality requirements of Thyme for human consumption. It also contributes to fair trade practices wherein the farmers will be able to assess their produce with reference to the quality standards thereby empowering them to realize more monetary values. The reference made to Codex food safety standards in the World Trade Organizations' SPS Agreement means that Codex has far reaching implications for resolving trade disputes.

6. Information on the relation between the proposal and other existing Codex document

This proposal is for a new global standard and has no relation to any other existing Codex text on this item, except that this standard will make reference to relevant standards and related texts developed by general subject committees.

7. Identification of any requirement for and availability of expert scientific advice.

There is no need foreseen for expert scientific advice. Published research documents by international bodies will be referred in the process of preparing the standard, if found necessary.

8. Identification of any need for technical input to the standard from external bodies so that this can be planned for.

The technical inputs from ISO, EU, American Spice Trade Association, European Spice Association and World Spice Organization shall be welcomed as they have already done work related to the subject. Also ISO standards can be used as a step process to frame the Codex standards for Thyme.

9. Proposed Time Schedule.

In case the Commission approves establishment of the proposed Codex Committee on Spices, Aromatic Herbs and their Formulations, the following timelines are proposed:

DATE	ADVANCE AND PROCEDURES
Between July 2013 and March 2014	Prepare draft agenda along with new work proposals. These proposals will be prepared through electronic consultation with members to start work of the Committee.
June/July 2014	Critical review of new work proposals by CCEXEC; Approval of new work proposals by the Commission
First half of 2015	Committee to hold its first session and consider new work items at Step 3; Committee also to consider prioritizing its work.
Second half of 2016	Consider draft standard at step 5 with the possibility to recommend adoption at step 8
CAC 2017	Adoption of the standard at step 8

Proposal for New work on Codex Standard for Brown/Black Cumin

(Whole and Ground)

(Proposal submitted by India)

Introduction

Cumin seeds are one of the world's most popular spices sought after in Asia, South America and North Africa. Indigenous to Egypt and India, cumin is also grown in China, Egypt, Iran, Mediterranean region and Syria. Cumin seeds come in two varieties: Cumin with a brownish colour tone (*Cuminum cyminum*) from the family of Apiaceae and black cumin (*Nigella sativa*) from Ranunculaceae family

Cumin (brownish) is being produced in tropical regions and the world production is estimated to be around 300,000 tonnes. Being an earliest known minor seed spice used by mankind, the typical pleasant aroma of this seed is due to their volatile oil content, the principal constituent of which is cuminol. The cumin plant grows to 30–50 cm (0.98–1.6 ft) tall and is harvested by hand. It is an annual herbaceous plant, with a slender, branched stem 20–30 cm tall. The leaves are 5–10 cm long, pinnate or bipinnate, with thread-like leaflets.

Black cumin is an annual herb plant, which grows to about 40 cm (1.31 ft) high, has ridged, pinnate leaves and light blue blooms. The small triangular seeds are velvety black in color. It is native to Southern Europe, West Asia, India and North Africa. Its initial place of origin is most probably West Asia. Black cumin has been in use in the Orient since presumably more than 3,000 years. A whole black cumin seed can be characterized by a very dark colour and a thin, crescent shape with a pungent bitter taste and smell.

Cumin seeds come from the fruits which are a lateral fusiform or ovoid achene four to five mm long, containing a single seed of oblong shape, longitudinally ridged and yellow brown in colour like other members of the Umbelliferae family.

Cumin seeds contain numerous phyto-chemicals that are known to have antioxidant, carminative and anti-flatulent properties. The seeds are an excellent source of dietary fiber and have anti-carcinogenic properties. The active principles in the cumin may increase the motility of the gastro-intestinal tract as well as increase the digestion power by increasing gastro-intestinal enzyme secretions. This spice is an excellent source of minerals like iron, copper, calcium, potassium, manganese, selenium, zinc and magnesium. It also contains very good amounts of B-complex vitamins such as thiamine, pyridoxine, niacin, riboflavin, and other vital anti-oxidant vitamins like vitamin E, vitamin A and vitamin C. The seeds have moisture 6.2 %, protein 17.7%, fat 23.8 %, fiber 9.1%, carbohydrates 35.5% and mineral matter 7.7% per 100 gms. The main component of cumin essential oil is 4-isopropylbenzaldehyde or cuminaldehyde (>30%), together with smaller amount of p-mentha-1, 3-diene-7-al, p-menth-3-ene-7-al angamma-terpinene- all compounds with the same carbon skeleton.

1. The Purpose and Scope of the Standard

The Scope of the work is to establish a worldwide standard for brown and black cumin obtained from varieties *Cuminum cyminum* of the Apiaceae family and *Nigella sativa* of the Ranunculaceae family respectively, which must be supplied whole or ground to the consumers after proper preparation and packaging. Cumin from different country sources are traded internationally and the prominent ones are from Egypt, India, Iran and Middle East (covering the regions of Pakistan, Syria and Turkey).

The objective of a world-wide standard is to consider quality characteristics like colour, size of the seeds, purity of the seeds, active ingredients like cuminol and any other factors for whole or ground consumption of brown and black cumin to establish an international document.

2. Relevance and Timeliness

Cumin produced and traded worldwide and the prominent ones are from Egypt, India, Iran and Middle East (covering the regions of Pakistan, Syria and Turkey).

It is presumed that the global trade in cumin will go up on the lines of the growing awareness on the numerous applications for wellness and health benefits from the consumption of Cumin, both in brown and black forms. It is likely that the demand base for cumin will also get broadened increasing the market potential.

Almost all the cumin producing countries are developing nations and small and marginal farmers and not limited to any particular region. Hence, relevance of establishment of cumin standard is such that it is high time that a standard covering quality characteristics especially active ingredients, bulk density, physical size in the case of whole form through consensus between producing and trading countries. This will avoid discrepancies among the producing and trading countries.

3. Main aspects to be covered

The standard for cumin covers the following aspects:

- Establish the minimum requirements for cumin in addition to the quality parameters like the cleanliness of the seed and other extraneous matter etc.
- Define the categories to classify Cumin in accordance with the characteristics of the seeds; taking into account the whole product.
- Include the provisions to be considered related to the uniformity of the packaged product and the packaging used.
- Include provisions for the labeling and marking of the product in accordance with the general standard for the labeling of pre-packaged foods.
- Establish tolerances regarding quality and size permitted in packaged black and brown cumin both in whole and powder form.
- Include provisions for hygiene with reference to the recommended International Code of Practice for hygiene and general principles of food hygiene, contaminants, pesticide residues and method of analysis.

4. Assessment against the Criteria for the Establishment of Work Priorities

General criterion

The elaboration of the standard for the various derivaties of cumin would be to the benefit of many countries in general and more particular in the case of developing countries, as the developing countries are the major producers, exporters and consumers of cumin.

Criteria applicable to commodities

(a) Volume of production and consumption in individual countries and volume and pattern of trade between countries:

COUNTRY	Production (in Tonnes)
Afghanistan	4000
China	5000
India	250000
Iran	7000
Syria	10000
Turkey	8000

Source: Commodity Trade Statistics Database | United Nations Statistics Division and World Spices Congress 2012

Pattern of international trade

Qty (in MT)

Export	World
2008-09	1,28,686
2009-10	99,492
2010-11	81,426
2011-12	97,261

Source: ITC, Geneva

Qty (in MT)

Import	World
2008-09	1,17,925
2009-10	1,03,186
2010-11	1,08,074
2011-12	1,01,087

Source: ITC, Geneva

The above data pertains to Afghanistan, China, Egypt, India, Israel, Lebanon, Pakistan, Saudi Arabia, Singapore, Spain, Syria, Turkey, United Kingdom etc.

The global consumption of cumin is estimated to be 187,000 tonnes and the major importers are Brazil, Canada, Colombia, EU, Ecuador, Japan, Malaysia, Mexico, South Africa and USA.

(b) Diversification of national legislations and apparent resultant or potential impediments to international trade:

Being a commodity with lots of tradition in trade and commerce and in its use, cumin has its relevance in day to day life across the globe. There exist lots of differences in arriving at the quality of the product in terms of moisture levels, ash content, volatile oil, broken parts, extraneous matter etc. Each producing country has its own grades and specifications being followed over a period of time. Hence there are separately prevailing standards for instance for India, China, Egypt, Syria, Turkey etc. The levels prescribed for moisture content, extraneous matter, volatile oil etc. has variations in different standards which poses an apparent trade distortion.

Import of cumin takes place for many applications. It goes for direct culinary use in whole form, for powdering and for extraction based on specific objectives. Hence the trade takes shape based on applications and customer requirement. However trade in cumin is based on producing country's and importing country's mutually agreed conditions in terms of grades and specifications. However it would be preferred that the trade in cumin is carried under an International criteria based on Codex Standard. Therefore, the new work would provide internationally recognized specific standards in order to enhance international trade.

International organisations like the American Spice Trade Association, European Spice Association and ISO have dealt with the standards for cumin. Many conventions including that of the World Spice Congress have addressed the issue of harmonisation of grades and specifications for cumin. Cumin being produced in developing countries and traded globally not only by the exporters but also through re-exports by importers, is subject to various national legislations. To overcome the resultant or potential impediments to international trade, it is essential to incorporate all existing different standards in a single improved comprehensive standard acceptable across board internationally.

-However this is a spice of universal importance and has many things to do with health of consumers. By eliminating the variable (sometimes conflicting) sets of rules and regulations, trade barriers will be reduced and would gain a comprehensive legal framework for the minimum acceptable standards for cumin internationally.

(c) International or regional market potential:

The world market for imported spices and culinary herbs is valued at more than $2.8 billion. Of the top varieties by value, cumin occupies a position with 2.8 percent. The main importing regions are East Asia, EU, Malaysia, Nepal, North America and the US. India exports almost 70-75 per cent of the world's production. Syria and Turkey follow the line.

Demand for cumin is bound to go up in different countries mainly on account of increased applications in culinary delights where ever possible transcending borders, culminating in triggering global demand.

(d) Amenability of commodity to standardization:

The characteristics of cumin, from its cultivation through to harvest, fruit characteristics, cultivar varieties, composition, quality and packaging all lend to adequate parameters for the standardization of the product. This will include defining the seed according to its bulk density, size in its whole form, volatile oil content, and extraneous matter. There are existing standards in different counties as well as ISO, which indicates amenability to standardization through harmonization.

(e) Coverage of the main consumer protection and trade issues by existing or proposed general standards.

There is no general commodity standard covering cumin; the new work will facilitate cumin trade by establishing an internationally agreed quality standard.

(f) Number of commodities which would need separate standards including whether raw, semi-processed or processed.

The standard will be for Cumin – for both the varieties. The derivatives from cumin like dried, ground cumin will be examined under this individually.

(g) Work already undertaken by other international organizations in this field.

(i) Studies undertaken by various research organisations on the active ingredients in cumin, and Black cumin.

(ii) ASTA's Cleanliness specification for spices, seeds and herbs.

(iii) ISO

The need for setting up an international standard for cumin had discussed during International Organization of Spice Trade Associations (IOSTA) meeting, International Pepper Community (IPC), World Spice Congress (WSC) and World Spice Organization (WSO). Except for ISO, there is no other international organization that has undertaken international standard for cumin.

5. Relevance to the Codex Strategic Objectives

The proposal is in line with the Strategic Vision Statement of the Strategic Plan 2008-2013, in particular, **Activity 1.2, 4.1, 5.1** and aims at setting up internationally accepted minimum quality requirements of cumin for human consumption with the purpose of protecting the consumer's health and achieving fair practices in food trade. It also contributes to fair trade practices wherein the farmers will be able to assess their produce with reference to the quality standards thereby empowering them to realize more monetary values.

6. Information on the relation between the proposal and other existing Codex documents.

This proposal is for a new global standard and has no relation to any other existing Codex text on this item, except that this standard will make reference to relevant standards and related texts developed by general subject committees.

7. Identification of any requirement for and availability of expert scientific advice.

No expert scientific advice is foreseen at this stage. Published research documents by international bodies will be referred in the process of preparing the standard, if found necessary.

8. Identification of any need for technical input to the standard from external bodies so that this can be planned for.

The technical inputs from ISO, American Spice Trade Association and European Spice Association shall be welcomed as they have already done work related to the subject. Also ISO standards can be used as a step process to frame the Codex standard for Cumin.

9. Proposed Time Schedule

In case the Commission approves establishment of the proposed Codex Committee on Spices, Aromatic Herbs and their Formulations, the following timelines are proposed:

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