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 - E-mail: codex@fao.org - www.codexalimentarius.org

Agenda item 8.2 **CX/SCH 19/4/10**

JOINT FAO/WHO FOOD STANDARDS PROGRAMME
CODEX COMMITTEE ON SPICES AND CULINARY HERBS

Fourth Session

Thiruvananthapuram, India, 21 - 25 January 2019

PROPOSED DRAFT STANDARD FOR SAFFRON

Comments at Step 3

(Prepared by the Electronic Working Group chaired by Iran (Islamic Republic of) and co-chaired by India with assistance from Argentina, Chile, Greece, India, Japan, Poland and USA)

Codex members and Observers wishing to submit comments at Step 3 on this draft should do so as instructed in **CL 2018/61/OCS-CCSCH** available on the Codex webpage/Circular Letters 2018: http://www.fao.org/fao-who-codexalimentarius/circular-letters/en/.

INTRODUCTION

1. The third Session of the Codex Committee on Spices and Culinary Herbs (CCSCH3), held in Chennai India (February, 2017) agreed to establish an electronic working group (EWG) chaired by Iran and co-hosted by India, working in English, to elaborate the specific requirements for Saffron based on the concept of group standards i.e. category of "Dried Floral Parts"[1]. In undertaking this work, this EWG (Saffron) will closely collaborate with the EWG on "Cloves" to develop the overall group standard for "Dried Floral Parts".

2. The invitation to participate in the EWG was sent out with a deadline of July 31, 2017, for members and observers to register.

PARTICIPATION AND METHODOLOGY

3. EWG on group standard for dried floral parts (Saffron) was formally launched on September 27, 2017 and worked through the Codex EWG Platform. The first draft was uploaded on the EWG platform on November 05, 2017 and six (6) members submitted comments i.e. Japan, Greece, Poland, Argentina, India and USA. All the comments were considered, and the draft was revised and a second draft produced.

4. The second draft was uploaded on the platform on February 28, 2018, and comments were received from USA, Japan, Chile and Argentina. The comments were reviewed, and the second draft was updated accordingly.

5. The third draft was uploaded on September 26, 2018 and comments received from USA.

ANALYSIS OF ISSUES

6. The first draft of the proposed standard for Saffron was revised as follows, and taking into account the comments submitted:

   - The use of the term "dried", - one member suggested that this term be deleted whereas another member emphasised to use CCSCH standard template - "Dried Floral Parts according to Annex I.

   - The Scientific Name of saffron as indicated in the Table of Annex to the standard template was corrected to read *Crocus sativus* L *and not Biv*. ex *Steud*.,

   - One member suggested that the CCSCH standard format be used in the preparation of the proposed draft standard; and further proposed that grading was not necessary. The CCSCH Standards should establish the minimum requirements for consumer safety and trade, whereas, classes/grades should be set between the trading parties. The Chemical and Physical characteristics values submitted are the absolute minimum requirements for each form of the product. Both tables are placed in a format that facilitates the inclusion of other not yet named characteristics when needed or as they apply to an individual commodity. For the third draft these items had been considered.

[1]REP17/SCH, para 82 a & b

- It was also suggested that anticaking agents as food additives were generally acceptable, however this proposal was not accepted as in case of saffron the purity and prices of saffron were considered very important factors.

7. For the third draft, all the US comments were considered, except the chemical and physical characteristics (because of the importance of quality criteria).

CONCLUSION AND RECOMMENDATION

8. The chair and co-chair of Saffron EWG have completed the task according to comment received and programme of work and that the committee is in the position to move ahead with the development of this standard**.**

9. CCSCH4 is requested to consider the proposed draft requirements for saffron as attached in Appendix I, with the view to progress it through the Codex step procedure.

APPENDIX

PROPOSED DRAFT STANDARD FOR SAFFRON

(Step 3)

1 SCOPE

This Standard applies to saffron (dried floral parts) commonly sold in commerce as defined in section 2.1 below, offered for direct human consumption food processing and for repackaging if required. The exact species bought / sold may be defined by contractual specifications.

2 DESCRIPTION

2.1 PRODUCT DEFINITION

Dried floral parts (saffron) belonging to the plant varieties listed in Table 1.

Table 1: Dried Floral Parts covered by this standard

General Name	Specific Name	Scientific Name
Saffron	Saffron	*Crocus sativus* L.

Saffron is obtained from portion of the pistils (i.e stigmas with part of style) of *Crocus sativus* L. flower belonging to the *Iridaceae* family.

“Stigma” is the upper section of the aerial part of the pistil. “Style” is the part of the pistil between stigma and the ovary. The stigma is trumpet shaped, serrated or indented at the top and joined to the style at the end.

2.2 Styles/forms

Saffron may be offered in one of the following styles:

- Filaments
- Cut filaments
- Ground /powdered, or
- Other styles distinctly different for those three are allowed, provided they are labeled accordingly.

3. ESSENTIAL COMPOSITION AND QUALITY FACTORS

3.1 COMPOSITION

Dried floral parts as described in Section 2. Product Description.

3.2 QUALITY CRITERIA

3.2.1 Infestation

Saffron shall be free from live insects and practically free from dead insects, insects fragments and rodent contamination visible to the naked eye (corrected, if necessary, for abnormal vision) odour, flavour and colour.

3.2.2 Adulteration

Dried floral parts shall be free from any adulteration.

3.2.3 Odour, flavour and colour

Saffron shall be free from any foreign odour or flavour and especially from mustiness. They should have a characteristic odour and flavour depending on geo-climatic factors/conditions/varieties and the chemical strain of the main components of the volatile oil indicated in Annex 1.

3.2.4 Classification

Specific classes/grades of saffron may be set by contractual agreement between buyer and seller.

When unclassified/ungraded minimum requirements have to apply in accordance with this standard.

3.2.5 Chemical and physical characteristics

Saffron shall comply with the minimum chemical and physical properties in Table 1 and Table 2 in Annex 1.

4 FOOD ADDITIVES

No food additives particularly flavorings or colorants are permitted in the products covered by this standard.

5 CONTAMINANTS

5.1 The products covered by this Standard shall comply with the maximum levels of the *General Standard for Contaminants and Toxins in Food and Feed* (CXS 193-1995).

5.2 The products covered by this Standard shall comply with the maximum residue limits for pesticides established by the Codex Alimentarius Commission.

6 FOOD HYGIENE

6.1 It is recommended that the products covered by the provisions of this Standard be prepared and handled in accordance with the appropriate sections of the *General Principles of Food Hygiene* (CXP 1-1969), *Code of Hygienic Practice for low moisture foods* (CXP 75-2015), Annex III, and other relevant Codex texts such as codes of hygienic practice and codes of practice.

6.2 The products should comply with any microbiological criteria established in accordance with the *Principles for the Establishment and Application of Microbiological Criteria for Foods* (CXG 21-1997).

6.3 Packaging

The packaging must not be a source of contamination or migration, shall be food grade and must protect the product quality during transportation and storage. It must be free from off odours.

7 WEIGHTS AND MEASURES

Containers should be as full as practicable without impairment of quality and shall be consistent with a proper declaration of contents for the product.

8 LABELLING

8.1 The products covered by the provisions of this Standard shall be labelled in accordance with the *General Standard for the Labelling of Pre-packaged Foods* (CXS 1-1985). In addition, the following specific provisions apply:

8.2 Name of the Product

8.2.1 The name of the product shall be "saffron" as described in Section 2.1

8.2.2 The name of the product may include an indication of the style as described in Section 2.2.

8.2.3 Variety or cultivar may be listed on the label.

8.3 Country of origin/country of harvest

8.4 Commercial Identification

- Class/Grade, if applicable

8.5 Inspection mark (optional)

8.6 Labelling of Non-Retail Containers

Information for non-retail containers shall be given either on the container or in accompanying documents, except that the name of the product, lot identification, and the name and address of the manufacturer, country of origin, packer, distributor or importer, as well as storage instructions, shall appear on the container. However, lot identification, and the name and address of the manufacturer, country of origin, packer, distributor or importer may be replaced by an identification mark, provided that such a mark is clearly identifiable with the accompanying documents.

9. METHODS OF ANALYSIS AND SAMPLING

9.1 Methods of Analysis[1]

Parameter	Method	Principle
Moisture	AOAC 934.06 ISO 3623-2	Gravimetry
Total Ash	AOAC 941.12 ISO 928 ISO 3632-2	Gravimetry
Acid Insoluble Ash	AOAC 941.12 ISO 930 ISO 3632-2	Gravimetry
Soluble extract in cold water	ISO 941 ISO 3632-2	Solubility
Taste strength (expressed as picrocrocin) $A^{1\%}$ 1 cm 257 nm	ISO 3632-2	Absorbance
Aroma strength (expressed as safranal) $A^{1\%}$ 1 cm 330 nm	ISO 3632-2	Absorbance
Coloring strength (expressed as crocin) $A^{1\%}$ 1 cm 440 nm	ISO 3632-2	Absorbance
Artificial colorants	ISO 3632-2	Chromatography
Extraneous Matter	ISO 927 ISO 3632-2	Visual Examination
Foreign Matter	ISO 927 ISO 3632-2	Visual Examination
Insect Damage	ISO 927	Visual Examination
Insects/Excreta/Insect Fragments	ISO 927	Visual Examination
Note: The minimum laboratory sample according to ISO 3632-2 (Table 1) for duplicate analysis is: filament saffron: 11.5 g x 2 = 23 g powdered saffron: 6.75 g x 2 = 13.5 g		

[1] Latest edition or version of the approved method should be used

9.2 SAMPLING PLAN

(To be developped. It is suggested as follows :)

Sampling Plans

The appropriate inspection level is selected as follows:

Inspection level I - Normal Sampling

Inspection level II - Disputes, (Codex referee purposes sample size), Enforcement or need for better lot estimate

SAMPLING PLAN 1

(Inspection Level I, AQL = 6.5)

NET WEIGHT IS EQUAL TO OR LESS THAN 1 KG (2.2 LB)		
Lot Size (N)	**Sample Size (n)**	**Acceptance Number (c)**
4,800 or less	6	1
4,801 - 24,000	13	2
24,001 - 48,000	21	3
48,001 - 84,000	29	4
84,001 - 144,000	38	5
144,001 - 240,000	48	6
more than 240,000	60	7
NET WEIGHT IS GREATER THAN 1 KG (2.2 LB) BUT NOT MORE THAN 4.5 KG (10 LB)		
Lot Size (N)	**Sample Size (n)**	**Acceptance Number (c)**
2,400 or less	6	1
2,401 - 15,000	13	2
15,001 - 24,000	21	3
24,001 - 42,000	29	4
42,001 - 72,000	38	5
72,001 - 120,000	48	6
more than 120,000	60	7

ANNEX I

Chemical and Physical Specifications Dried Floral Parts- Saffron

Table 1: Chemical characteristics

General name	Form	Moisture content %w/w (max)	Total ash % w/w (max)	Acid insoluble ash %w/w	volatile oils mL/100 gm	Non-volatile ether extract %w/w	Water soluble extract cold On dry matter % max	Markers volatile oil
Saffron	Whole/ filament	12.0	8.0	1.0	NA*	NA	65	Picrocrocin: Min [50] Safranal: min 20 max 50 color as crocin: min 120
	Pieces/Chopped/ cut filaments	12.0	8.0	1.0	NA	NA	65	
	Ground/Powdered	10.0	8.0	[1.0]	NA	NA	65	

NA*: Not Applicable

Table 2: Physical Characteristics for Dried Floral Parts- Saffron

Product	Style/ form	Extraneous Matter % w/w (max0	Foreign Matter % w/w (max)	Insect fragments max. / 10 gm	Rodent filth Max. number of hairs /10 gm	Mold damaged % w/w (max)	Dead Whole insects, Count/ 100gm (max)	Mammalian excreta mg/Kg (max)	Other Excreta mg/kg	Insect defiled/ infested % w/w (max)	Other defects/ Comments
Saffron	filament	5.0	1.0	--	--	----	----	----	----	----	---
	cut filaments	[5.0]	[1.0]	---	---	----	-----	----	----	----	
	ground	1.0	1.0	---	---	----	----	----	----	----	