

CODEX ALIMENTARIUS

INTERNATIONAL FOOD STANDARDS



Food and Agriculture
Organization of
the United Nations



World Health
Organization

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STANDARD FOR DRIED FLORAL PARTS - SAFFRON

CXS 351-2022

Adopted in 2022

1. SCOPE

This standard applies to plant products in their dried or dehydrated form, as spices defined in Section 2.1 below, offered for direct consumption as an ingredient in food processing or for repackaging if required. It excludes products for industrial processing.

2. DESCRIPTION

2.1 Product definition

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

The “stigma” is the upper section of the aerial part of the pistil. The “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

Saffron may be offered in one of the following styles:

- filaments;
- cut filaments;
- powdered; and
- other styles distinctly different from the three above are allowed, provided they are labelled accordingly.

Filament is the dried stigma with a part of style of the *Crocus sativus* L. flower; cut filament is the dried stigma of the *Crocus sativus* L. flower (with styles removed completely detached from each other); and powdered is the particles obtained by crushing the filaments of the *Crocus sativus* L. flower.

3. ESSENTIAL COMPOSITION AND QUALITY FACTORS

3.1 Composition

Dried floral parts as described in Section 2.

3.2 Quality factors

3.2.1 Odour, flavour and colour

The product shall have a characteristic odour, flavour and colour which may vary depending on geo-climatic factors/conditions, and shall be free from any foreign odour, flavour and colour, especially from rancidity and mustiness.

3.2.2 Chemical and physical characteristics

The product shall comply with the requirements specified in Annex I (Table 1: Chemical characteristics of dried floral parts – saffron, and Table 2: Physical characteristics of dried floral parts – saffron). The defects allowed must not affect the general appearance of the product as regards to its quality, keeping quality and presentation in the package. There shall not be any form of adulteration in the product.

Saffron powder shall be safe and suitable for human consumption, free from living insects and practically free from extraneous and foreign matter in amounts which may represent a hazard to human health.

3.2.3 Classification

In accordance with the chemical and physical characteristics in Section 3.2.2, the product may be classified into one of the following classes:

- extra class;
- grade I/class I;
- grade II/class II; and
- grade III/class III.

When saffron is traded as unclassified/ungraded, the provisions for grade III/class III shall apply as the minimum requirements.

4. FOOD ADDITIVES

No food additives 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)¹ and any other relevant Codex texts.
- 5.2 The products covered by this standard shall comply with the maximum residue limits for pesticides established by the Codex Alimentarius Commission.

6. 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* (CXC 1-1969)², the *Code of hygienic practice for low-moisture foods* (CXC 75-2015)³, Annex III on spices and dried culinary herbs, and other relevant Codex texts such as codes of hygienic practice and other codes of practice.
- 6.2 The products should comply with any microbiological criteria established in accordance with the *Principles and guidelines for the establishment and application of microbiological criteria related to foods* (CXG 21-1997)⁴.

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)⁵. In addition, the following specific provisions apply:

8.2 Name of the product

- 8.2.1 The name of the product shall be “dried 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 and country of harvest

To be developed

8.4 Commercial identification

Grade/Class, if applicable.

8.5 Labelling of non-retail containers

The labelling of non-retail containers should be in accordance with the *General standard for the labelling of non-retail containers of foods* (CXS 346-2021)⁶.

9. METHODS OF ANALYSIS AND SAMPLING

9.1 Methods of analysis

For checking the compliance with this standard, the methods of analysis and sampling contained in the *Recommended methods of analysis and sampling* (CXS 234-1999)⁷ relevant to the provisions in this standard, shall be used.

9.2 Sampling plan

To be developed.

Table 1: Chemical characteristics of dried floral parts – saffron

General name	Class/Grade	Moisture content % w/w (max)		Total ash on dry basis % w/w (max)	Acid insoluble ash on dry basis % w/w (max)	Soluble extract in cold water on dry basis % w/w (max)	Taste strength	Aroma strength		Colouring strength
		Filament and cut filament style	powdered style				Picrocrocin	Safranal		Crocin
							Min	Min	Max	Min
		Saffron	Extra class				12.0	10.0	8.0	1.0
I	12.0		10.0	8.0	1.0	65	70	20	50	200
II	12.0		10.0	8.0	1.0	65	55	20	50	170
III	12.0		10.0	8.0	1.5	65	40	20	50	120

Table 2: Physical characteristics for dried floral parts – saffron

Product	Class/Grade	Extraneous matter % w/w (max)*	Foreign matter % w/w (max)†	Insect fragment, count /10 g (max)	Rodent filth max number of hairs/10 g	Mould visible % w/w (max)	Dead whole insects, count/10 g (max)	Mammalian excreta mg/kg (max)	Other excreta mg/kg (max)	Insect damage % w/w (max)
Saffron filament and cut filament	Extra class	0.25	0.1	N/A	0	0	0	0	0	0
	I	0.5	0.1	N/A	0	0	0	0	0	0
	II	3	0.5	N/A	0	0	0	0	0	0
	III	5	1.0	N/A	0	0	0	0	0	0

* Extraneous matter: Vegetative matter associated with the plant from which the product originates but not accepted as part of the final product (i.e. floral and plant waste).

† Foreign matter: Any visible/detectable objectionable foreign matter or material not usually associated with the natural components of the spice plant, such as sticks, stones, burlap bagging, metal etc.

N/A: Not applicable, means that this form of the above product has not been evaluated for this provision, and currently we do not have values. N/A does not refer to zero.

NOTES

¹ FAO and WHO. 1995. *General standard for contaminants and toxins in food and feed*. Codex Standard, No. CXS 193-1995. Codex Alimentarius Commission. Rome. Available at: <https://www.fao.org/fao-who-codexalimentarius/codex-texts/en/>

² FAO and WHO. 1969. *General principles of food hygiene*. Codex Code of Practice, No. CXC 1-1969. Codex Alimentarius Commission. Rome. Available at: <https://www.fao.org/fao-who-codexalimentarius/codex-texts/en/>

³ FAO and WHO. 2015. *Code of hygienic practice for low-moisture foods*. Codex Code of Practice, No. CXC 75-2015. Codex Alimentarius Commission. Rome. Available at: <https://www.fao.org/fao-who-codexalimentarius/codex-texts/en/>

⁴ FAO and WHO. 1997. *Principles and guidelines for the establishment and application of microbiological criteria related to foods*. Codex Guideline, No. CXG 21-1997. Codex Alimentarius Commission. Rome. Available at: <https://www.fao.org/fao-who-codexalimentarius/codex-texts/en/>

⁵ FAO and WHO. 1985. *General standard for the labelling of pre-packaged foods*. Codex Standard, No. CXS 1-1985. Codex Alimentarius Commission. Rome. Available at: <https://www.fao.org/fao-who-codexalimentarius/codex-texts/en/>

⁶ FAO and WHO. 2021. *General standard for the labelling of non-retail containers of foods*. Codex Standard, No. CXS 346-2021. Codex Alimentarius Commission. Rome. Available at: <https://www.fao.org/fao-who-codexalimentarius/codex-texts/en/>

⁷ FAO and WHO. 1999. *Recommended methods of analysis and sampling*. Codex Standard, No. CXS 234-1999. Codex Alimentarius Commission. Rome. Available at: <https://www.fao.org/fao-who-codexalimentarius/codex-texts/en/>