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МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ

Fennel seed, whole or ground (powdered) —

Part 1 :

Bitter fennel seed (*Foeniculum vulgare* P. Miller var. *vulgare*) — Specification

Graines de fenouil entier ou en poudre —

*Partie 1 : Graines de fenouil amer (*Foeniculum vulgare* P. Miller var. *vulgare*) — Spécifications*

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 7927-1 was prepared by Technical Committee ISO/TC 34, *Agricultural food products*.

Users should note that all International Standards undergo revision from time to time and that any reference made herein to any other International Standard implies its latest edition, unless otherwise stated.

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Part 1 :

Bitter fennel seed (*Foeniculum vulgare* P. Miller var. *vulgare*) — Specification

1 Scope and field of application

This part of ISO 7927 specifies requirements for bitter fennel seed¹⁾ (*Foeniculum vulgare* P. Miller var. *vulgare*), whole or ground (powdered).

Recommendations relating to storage and transport conditions are given in the annex.

ISO 7927-2 will specify requirements for sweet fennel seed.

2 References

ISO 927, *Spices and condiments — Determination of extraneous matter content*.

ISO 928, *Spices and condiments — Determination of total ash*.

ISO 930, *Spices and condiments — Determination of acid-insoluble ash*.

ISO 939, *Spices and condiments — Determination of moisture content — Entrainment method*.

ISO 948, *Spices and condiments — Sampling*.

ISO 1208, *Spices and condiments — Determination of filth*.

ISO 2825, *Spices and condiments — Preparation of a ground sample for analysis*.

ISO 6571, *Spices, condiments and herbs — Determination of volatile oil content*.

3 Description

Whole fennel is the dried fruit of *Foeniculum vulgare* P. Miller var. *vulgare*, commonly called bitter fennel seed, and occurs as small seeds about 3 to 10 mm in length, 2 to 2,5 mm in breadth, oblong in shape and yellowish to greenish-brown in colour. (See the figure.)

4 Requirements

4.1 Odour and flavour

Fennel seed, whole or ground (powdered), shall have a characteristic odour and a pleasant aromatic aniseed flavour characteristic of the spice. It shall be free from mustiness and other foreign flavours.

4.2 Freedom from insects, moulds, etc.

Fennel seed, whole or ground (powdered), shall be free from living insects and moulds, and shall be practically free from dead insects, insect fragments and rodent contamination visible to the naked eye (corrected, in necessary, for abnormal vision) or with such magnification as may be necessary in any particular case. If the magnification exceeds X10, this fact shall be stated in the test report.

In case of dispute, contamination in ground (powdered) fennel shall be determined by the method specified in ISO 1208.

4.3 Extraneous matter in whole fennel

The proportion of inorganic and organic extraneous matter in whole fennel, when determined by the method described in ISO 927, shall not exceed the values given in table 1, according to the grade.

Inorganic extraneous matter includes dust, stones, earth or any other inorganic foreign matter.

Organic extraneous matter includes straw or chaff, stalks, stems, seeds from other plants and any other organic foreign matter, whether or not originating from other parts of the plant.

4.4 Defective seeds in whole fennel

The proportion of defective seeds in whole fennel shall not exceed the values given in table 1, according to the grade.

Defective seeds include

- seeds which are damaged, split, broken or which have been bored or attacked by weevils or other insects;
- seeds which have not developed properly or which are shrivelled or have been discoloured or blackened.

1) Although, botanically speaking, the product is a "fruit", the term "seed" is in common commercial use.

4.5 Grading of whole fennel

See table 1.

Table 1 — Grading of whole fennel

Grade	Extraneous matter (inorganic + organic) % (m/m) max.	Defective seeds % (m/m) max.
1	1	3,0
2	2	5,0
3	3	9,0

4.6 Chemical requirements¹⁾

4.6.1 Whole fennel

Whole fennel shall comply with the requirements given in table 2.

Table 2 — Chemical requirements for whole fennel

Characteristic	Requirement	Method of test
Moisture content, % (m/m) max.	12,0	ISO 939
Total ash, % (m/m) on dry basis, max.	10,0	ISO 928
Acid-insoluble ash, % (m/m) on dry basis, max.	2,0	ISO 930
Volatile oil content, ml/100 g on dry basis, min.	1,0	ISO 6571

4.6.2 Ground (powdered) fennel

Ground (powdered) fennel shall comply with the requirements given in table 3.

Table 3 — Chemical requirements for ground fennel

Characteristic	Requirement	Method of test
Moisture content, % (m/m) max.	12	ISO 939
Total ash, % (m/m) on dry basis, max.	10,0	ISO 928
Acid-insoluble ash, % (m/m) on dry basis, max.	2,0	ISO 930
Volatile oil content, ml/100 g on dry basis, min.	1,0	ISO 6571

Ground (powdered) fennel shall pass completely through a sieve of nominal size of openings 800 µm.

5 Sampling

Sample the fennel, whole or ground (powdered), by the method specified in ISO 948.

¹⁾ Limits for toxic substances will be included later, in accordance with the recommendations of the Joint FAO/WHO Codex Alimentarius Commission.

6 Methods of test

Samples of fennel, whole or ground (powdered), shall be tested for conformity with the requirements of this International Standard by the methods of test referred to in 4.2 and 4.3, and tables 2 and 3.

The ground sample for analysis shall be prepared in accordance with ISO 2825.

7 Packing and marking

7.1 Packing

Whole or ground (powdered) fennel shall be packed in clean, sound and dry containers made of a material which does not affect the product and which protects it from moisture and from the loss of volatile matter.

7.2 Marking

7.2.1 Whole fennel

The container shall be marked or labelled with the following particulars:

- name of the product and the trade name or brand name, if any;
- name and address of the producer or packer;
- batch or code number;
- net mass;
- grade;
- producing country;
- any other marking required by the purchaser, such as year of harvest and date of packing (if known);
- possibly, a reference to this International Standard.

7.2.2 Ground (powdered) fennel

The container shall be marked or labelled with the following particulars:

- name of the product and the trade name or brand name, if any;
- name and address of the producer or packer;
- batch or code number;
- net mass;
- any other marking required by the purchaser, such as date of packing (if known);
- possibly, a reference to this International Standard.

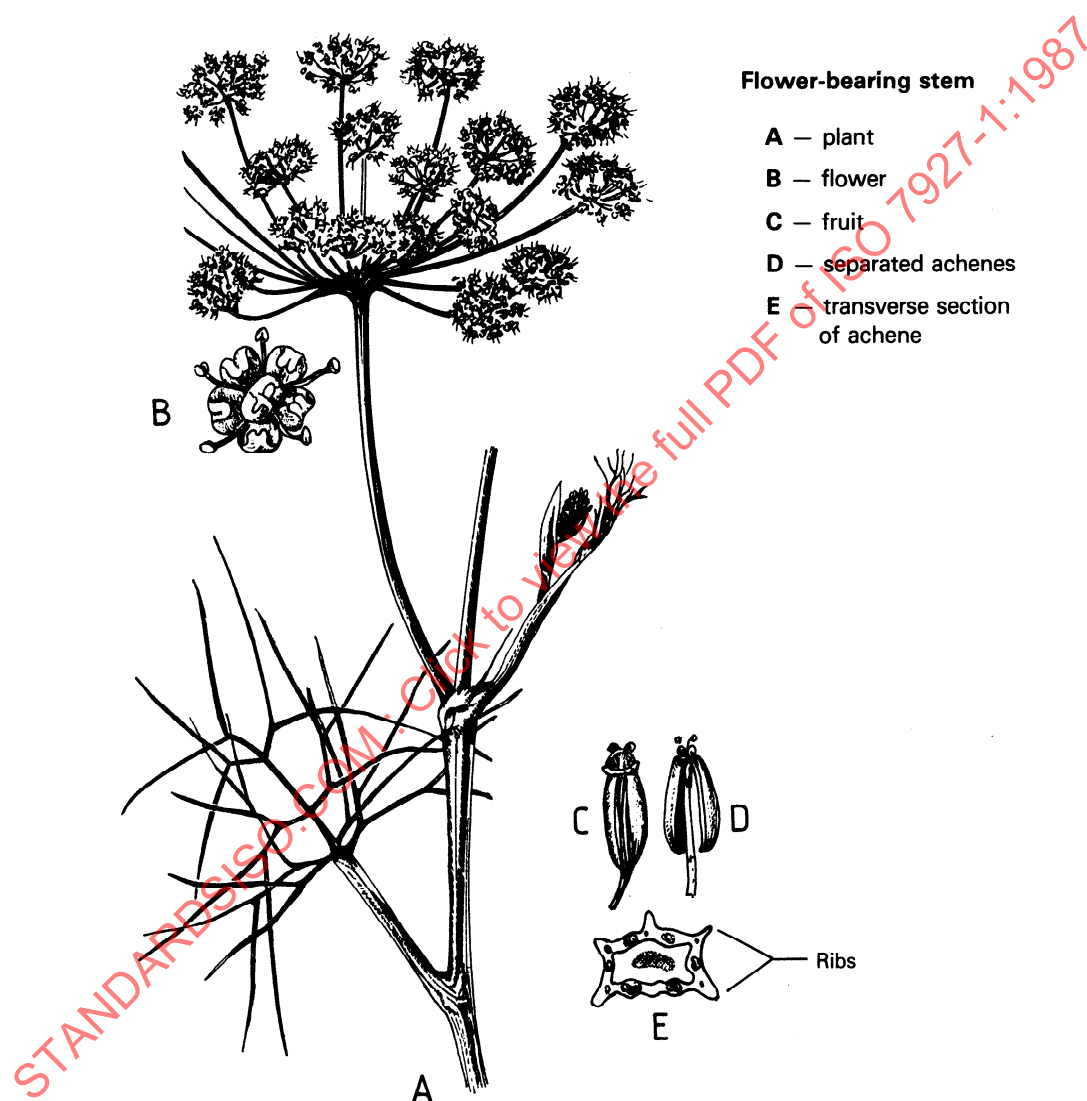


Figure — *Foeniculum vulgare* P. Miller var. *vulgare*

Annex

Recommendations relating to storage and transport conditions

(This annex does not form part of the Standard.)

A.1 Containers of fennel, whole or ground (powdered), should be stored in covered premises, well protected from the sun, rain and excessive heat.

A.2 The store-room should be dry, free from objectionable odours and proofed against the entry of insects and vermin. The ventilation should be controlled so as to give good ventilation under dry conditions and to be fully closed under damp conditions. In a storage warehouse, suitable facilities should be available for fumigation.

A.3 The containers should be so handled and transported that they are protected from the rain, from the sun or other source of excessive heat, from unpleasant odours and from cross-infestation, especially in the holds of ships.

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