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PROPOSAL FOR A NEW UN/ECE STANDARD FOR TRUFFLES

Note by the secretariat: This document is reproduced as submitted by the delegation of France.
It contains a proposal for the establishment of a standard for truffles.

DRAFT UN/ECE STANDARD
concerning the marketing and commercial quality control of
TRUFFLES (*Tuber*)
in international trade between and to UN/ECE member countries

In the light of the characteristics of the produce, this standard comprises generally applicable provisions (parts I, II and III) and specific provisions on producers' wholesale markets (part IV) and on sales to the consumer (part V).

I. DEFINITION OF PRODUCE

This standard covers ascocarps (fruiting bodies) of species of the genus *Tuber* that are intended for consumption.

The species of truffles named below may be marketed:

- *Tuber melanosporum* Vitt., sometimes called *Tuber nigrum* Bull., usually called “black truffle”, “Perigord black truffle”, “Perigord truffle”, “black diamond truffle”, “Norcia black truffle” or “Spoleto black truffle”;
- *Tuber brumale* Vitt., usually called “brumale truffle”, and *Tuber brumale* Vitt. var. *moschatum* Ferry de Bellone, usually called “musky truffle”;
- *Tuber aestivum* Vitt., usually called “Saint Jean truffle”, “summer truffle”, “white summer truffle” or “scorzzone truffle”;
- *Tuber uncinatum* Chatin, usually called “Burgundy truffle” or “Fragno truffle”;
- *Tuber mesentericum* Vitt., usually called “truffe mésentérique” or “Bagnoli truffle”;
- *Tuber magnatum* Pico, usually called “white truffle of Piedmont”, “white truffle of Alba” or “white truffle of Acqualagna”;
- *Tuber Borchii* Vitt., or *Tuber albidum* Pico, usually called “whitish truffle” or “Marzuolo truffle”;
- *Tuber macrosporum* Vitt., usually called “smooth black truffle”.

Their botanical and organoleptic characteristics are described in the annex.

For each species, the following are distinguished:

- Whole truffles, the ascocarp (body) of which is complete and free of all breaks and cuts except for any mark left by the *canifage* operation (where a tiny piece of skin is removed with a knife to check the colour of the flesh);
- Truffle pieces, or truffles that do not fit the above description: the cuts should be clean and recent.

The preparation and packaging of truffle pieces must comply with the rules of hygiene for food products and the packaging materials must be clean. It is recommended that they should be marketed quickly once they have been harvested and trimmed and that users should be advised to wash them properly.

II. MARKETING DATES

It is forbidden to market unripe truffles.

Fresh truffles may not be marketed before the beginning of the period in which they are normally considered to be ripe in the place of production, namely:

- *Tuber melanosporum* Vitt. or *Tuber nigrum* Bull: 15 November to 31 March;
- *Tuber brumale* Vitt. and *Tuber brumale* Vitt. var. *moschatum* Ferry de Bellone: 15 November to 31 March;
- *Tuber aestivum* Vitt: 1 May to 30 September;
- *Tuber uncinatum* Chatin: 15 September to 31 January;
- *Tuber mesentericum* Vitt.: 1 September to 31 December;
- *Tuber magnatum* Pico: 1 October to 31 December;
- *Tuber Borchii* Vitt. or *Tuber albidum* Pico: 15 January to 30 April;
- *Tuber macrosporum* Vitt: 1 September to 31 December.

Fresh truffles may not be marketed more than 10 days after the above-mentioned closing dates.

It is forbidden to peddle truffles before the above starting dates.

The dates of the season may be modified by means of a codicil added to this standard by the competent national authority, if justified by the ripeness of the truffles.

III. MINIMUM REQUIREMENTS

Irrespective of the special provisions for each class and of the tolerances allowed, truffles of all classes must:

Have the characteristic smell, taste and colour of the species;

Be properly ripe, so that the truffles meet commercial requirements at the place of destination;

Be firm to the touch;

Be free of pests, mould and foreign matter;

Be free from rot and frost damage;

Be free from abnormal external moisture;

Weigh 5 grams or over.

IV. PROVISIONS CONCERNING PRODUCERS' WHOLESALE MARKETS

These provisions set forth the specific conditions for sales in producers' wholesale markets.

4.1 Definition

A "producers' wholesale market" means a truffle market situated in a producing region where the truffles are sold in indivisible lots, and held regularly throughout the producing season.

Should retail sales be conducted, they may only take place once the market is over and the wholesale transactions have been completed, or in a quite distinct location. They are to be conducted in accordance with the conditions set out in section 5 of this standard.

4.2 Classification

Truffles are classed in three categories:

- Category A: whole truffles weighing 10 grams or more;
- Category B: whole truffles weighing less than 10 grams;
- Category C: truffle pieces.

4.3 Provisions concerning quality

Truffles marketed on producers' wholesale markets must meet the minimum requirements.

The truffles must be cleaned to remove excess soil, in accordance with good practice in the profession.

The proportion of soil remaining must not exceed

- 10% for species with a verrucose peridium;
- 5% for species with a smooth peridium.

4.4 Provisions relating to species offered for sale

The sale of species other than those harvested in the producing regions where the producers' wholesale market is situated is prohibited in such wholesale markets.

Different species of truffle must be sold separately.

A variation of 2% in weight is permitted in each lot for species harvested side by side in the producing region where the market is situated.

Canifage is recommended.

4.5 Sales requirements

Fresh truffles must be presented on the market in canvas bags, nets or other containers that do not affect their quality.

The use of plastic bags is prohibited.

V. PROVISIONS CONCERNING SALES TO THE CONSUMER

Fresh truffles must be clean, brushed or washed, and free of soil.

5.1 Classification

Truffles are classified in the three classes defined below:

(a) “Extra” class

Truffles in this class must be of superior quality. They must be characteristic of the species. They must be:

- Whole;
- Rounded, fairly regular in form and lobed;
- Undamaged by predators.

They must have no defects, except for:

- Very slight superficial damage;
- Very slight visual defects;
- Very slight defects in shape; and
- Very slight defects in colour,

provided that these defects do not detract from the overall appearance of the product or its quality, keeping quality or presentation.

(b) Class 1

Truffles in this class must be of good quality.

They must be whole.

However, they may have the following slight defects, provided that these do not detract from the overall appearance of the product or its quality, keeping quality or presentation:

- Slight defects in shape, appearance and colour;
- Slight superficial bruising;
- Slight damage by predators.

(c) Class 2

This class covers:

- Whole truffles that do not fit into one of the higher categories, provided that the minimum requirements are met;
- Truffle pieces that meet the minimum requirements.

5.2 Provisions concerning size

Size is determined by the unit weight of the truffles or truffle pieces.

- Truffles in the “Extra” class must have a weight of 20 grams or over;
- Class 1 truffles must have a weight of 10 grams or over.

5.3 Provisions concerning tolerances

Tolerances for species offered for sale

Different species must be marketed separately.

A deviation of 2% by weight in each package is permissible for species harvested side by side. However, no deviation is allowed for other species of truffle, which must be marketed separately.

Canifage is recommended.

Quality tolerances

In each class, it is acceptable for up to 2% by weight of the truffles in each package not to meet the requirements for a given class, provided that they meet those of the class below that one.

Weight tolerances

In each class, it is acceptable for up to 2% by weight of the truffles in each package to weigh less than the minimum stipulated for that class.

The combined tolerances for quality and weight may not exceed 2% of the weight of truffles per package.

5.4 Provisions concerning presentation

Different species of truffles must be marketed separately.

A. Uniformity

The contents of each package must be uniform and contain only truffles of the same species and quality that are roughly in the same state of ripeness, development and colouring.

The visible part of the contents of the package must be representative of the entire contents.

B. Packaging

The truffles must be packed in such a way as to protect the produce properly.

The materials, particularly the paper, used inside the package must be new, clean and of a quality such as to avoid causing any external or internal damage to the produce. The use of materials, particularly of paper or stamps, bearing trade specifications, is permitted, provided that the printing or labelling is done using non-toxic ink or glue.

Packages must be free of all foreign matter.

The truffles must be put in new packaging if they are to be dispatched.

C. Presentation

Truffles may be sold in the form of:

- Whole truffles;
- Truffle pieces.

Truffles presented in these two ways must be marketed separately in accordance with the provisions on size set out in section 5.2 of this standard.

5.5 Provisions concerning marking

Marking information as specified below:

- Must be visible to the user or consumer when the product is displayed, appearing on either the packaging or the prepackaging;
- When the produce is sold loose, the information displayed on a sign visible to the buyer must include the name, origin and class of the product;
- May be placed inside the package for dispatch.

A. Identification

Packer and/or dispatcher.

Name and address or officially issued or accepted code mark.

B. Name of produce

Usual name of the species of truffle as provided for in article II of this standard and botanical name as provided for in article II of this standard.

Type of presentation: “whole” or “pieces”.

C. Origin of produce

Country or countries of origin and, optionally, area where harvested, national, regional or local place name, or collective mark.

D. Commercial specifications

Class, according to the provisions set out in section 5.1.

ARTICLE VI: ANNEX

ANNEX

Botanical and organoleptic characteristics of marketable species of truffles

Characteristics	<i>Tuber melanosporum</i> Vitt., <i>Tuber nigrum</i> Bull.	<i>Tuber brumale</i> Vitt., <i>Tuber brumale</i> Vitt. var. <i>moschatum</i> Ferry de Bellone
Body/ascocarp		
Dimensions	From the size of a walnut to that of a human fist; in some cases, 10 cm or more in diameter	From the size of a walnut to that of a human fist
Shape	Rounded or irregular, lobed	Rounded or irregular, lobed; sometimes with a dimple at the base
Skin/peridium		
Colour	First reddish, then reddish-black, then brownish-black	Blackish (never reddish before maturity)
Appearance	Verrucose	Verrucose
Verrucas	Polygonal (4-6 sides), of average size (3-5 mm), ribbed lengthways, indented at the top, sub-friable	Polygonal (5-6 sides), of average size (1-3 mm wide), generally smaller than those of <i>T. melanosporum</i> , not very salient, indented at the top, furrowed lengthways, not striated crosswise
Peridium	Adheres to gleba	Fragile, comes off easily
Flesh/gleba		
Consistency	Firm	Firm
Colour at maturity	Purplish-brown to crimson-tinged black	Grey-brown to grey-black
Veins	Numerous, fine, filiform, very distinct and with many ramifications, white, turning to red in the air at maturity	Coarse, thick and widely spaced, gangliform, sometimes fine and close together, white, unchanging
Smell at maturity	Intense, pleasant, typical	Pleasant to strong, musky in the <i>moschatum</i> variety
Taste	Very pleasant, typical	Pleasant; unpleasant in the <i>moschatum</i> variety
Spores		
Number per ascus	1-3-4 (6) (average 3-4)	1-6 (average 5)
Shape	Strongly ellipsoid (like a rugby ball)	Oblong-elliptical
Colour	Dark brown; opaque spores	Light yellow, light brown; translucent spores
Dimensions (excluding ornamentation)	(20) 25-55 × (15) 20-35 μ	(15) 20-42 × 15-30 μ
Ornamentation	Echinate: short, stiff spines, very close together, not wider at the base; base of spines joined in parts, forming small valleys (visible through a scanning electron microscope); height of spines: 2.5-3 μ	Echinate: long, stiff and pointed spines, not joined at the base, sometimes flexuous; up to 6 μ in length
Normal period of maturity		
	15 November to 15 March	15 November to 15 March

Botanical and organoleptic characteristics of marketable species of truffles (*continued*)

Characteristics	<i>Tuber aestivum</i> Vitt.	<i>Tuber uncinatum</i> Chatin	<i>Tuber mesentericum</i> Vitt.
Body/ascocarp			
Dimensions	Variable, from the size of a walnut to that of a human fist or bigger; in some cases, over 10 cm in diameter	Variable, from the size of a walnut to that of a human fist or bigger	The size of a walnut or, more rarely, the size of a hen's egg
Shape	Rounded or irregular; sometimes with a dimple at the base	Rounded or irregular; sometimes with a dimple at the base	Rounded or irregular; usually with a fairly pronounced dimple at the base
Skin/peridium			
Colour	Blackish-brown to black	Blackish-brown to black	Very black
Appearance	Verrucose	Verrucose	Verrucose
Verrucas	Often large (3-12 mm wide), pyramid-shaped (5-7 sides), salient, hard, sharp-edged, generally indented at the top, striated crosswise and furrowed lengthways	Small or large, pyramid-shaped (5-7 sides), salient, sharp-edged, furrowed lengthways; crosswise striations hard to see or absent	Small (2-4 mm wide), very close together, sharp or flattened top, five-sided, not striated crosswise
Peridium	Adheres to gleba	Adheres to gleba	Adheres to gleba
Flesh/gleba			
Consistency	Firm, fleshy	Firm, fleshy	Firm, fleshy
Colour at maturity	Pale hazel, light brown	Dark chestnut, dark brown to chocolate brown	Dark brown to chocolate brown
Veins	Very numerous, closely spaced, arborescent, fine, white, unchanging	Very numerous, closely spaced, with many ramifications, arborescent, fine, white, unchanging	White, very distinct, unchanging, labyrinthine
Smell at maturity	Pleasant, reminiscent of barley malt	Pleasant, like hazelnut	Intense, bituminous, disappears during cooking
Taste	Weak, pleasant	Very pleasant, far more pronounced than that of <i>T. aestivum</i>	Fairly pleasant, sometimes a bitter almond taste
Spores			
Number per ascus	1-4 (6)	1-4 (7)	1-3 (5)
Shape	Elliptical	Elliptical	Ellipsoid to almost spherical
Colour	Yellowish to pale brown	Yellowish to pale brown	Yellowish to light brownish
Dimensions (excluding ornamentation)	(18) 25-45 (50) × (15) 18-36 (40) μ	20-55 × 15-40 μ	(20) 25-50 (53) × (15) 20-38 (43) μ
Ornamentation	Reticulate-alveolate: not very well developed network of fairly small and irregular alveoli and open membranous ridges; average height 2 μ	Reticulate-alveolate: highly developed network of fairly large and regular alveoli; average height 4 μ (goes up to 9 μ)	Reticulate-alveolate: fairly well developed network of small and irregular alveoli, often not continuous, covered with secondary ridges; height of network 3-6 μ
Normal period of maturity			
	1 May to 30 November	15 September to 31 January	1 September to 31 January

Botanical and organoleptic characteristics of marketable species of truffles (*continued*)

Characteristics	<i>Tuber magnatum</i> Pico	<i>Tuber borchii</i> Vitt., <i>Tuber albidum</i> Pico	<i>Tuber macrosporum</i> Vitt.
Body/ascocarp			
Dimensions	Very variable, from the size of a walnut to that of a large apple; in some cases, over 10-15 cm in diameter	Variable, but usually small to medium-sized (from the size of a pea to that of a hen's egg); in some cases, up to 10 cm in diameter	From the size of a walnut to that of a hen's egg (rarely bigger)
Shape	Regular or irregular, lobed; almost conical base sometimes visible	Regular or irregular, sub-lobed	Rounded or fairly irregular
Skin/peridium			
Colour	Yellowish, pale ochre, ochreous yellow, ochreous, olive-greenish yellow, greenish tinted, sometimes with rusty brown patches	Very variable: first whitish, then pinkish-white, greyish, yellow-ochre-brown, rusty brown, orangy brown, even dark brown, often dotted with brown red or dark reddish patches	Reddish-brown, rust-coloured, blackish
Appearance	Smooth (fine grain visible under microscope)	Smooth	Slightly verrucose
Verrucas	None	None	Small, irregular, polygonal, mostly quadrilateral, flat and misshapen
Peridium	Adheres to gleba	Adheres to gleba	Adheres to gleba
Flesh/gleba			
Consistency	Firm, but crumbles easily; greasy to the touch	Fleshy	Firm, fleshy
Colour at maturity	Very variable: reddish/sooty, often dotted with reddish patches	Brown-red, purplish-brown, or almost black	Brown-crimson, or blackish
Veins	Numerous, white, fine, sinuous, anastomosed at many points	Few in number, branchlike, anastomosed, sometimes fine and clear-cut, sometimes blurred at the edges, white, ochreous white, reddish, brownish	Numerous, large, white, turning brown in contact with air
Smell at maturity	Strong, typical of Grana cheese, reminiscent of garlic	Almost fragrant, then strong and alliaceous	Alliaceous, strong, similar to the smell of <i>T. magnatum</i>
Taste	Pleasant	Pleasant	Pleasant

Botanical and organoleptic characteristics of marketable species of truffles (*continued*)

Characteristics	<i>Tuber magnatum</i> Pico	<i>Tuber borchii</i> Vitt., <i>Tuber albidum</i> Pico	<i>Tuber macrosporum</i> Vitt.
Spores			
Number per ascus	1-4	1-3 (4)	1-3
Shape	Almost spherical	Ellipsoid or almost spherical	Elliptical
Colour	Pale ochreous yellow to brownish-yellow	Pale ochreous yellow, light brown, russet brown	Dark reddish-brown
Dimensions (excluding ornamentation)	(20) 25-32 (37) × (15) 20-30 (35) μ	(20) 30-48 (55) × (15) 18-35 (42) μ	Particularly large spores: (30) 40-80 (82) × (25) 30-55 (62) μ
Ornamentation	Reticulate-alveolate: network with large mesh, fairly regular, more or less polygonal; height 4-5 μ	Reticulate-alveolate: very regular network, mesh tending to be hexagonal in shape, closer together than in <i>T. magnatum</i> , of very variable dimensions even in the fruit body itself; height of network varies from 2 to 5 μ	Reticulate-alveolate: network with irregular mesh; mesh 6-9 μ wide; network 2.5-5 μ high
Normal period of maturity			
	1 October to 31 December	15 January to 30 April	1 September to 31 December
