

EAST AFRICAN STANDARD

Fresh truffles — Specification and grading



EAST AFRICAN COMMUNITY

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Foreword

Development of the East African Standards has been necessitated by the need for harmonizing requirements governing quality of products and services in East Africa. It is envisaged that through harmonized standardization, trade barriers which are encountered when goods and services are exchanged within the Community will be removed.

In order to meet the above objectives, the EAC Partner States have enacted an East African Standardization, Quality Assurance, Metrology and Test Act, 2006 (EAC SQMT Act, 2006) to make provisions for ensuring standardization, quality assurance, metrology and testing of products produced or originating in a third country and traded in the Community in order to facilitate industrial development and trade as well as helping to protect the health and safety of society and the environment in the Community.

East African Standards are formulated in accordance with the procedures established by the East African Standards Committee. The East African Standards Committee is established under the provisions of Article 4 of the EAC SQMT Act, 2006. The Committee is composed of representatives of the National Standards Bodies in Partner States, together with the representatives from the private sectors and consumer organizations. Draft East African Standards are circulated to stakeholders through the National Standards Bodies in the Partner States. The comments received are discussed and incorporated before finalization of standards, in accordance with the procedures of the Community.

Article 15(1) of the EAC SQMT Act, 2006 provides that "Within six months of the declaration of an East African Standard, the Partner States shall adopt, without deviation from the approved text of the standard, the East African Standard as a national standard and withdraw any existing national standard with similar scope and purpose".

East African Standards are subject to review, to keep pace with technological advances. Users of the East African Standards are therefore expected to ensure that they always have the latest versions of the standards they are implementing.

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Introduction

In the preparation of this East African Standard, the following sources were consulted extensively:

UNECE STANDARD FFV-53:2006, *Marketing and commercial quality control of fresh truffles*

CODEX STAN 193:1995 (Rev.5:2009), *General Standard for Contaminants and Toxins in Foods*

CODEX STAN 228:2001 (Rev.1:2004), *General methods of analysis for contaminants*

Codex Alimentarius website: http://www.codexalimentarius.net/mrls/pestdes/jsp/pest_g-e.jsp

USDA Foreign Agricultural Service website: <http://www.mrlatabase.com>

USDA Agricultural Marketing Service website: <http://www.ams.usda.gov/AMSv1.0/Standards>

USDA Plant Inspectorate Service website: http://www.aphis.usda.gov/import_export/plants

European Union: http://ec.europa.eu/sanco_pesticides/public

Assistance derived from these sources and others inadvertently not mentioned is hereby acknowledged.

This standard has been developed to take into account:

- the needs of the market for the product;
- the need to facilitate fair domestic, regional and international trade and prevent technical barriers to trade by establishing a common trading language for buyers and sellers.
- the structure of the CODEX, UNECE, USA, ISO and other internationally significant standards;
- the needs of the producers in gaining knowledge of market standards, conformity assessment, commercial cultivars and crop production process;
- the need to transport the product in a manner that ensures keeping of quality until it reaches the consumer;
- the need for the plant protection authority to certify, through a simplified form, that the product is fit for crossborder and international trade without carrying plant disease vectors;
- the need to promote good agricultural practices that will enhance wider market access, involvement of small-scale traders and hence making fruit and vegetable production a viable means of wealth creation; and
- the need to keep unsatisfactory produce from the market by allowing the removal of unsatisfactory produce from the markets and to discourage unfair trade practices e.g. trying to sell immature produce at the beginning of the season when high profits can be made. Immature produce leads to dissatisfaction of customers and influences their choices negatively, which disadvantages those traders who have waited until the produce is mature.

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Fresh truffles — Specification and grading

1 Scope

This standard applies to truffles, i.e. ascocarps (fruiting bodies) from species of the genus *Tuber*, to be supplied fresh to the consumer, truffles for industrial processing being excluded. A non-exhaustive list of commercialized truffles is included in Annex A.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

CAC/GL 21, *Principles for the Establishment and Application of Microbiological Criteria for Foods*

CAC/RCP 1, *Recommended International Code of Practice — General Principles of Food Hygiene*

CAC/RCP 44, *Recommended International Code of Practice for the Packaging and Transport of Tropical Fresh Fruit and Vegetables*

CAC/RCP 53, *Code of Hygienic Practice for Fresh Fruits and Vegetables*

EAS 38, *Labelling of prepackaged foods — Specification*

CD/K/378:2010, *Horticultural industry — Code of practice*

3 Description

A **truffle** is a fungal fruiting body that develops underground and relies on mycophagy for spore dispersal. Almost all truffles are ectomycorrhizal and are therefore usually found in close association with trees.

There are many species of truffles, but the fruiting body of some (mostly in the genus *Tuber*) are highly prized as a food. See Annex D for details.

4 Provisions concerning quality

4.1 General

The purpose of the standard is to define the quality requirements of truffles at the market control stage, after preparation and packaging.

4.2 Minimum requirements

In all classes, subject to the special provisions for each class and the tolerances allowed, the truffles must be:

- intact; a slight superficial cut is not regarded as a defect,
- firm,
- sound; produce affected by rotting or deterioration such as to make it unfit for consumption is excluded,
- clean, practically free of any visible foreign matter; the residual soil rate must not exceed 5 % by weight,

- free from pests,
- free from damage caused by pest,
- free from damage caused by frost,
- free of abnormal external moisture,
- free of any foreign smell and/or taste.

Truffles must have been carefully harvested.

The development and condition of truffles must be such as to enable them:

- to withstand transport and handling, and
- to arrive in satisfactory condition at the place of destination.

4.3 Maturity requirements

They must be sufficiently developed, and display satisfactory ripeness.

4.4 Classification

The truffles are classified in three classes defined below:

4.4.1 "Extra" Class

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

They must be free from defects with the exception of very slight superficial defects provided these do not affect the general appearance of the produce, the quality, the keeping quality and presentation in the package.

They must have a rounded shape, more or less regular and lobed.

Very slight defects in appearance, in shape and in color are accepted.

4.4.2 Class I

Truffles in this class must be of good quality.

The following slight defects, however, may be allowed provided these do not affect the general appearance of the produce, the quality, the keeping quality and presentation in the package:

- slight defect in shape,
- slight defect in development,
- slight defect in colouring,
- slight superficial bruising.

4.4.3 Class II

This class includes truffles which do not qualify for inclusion in the other classes but satisfy the minimum requirements specified above.

The following defects may be allowed provided the truffles retain their essential characteristics as regards the quality, the keeping quality and presentation:

- defect in shape,
- defect in development,
- defect in colouring,
- superficial bruising,
- slight superficial damages caused by pests provided they are not developing.

5 Provisions concerning sizing

Size is determined by the weight of truffle. The minimum weight is

- 20 g for Extra Class,
- 10 g for Class I,
- 5 g for Class II.

6 Provisions concerning tolerances

6.1 Quality tolerances

6.1.1 "Extra" Class

2 per cent by weight of truffles not satisfying the requirements of the class, but meeting those of Class I or, exceptionally, coming within the tolerances of that class.

6.1.2 Class I

5 per cent by weight of truffles not satisfying the requirements of the class, but meeting those of Class II, or exceptionally, coming within the tolerances of that class.

6.1.3 Class II

10 per cent by weight of truffles satisfying neither the requirements of the class nor the minimum requirements, with the exception of produce affected by rotting or any other deterioration rendering it unfit for consumption.

6.2 Size tolerances

For all classes: 10 per cent by weight of truffles not satisfying the requirements as regards sizing.

7 Provisions concerning presentation

7.1 Uniformity

The contents of each package must be uniform and contain only truffles of the same origin, quality, maturity, development, coloration, species and commercial type.

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

7.2 Packaging

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

The materials 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 allowed provided the printing or labeling has been done with non-toxic ink or glue.

Stickers individually affixed on the produce shall be such that, when removed, they neither leave visible traces of glue, nor lead to skin defects.

Packages must be free of all foreign matter.

7.3 Presentation

The fresh truffles have to be presented in canvas or string bags or other containers which do not affect their quality.

8 Marking and labelling

8.1 Consumer packages

In addition to the requirements of EAS 38, the following specific provisions apply:

8.1.1 Nature of produce

If the produce is not visible from the outside, each package shall be labelled as to the name of the produce and may be labelled as to name of the variety and/or commercial type.

8.2 Non-retail containers

Each package¹ must bear the following particulars, in letters grouped on the same side, legibly and indelibly marked, and visible from the outside:

8.2.1 Identification

The exporter, packer and/or dispatcher shall be identified by name and physical address (e.g. street/city/region/postal code and, if different from the country of origin, the country) or a code mark officially recognized by the national authority.²

8.2.2 Nature of produce

- Truffles
- Commercial type or equivalent denomination
- Species (Latin name)

8.2.3 Origin of produce

Country of origin and, optionally, district where grown, or national, regional or local place name.

8.2.4 Commercial specifications

- Class

¹ Package units of produce prepacked for direct sale to the consumer shall not be subject to these marking provisions but shall conform to the national requirements. However, the markings referred to shall in any event be shown on the transport packaging containing such package units.

² The national legislation of a number of countries requires the explicit declaration of the name and address. However, in the case where a code mark is used, the reference "packer and/or dispatcher (or equivalent abbreviations)" has to be indicated in close connection with the code mark, and the code mark should be preceded by the ISO 3166 (alpha) country/area code of the recognizing country, if not the country of origin.

— Net weight

8.2.5 Official control mark (optional)

9 Contaminants

9.1 Pesticide residues

Truffles shall comply with those maximum pesticide residue limits established by the Codex Alimentarius Commission for this commodity. Annex E provides current MRLs for the USA, EU and Codex markets.

9.2 Other contaminants

Truffles shall comply with those maximum levels for contaminants established by the Codex Alimentarius Commission for this commodity.

10 Hygiene

10.1 It is recommended that the produce covered by the provisions of this Standard be prepared and handled in accordance with the appropriate sections of CAC/RCP 1, CAC/RCP 53, and other relevant Codex texts such as Codes of Hygienic Practice and Codes of Practice.

10.2 The produce should comply with any microbiological criteria established in accordance with CAC/GL 21.



Tuber melanosporum Vittadini



Tuber indicum



Tuber borchii



Tuber magnatum Pico



Tuber gibbosum Gilkey

Draft for con



Tuber mesentericum



Tuber uncinatum



Tuber brumale



Tuber macrosporum Vittadini



Tuber aestivum

Draft for comment

Annex A
Non-exhaustive list of commercialized truffles

Species	Commercial type
<i>Tuber melanosporum</i> Vittadini	Black truffle
<i>Tuber brumale</i> Vittadini	Brumal truffle
<i>Tuber brumale</i> Vittadini var. <i>moschatum</i> Ferry de Bellone	Musky truffle
<i>Tuber indicum</i> Cooke et Masee	China or Asia truffle
<i>Tuber aestivum</i> Vittadini	White summer truffle
<i>Tuber uncinatum</i> Chatin	Burgundy truffle
<i>Tuber mesentericum</i> Vittadini	'Mésentérique' truffle
<i>Tuber magnatum</i> Pico	White truffle of Piedmont
<i>Tuber borchii</i> Vittadini	Blanquette truffle
<i>Tuber macrosporum</i> Vittadini	Smooth truffle
<i>Tuber gibbosum</i> Gilkey	Truffle of the Oregon

Draft for comments only — Not to be cited as EAC African Standard

Annex B (informative)

Guide to cold storage and refrigerated transport

B.1 Scope and field of application

This annex describes methods for obtaining conditions for the successful cold storage and long distance refrigerated transport of cultivated mushrooms intended either for direct consumption or for industrial processing.

B.2 Conditions for harvesting and packing

B.2.1 Harvesting

Cultivated mushrooms should be harvested at a stage of development corresponding to the quality requirements (see B.2.2), because the veil under the cap soon opens, thus reducing the quality. Mushrooms should be harvested daily during the main period of cultivation and if grown in rooms with high temperatures (16 to 20 °C). Towards the end of the cultivation period and in rooms with lower temperatures (10 to 20 °C), they can be harvested every second day.

Cultivated mushrooms easily discolour, even at low temperature, as a result of pressing or rubbing. They should, therefore, be carefully handled between harvesting and consumption. The fruit body should be removed from the bed by twisting so that the stem is not broken and the least amount of covering soil and mycelium is removed. Residues of broken stones should be rubbed off the stem. If soil is used as the covering material, the end of the stem should be cut off with a sharp knife at right angles to the length of the stem. To maintain the quality of cultivated mushrooms, it is recommended that they be placed, after harvest, in a package where they can remain until consumption or processing.

The mushrooms may be washed, if necessary, but they should be dried within a few minutes with spongy absorbents, as persistent surface moisture causes brown discoloration or mucosity. Forced ventilation is not suitable for drying mushrooms because it favours wilting.

B.2.2 Quality requirements

The mushrooms should be carefully handled, and should be fresh, of good quality, and of uniform white, cream or light buff colour, according to the variety. The cap should be spherical or hemispherical. The veil under the cap should be closed or open, according to market requirements. The stem should be plump, and the end may be cut or whole. The body should be elastic, free from abnormal surface moisture and should be free from mechanical damage, spoilage and holes caused by insect attack.

B.2.3 Grading and packing

The mushrooms should be graded according to the quality standards of the country concerned or, in the case of international trade in accordance with accepted international standards. The best results are obtained by using packages that have rigid sides. The mushrooms should be tightly packed without being compressed. A loose pack leads to abrasion from movement, and excessively tight packing results in pressure bruises. Both types of damage lead to discoloration and loss of quality.

Mushrooms may be packed in wooden boxes or fibreboard containers lined with silk-paper, and on trays of fibreboard or plastics placed in wooden boxes. The packages should be covered with perforated film or plastic stretch film in order to avoid loss of moisture. Packages and other materials used for this purpose should be new, clean and made of a material which will not affect the product, either internally or externally.

B.3 Optimum conditions for storage and transport

B.3.1 General

Cultivated mushrooms are the most sensitive to storage of all horticultural products. They should be consumed as soon after harvesting as possible and only stored in special cases. If storing or transporting cultivated mushrooms, however, precooling of the product, immediately after harvesting and before packaging, to a temperature which should not drop below 2 °C, is recommended.

B.3.2 Temperature

The temperature depends on the duration of storage and transport. Mushrooms can be stored for 4 to 5 days at +2 °C and for 2 to 3 days at +5 °C.

B.3.3 Relative humidity

The relative humidity is 90 %. A higher relative humidity may result in condensation, causing discoloration and mucosity. At a lower relative humidity, the mushrooms wilt, losing their elastic character.

The relative humidity can be obtained by covering the containers of mushrooms intended for storage or transportation with perforated film or plastic stretch film of suitable porosity for the given conditions, thus delaying wilting, and avoiding the formation of condensation.

B.4 Storage

The package should be placed on pallets and put into the cold store. Piles should be formed according to the nature of the packages. Air circulation at too high a rate is unfavourable to quality, as it increases the loss of humidity. When transported over long distances, mushrooms should be kept in cold stores only until they have cooled to the required temperature; they should then be placed in the refrigerated transport vehicle.

B.5 Requirements for transport vehicles and loading

During the transport of mushrooms, refrigeration should be continuous. For this purpose, ice- or mechanically refrigerated railway trucks or refrigerated lorries may be used. Equipment should be in good technical condition, for example fans should be in working condition, drains should be free in ice-refrigerated railway trucks, and floor racks assuring the circulation of air should be in position. Before loading, the temperature of the loading space in the vehicles should be adjusted to that required, either by icing the bunkers or by mechanical refrigeration.

Wooden or fibreboard boxes containing mushrooms should be stacked lengthwise (facing forward), and only boxes necessary for filling spaces between the stacks, to prevent them from moving during transport, should be placed crosswise. Similarly, remaining gaps should be filled with empty boxes or crates for the same purpose.

The ice bunker of ice-refrigerated railway trucks should be re-iced to capacity after loading.


If, as a consequence of warm weather or a long transit period, the ice could melt in ice-refrigerated railway trucks during transport, re-icing should be carried out at an interim station to ensure that, at the destination, the trucks arrive with their bunkers not less than one-third full.

B.6 Operations on arrival

After unloading, either continuous refrigeration should be maintained or the mushrooms should be consumed or processed as soon as possible.

Annex C
(informative)

Model certificate of conformity with standards for fresh fruits and vegetables

1. Trader:	Certificate of conformity with the Community marketing standards applicable to fresh fruits and vegetables No. (This certificate is exclusively for the use of inspection bodies)			
2. Packer identified on packaging (if other than trader)	3. Inspection body			
	4. Place of inspection/country of origin ⁽¹⁾	5. Region or country of destination		
6. Identifier of means of transport	7. <input type="checkbox"/> Internal <input type="checkbox"/> Import <input type="checkbox"/> Export			
8. Packages (number and type)	9. Type of product (variety if the standards specifies)	10. Quality Class	11. Total net weight in kg	
12. The consignment referred to above conforms, at the time of issue, with the Community standards in force, vide: <u>CD/K/068:2010, Fresh truffles — Specification and grading</u> _____ Customs office foreseen Place and date of issue Valid until (date): Signatory (name in block letters): <div style="display: flex; justify-content: space-around;"> Signature Seal of competent authority </div>				
13. Observations:				
<small>(1) Where the goods are being re-exported, indicate the origin in box 9.</small>				

Annex D (informative)

Truffle (fungi) — Fact sheet

Standard



Scientific classification

Kingdom:	Fungi
Division:	Ascomycota
Subphylum:	Pezizomycetidae
Class:	Pezizomycetes
Order:	Pezizales
Family:	Tuberaceae
Genus:	<i>Tuber</i>

Species

Tuber aestivum
Tuber bituminatum
Tuber bonnetii
Tuber borchii
Tuber brumale
Tuber gibbosum
Tuber macrosporum
Tuber maculatum
Tuber magnatum
Tuber melanosporum
Tuber mesentericum
Tuber nitidum
Tuber puberulum
Tuber rapaeodorum
Tuber rufum
Tuber scleroneuron
Tuber separans
Tuber sinense

A **truffle** is a fungal fruiting body that develops underground and relies on mycophagy for spore dispersal. Almost all truffles are ectomycorrhizal and are therefore usually found in close association with trees.

There are hundreds of species of truffles, but the fruiting body of some (mostly in the genus ***Tuber***) are highly prized as a food. Famed 18th century French gastronome Brillat-Savarin called these

truffles "the diamond of the kitchen". Edible truffles are held in high esteem in French, Spanish, northern Italian and Croatian cooking, as well as in international *haute cuisine*.

Etymology

The origin of the word *truffle* appears to be the Latin term *tuber*, meaning "lump", which became *tuber* and gave rise to the various European terms: French *truffe*, Spanish *trufa*, German *Trüffel*, and Dutch *truffel*. In Portuguese, the words *trufa* and *túbera* are synonyms, the latter closer to the Latin term. The German word *Kartoffel* ("potato") is derived from the Italian *tartufo* (truffle) because of superficial similarities.

Biology

The mycelia of truffles form symbiotic relationships with the roots of several tree species including beech, poplar, oak, birch, hornbeam, hazel, and pine. They prefer argillaceous or calcareous soils which are well drained and neutral or alkaline. Truffles fruit throughout the year, depending on the species and can be found buried between the leaf litter and the soil.

Types

White truffle



White truffle washed and cut

The White truffle or Alba Truffle (*Tuber magnatum*) comes from the Langhe area of the Piedmont region in northern Italy and, most famously, in the countryside around the city of Alba. It is also found in Croatia, on the Istria peninsula in the Motovun forest alongside Mirna river. Growing symbiotically with oak, hazel, poplar and beech and fruiting in autumn, they can reach 12 cm diameter and 500 g, though are usually much smaller. The flesh is pale cream or brown with white marbling. Like the French black truffles, Italian white truffles are very highly esteemed. The white truffle market in Alba is busiest in the months of October and November. The *Tuber magnatum* truffles sell between \$2,200 and \$1,000 US per pound (€3800 to €1700 per kg) Truffle hogs have been used historically in Europe to help find truffles. However, more recently, dogs have become preferred for truffle hunting since they can be trained not to eat truffles when they find them.

The *Tuber magnatum pico* White truffle is mostly found in northern and central Italy, while the *Tuber borchii*, or Whitish truffle, is found in Tuscany, Romagna, the Marche and Molise. Neither of these is as aromatic as those from Piedmont.

Black truffle



Black Périgord Truffle

The Black truffle or Black Périgord Truffle (*Tuber melanosporum*) is named after the Périgord region in France and grows exclusively with oak. Specimens can be found in late autumn and winter, reaching 7 cm in diameter and weighing up to 100 g. Production is almost exclusively European, with France accounting for 45%, Spain 35%, Italy 20%, and small amounts from Slovenia and Croatia.

Chinese truffles

The Chinese truffle (*Tuber sinensis*, also sometimes called *Tuber indicum*) is a winter black truffle harvested in China. Due to their bountiful growth, Chinese truffles are often exported to the West as an inferior-quality substitute of *Tuber melanosporum*. Some truffle exporters or delicatessen shops sell Chinese truffles into which extracts of the real *Tuber melanosporum* are introduced. These truffles are often sold at a high price, marked as *Tuber melanosporum*. Another type of Chinese truffle is the *Tuber himalayensis*, which visually looks so much like the *Tuber melanosporum* that a microscope is needed to differentiate them. The *Tuber himalayensis* is harvested in very small quantities in the Chinese Himalayas due to the high altitude, and is not as frequently met on world markets as the *Tuber sinensis*. The third type of Chinese truffle is the Chinese summer white truffle, which does not yet have a scientific name.

Traditionally in Yunnan truffles were used as pig feed and not eaten by humans.

Summer truffle



Black Summer Truffle (in Italian: Tartufi Neri Estivi)

The **Black Summer Truffle** (*Tuber aestivum/unicinatum*) thrives in northern Italy, central Europe and the UK but also grows in Turkey and North Africa. It is highly valued for its culinary uses and costs up to \$1,500 per kilogram (\$670 per pound). Summer truffles do not have as strong an aroma or taste as winter truffles do. They are mainly harvested from June to November. These truffles grow in symbiosis with trees such as oaks, hazels and beech. They can weigh up to 20-30 g, and their shape is generally round, up to 4 cm diameter.

Other species

Two lesser-used truffles include the Black truffle (*Tuber macrosporum*) and the Scorzone truffle (*Tuber mesentericum*). In the U.S. Pacific Northwest, several species of truffle are harvested both recreationally and commercially, most notably, the Oregon white truffles, *Tuber oregonense* and *Tuber gibbosum*.

Truffle-like species

The term "truffle" has been applied to several other genera of similar underground fungi. The genera *Terfezia* and *Tirmania* of the family Terfeziaceae are known as the "desert truffles" of Africa and the Middle East. "Hart's truffle" is a name for *Elaphomyces* while *Pisolithus tinctorius*, which was historically eaten in parts of Germany is sometimes called "Bohemian truffle".

History

Antiquity

The first mentions of truffles appears in the inscriptions of the neo-Sumerians regarding their Amorite enemy's eating habits (Third Dynasty of Ur, 20th century, ref. E. Chiera, Sumerian Epics and Myths,

Chicago, 1934, Nos.58 and 112) and later in writings of Theophrastus in the fourth century BC. In classical times their origins were a mystery which challenged many; Plutarch and others thought them the result of lightning, warmth and water in the soil, while Juvenal thought thunder and rain to be instrumental in their origin. Cicero deemed them children of the earth, while Dioscorides thought they were tuberous roots.

Italy in the Classical Period produced two kinds of truffles: the *Tuber melanosporum* and the *Tuber magnatum*. The Romans, however, only used the terfez (*Terfezia boudieri*), a fungus of similar appearance which the Romans called truffles, and which is sometimes called "desert truffle". Terfez used in Rome came from Lesbos, Carthage, and especially Libya, where the coastal climate was less dry in ancient times. Their substance is pale, tinged with rose. Unlike truffles, terfez have no taste of their own. The Romans used the terfez as a carrier of flavour, because the terfez have the property to absorb surrounding flavours. Indeed, Roman cuisine used many spices and flavours, and terfez were perfect in that context.

Islam

It is narrated in the hadith Sahih Muslim that the Muslim prophet Muhammad said "Truffles are 'Manna' which Allah, sent to the people of Israel through [Moses], and its juice is a medicine for the eyes." *Terfezia* was the main truffle consumed in the Middle East historically, and Ludovico di Varthema, in his *Travels* (1503-08), wrote of great quantities of them being sold, having been harvested in the mountains of Armenia and Turkey.

Middle Ages

Truffles were rarely used during the Middle Ages. The only trace of truffles in medieval cooking is at the court of the Avignon Papacy. The popes discovered them when they relocated to Avignon, near the producing regions of upper Provence, and they became very fond of them. Truffle hunting is mentioned by Bartolomeo Platina, the papal historian, in 1481, when he recorded that the sows of Notza were without equal in hunting truffles, however they should be muzzled to prevent them from eating the prize.

Renaissance and modern times

During the Renaissance truffles regained popularity in Europe and were honoured at the court of King Francis I of France. However, it was not until the 17th century that Western (and in particular French) cuisine abandoned "heavy" oriental spices, and rediscovered the natural flavour of foodstuffs. Truffles were very popular in Parisian markets in the 1780s. They were imported seasonally from truffle grounds, where peasants had long enjoyed their secret. Brillat-Savarin (1825) noted characteristically that they were so expensive they appeared only at the dinner tables of great nobles and kept women. A great delicacy was a truffled turkey.

Cultivation

Truffles long eluded techniques of domestication, as Jean-Anthelme Brillat-Savarin (1825) noted with his characteristic skepticism:

"The most learned men have sought to ascertain the secret, and fancied they discovered the seed. Their promises, however, were vain, and no planting was ever followed by a harvest. This perhaps is all right, for as one of the great values of truffles is their dearness, perhaps they would be less highly esteemed if they were cheaper.

However, contrary to stubborn legends, truffles can be cultivated. As early as 1808, there were successful attempts to cultivate truffles, known in French as *trufficulture*. People had long observed that truffles were growing among the roots of certain trees, and in 1808, Joseph Talon, from Apt (*département* of Vaucluse) in southern France, had the idea to sow some acorns collected at the foot of oak trees known to host truffles in their root system.

The experiment was successful: years later, truffles were found in the soil around the newly grown oak trees. In 1847, Auguste Rousseau of Carpentras (in Vaucluse) planted 7 hectares (17 acres) of oak trees (again from acorns found on the soil around truffle-producing oak trees), and he

