

History of the strawberry



- The history of this fruit goes back as far as the Romans and perhaps even the Greeks,
- The reference of strawberry appears in the thirteenth century in the writings of a Greek doctor, Nicholas Myrepsus,
- The literature of botany was often the literature of medicine, where plants were described for their use in treating ailments,
- By the 1300's, the strawberry was in cultivation in Europe,
- At first the plant was considered more ornamental for its flowers than useful for its fruit,
- Strawberries were served at medieval state events, they symbolized prosperity, peace, and perfection,
- Nowadays strawberries and cream is a popular dessert, famously consumed at Wimbledon.

Health Benefits



- The berries are non-fat and low in calories,
- They are rich in:
 - potassium,
 - folic acid,
 - fiber,
 - and vitamin B6.
- Over history the strawberries have been used in medicines for sunburn, discolored teeth, digestion, and gout.
- Strawberries contain fisetin, an antioxidant that has been studied in relation to Alzheimer's disease and to kidney failure resulting from diabetes.

Allergy



- **Some people experience an anaphylactoid reaction to the consumption of strawberries.**
- **The most common form of this reaction is oral allergy syndrome, but symptoms may also mimic hay fever or include dermatitis or hives.**
- **May cause breathing problems.**
- **Some research suggests that the allergen may be tied to a protein involved in the ripening of fruits, which was named Fra a1 (Fragaria allergen1).**
- **White-fruited strawberry cultivars, lacking Fra a1, may be an option for strawberry allergy sufferers. Since they lack a protein necessary for normal ripening, they do not produce the flavonoids that turn the mature berries of other cultivars red.**

Production trends



World strawberry production in tonnes				
Country	2005	2006	2007	2008
Total World	3,782,906	3,917,140	3,824,678	4,068,454
USA	1,053,242	1,090,436	1,133,703	1,148,530
Spain	320,853	333,485	263,900	
Russia	221,000	227,000	230,400	145,000
Korea, South	201,995	205,307	203,227	
Turkey	200,000	211,127	250,316	261,078
Japan	196,200	190,700	193,000	
Poland	184,627	193,666	174,578	200,723
Germany	146,500	173,230	158,658	150,854

Source: FAO stat

Definition of produce



This standard applies to strawberries of varieties grown from the genus *Fragaria* L. to be supplied fresh to the consumer.

Provision is compulsory at every stage!

Definition of produce



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Definition of produce

Industrial processing being excluded.



Provisions concerning quality



Purpose of the Standard:

is to define the quality requirements for strawberries, after preparation and packaging.



Provisions concerning quality

Minimum requirements

intact

**Not intact,
Not allowed**

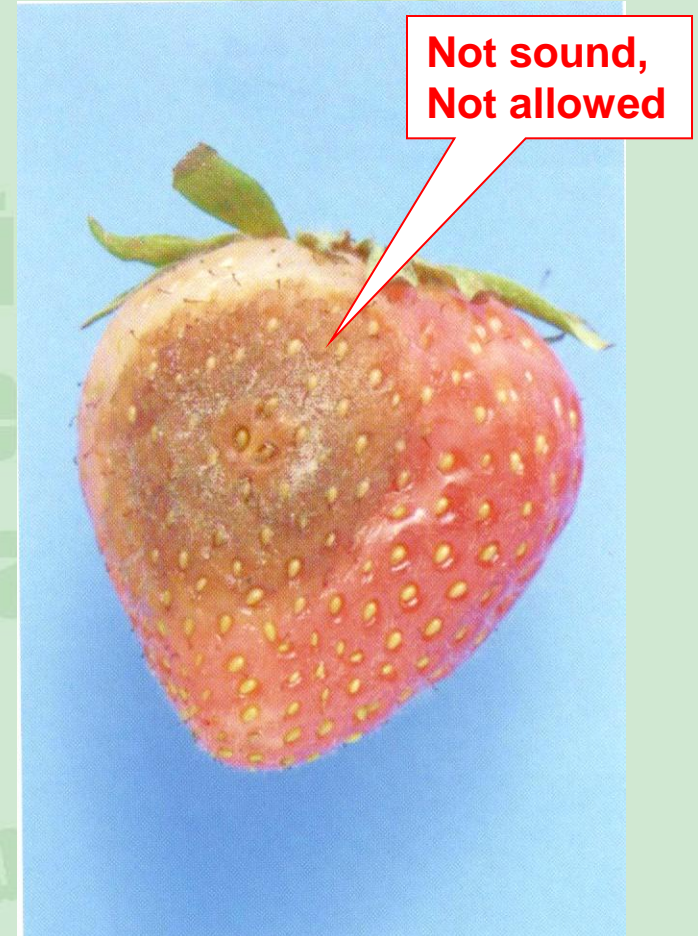




Provisions concerning quality

Minimum requirements

sound



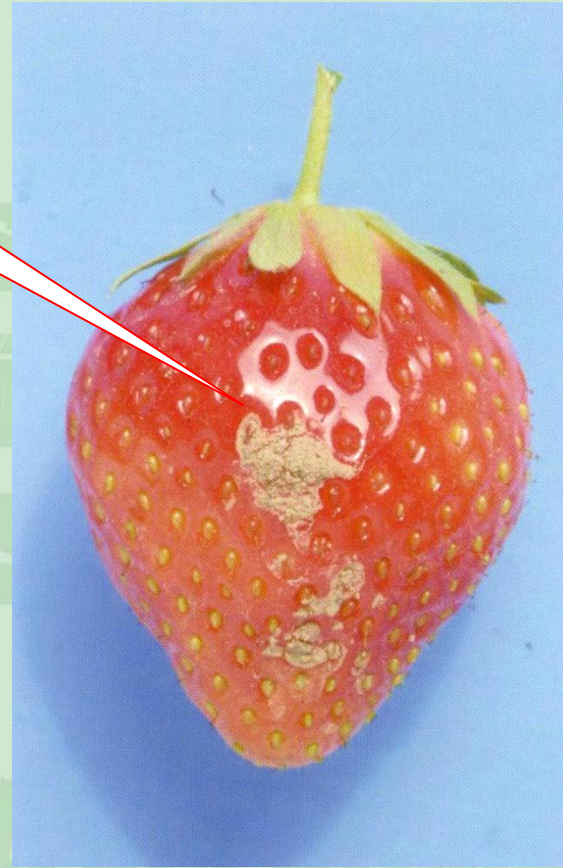


Provisions concerning quality

Minimum requirements

clean

**Soiled,
Not allowed**





Provisions concerning quality

Minimum requirements

fresh in appearance

**Overripe and not fresh,
Not allowed**

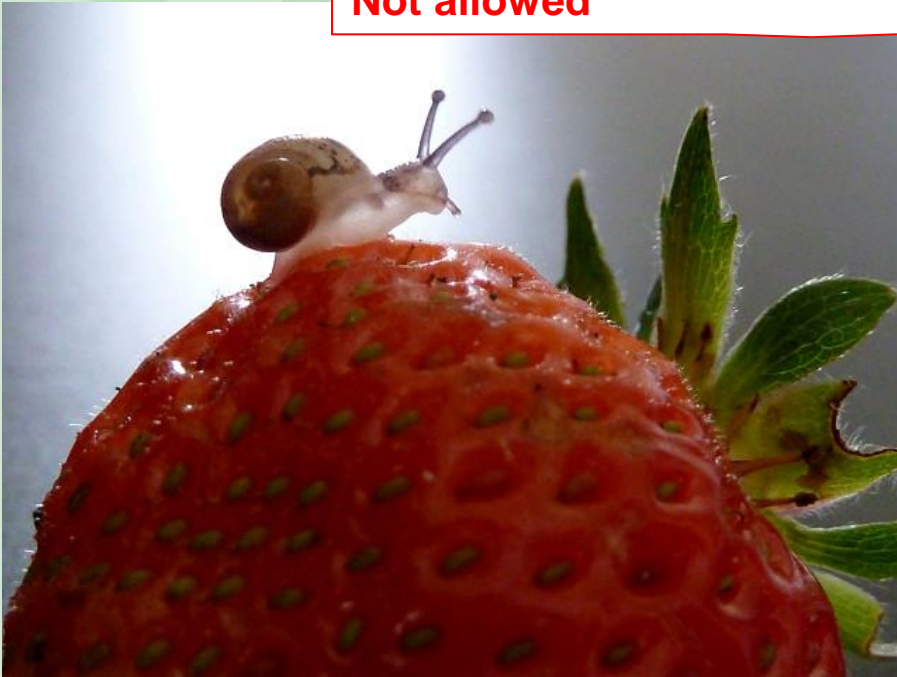




Provisions concerning quality

Minimum requirements
practically free from pests, and
damage caused by pests

**Snail and damage caused by it,
Not allowed**





Provisions concerning quality

Minimum requirements

with calyx, the calyx and the stalk
must be fresh and green

**Calyx is missing or damaged,
Not allowed**



**Stalk is missing,
Allowed**





Provisions concerning quality

**Minimum requirements
with calyx, the calyx and the stalk
must be fresh and green**



**Withered calyx and stalk,
Not allowed**



Provisions concerning quality

Minimum requirements with calyx, except wild strawberries



Wild strawberries without calyx,
Allowed



Provisions concerning quality

Minimum requirements

It must be sufficiently developed
and display satisfactory ripeness





Provisions concerning quality

Minimum requirements

It must be sufficiently developed
and display satisfactory ripeness



**Not developed,
Not allowed**



Provisions concerning quality Classification

The strawberries are classified in the three classes:

Extra class

Class I

Class II

Provisions concerning quality Extra



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Provisions concerning quality



Extra

Strawberries in this class must be superior quality.

- They must be characteristic of the variety.
- They must be bright in appearance, allowing for the characteristic of the variety.
- They must be free from soil.

Provisions concerning quality



Class I.

Slight defect of shape

Shape characteristic to the variety



Slight defect of shape
Limit allowed



Provisions concerning quality



Class I.

White patch max. 1/10 of surface



Provisions concerning quality



Class I.

Slight superficial pressure marks



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Provisions concerning quality

Class II.

Defect of shape



Defect of shape
Limit allowed

Defect of shape,
Not allowed



Provisions concerning quality



Class II.

White patch max. 1/5 of surface





Provisions concerning quality

Class II.

Slight dry bruising

Dry bruising
Limit allowed



Bruising,
Not allowed



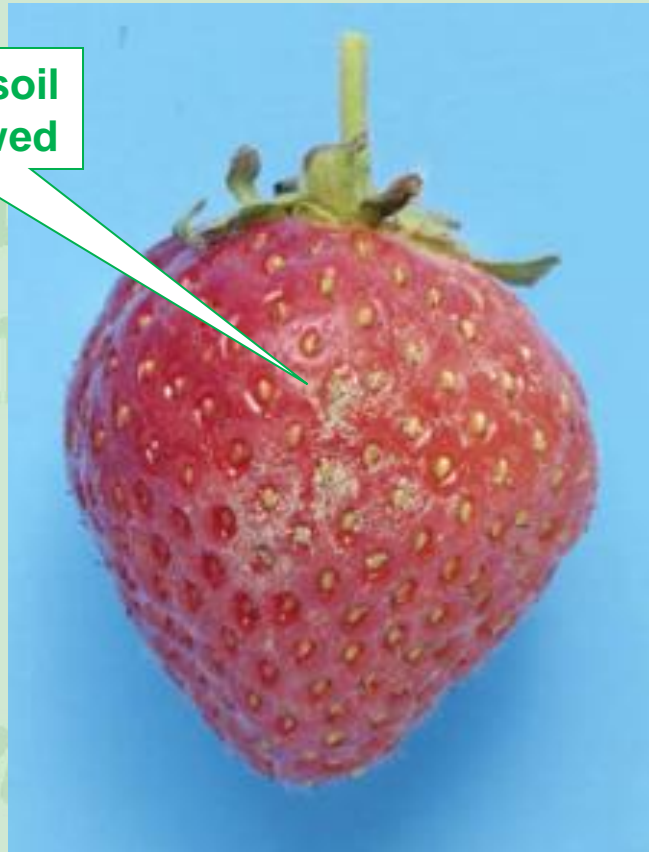


Provisions concerning quality

Class II.

Slight traces of soil

Traces of soil
Limit allowed



Provisions concerning sizing



Size is determined by the maximum diameter of the equatorial section:

The minimum size shall be:

- **25 mm** in 'Extra' Class
- **18 mm** in Classes I and II.

There is no minimum size for wild strawberry.

Provisions concerning tolerances



Tolerances are the upper limit.

At the time of preparation must avoid to reach these limits.

At all marketing stages, tolerances in respect of quality and size shall be allowed in each lot for produce not satisfying the requirements of the class indicated.

Provisions concerning quality tolerances



Extra class: max. **5%** meets Class I. and within this max. 0,5% meets Class II.

Class I.: max. **10%** meets Class II. and max. 2% in total may satisfying neither the requirements of Class II quality nor the minimum requirements, or of produce affected by decay.

Class II: max **10%** satisfying neither the requirements of the class nor the minimum requirements, and 2% of produce affected by decay.

Provisions concerning size tolerances



For all classes:

A total tolerance of **10%** not satisfying the requirements as regards the minimum size is allowed.

Provisions concerning presentation - uniformity



The contents of each package must be uniform in:

- origin
- variety
- quality

Provisions concerning presentation - uniformity



Extra: uniformity in size, colour, ripeness.



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Provisions concerning presentation - uniformity



Class I: may be less uniform in size.



Provisions concerning presentation - uniformity



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

**Camouflage of ripeness,
Not allowed**



Provisions concerning presentation - packaging



Packages must be free of all foreign matter

**Foreign matter,
Not allowed**



Provisions concerning presentation - packaging



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Provisions concerning presentation - packaging



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Provisions concerning marking



Name and address of the packer

Nature of produce

Weight

Quality class

Origin