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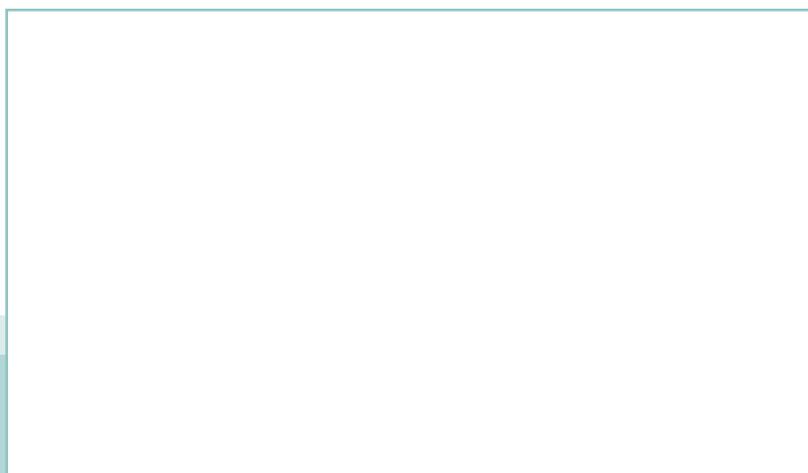
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Cereals – Vocabulary (ISO 5527:2015)



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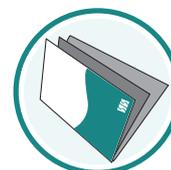
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EUROPEAN STANDARD

EN ISO 5527

NORME EUROPÉENNE

EUROPÄISCHE NORM

February 2015

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English Version

Cereals - Vocabulary (ISO 5527:2015)

Céréales - Vocabulaire (ISO 5527:2015)

Getreide - Vokabular (ISO 5527:2015)

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Foreword

This document (EN ISO 5527:2015) has been prepared by Technical Committee ISO/TC 34 "Food products" in collaboration with Technical Committee CEN/TC 338 "Cereal and cereal products" the secretariat of which is held by AFNOR.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by August 2015, and conflicting national standards shall be withdrawn at the latest by August 2015.

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The text of ISO 5527:2015 has been approved by CEN as EN ISO 5527:2015 without any modification.

Introduction

In this edition of ISO 5527, the terms and definitions have been stored in the Online Browsing Platform (OBP) (<http://www.iso.org/obp>), where they can be browsed free of charge by members of the public (but not downloaded) in the following languages: English, French, German and Spanish.

The PDF version of ISO 5527 also contains the terms and definitions in Chinese.

Cereals — Vocabulary

1 Scope

This International Standard defines terms relating to cereals.

NOTE 1 In addition to terms used in English and French, two of the three official ISO languages, this document gives the equivalent terms in Spanish, German and Chinese; these are published under the responsibility of the member bodies for Argentina (IRAM), Germany (DIN) and China (SAC) and are given for information only. Only the terms and definitions given in the official languages can be considered as ISO terms and definitions.

The terms are given under the following subheadings:

- [2.1](#) General terms
- [2.2](#) Terms relating to physiology
- [2.3](#) Terms relating to morphology
- [2.4](#) Terms relating to technology of cereals
- [2.5](#) Terms relating to cereal products
- [2.6](#) Terms relating to test and sampling methods

NOTE 2 See ISO 5526^[6] for a list of principal cereal species with their botanic names and common names.

2 Terms and definitions

2.1 General terms

2.1.1

blight

fungus disease of cereals

2.1.2

bread-making cereals

cereals that are suitable for making bread and other products

EXAMPLE Wheat, rye, triticale.

2.1.3

bulk store

large store in which grain is stored unpackaged in large quantities

2.1.4

bunted grain

grains filled with a fetid smelling dust comprising the spores of bunts

2.1.5

cereals

grains of plants, usually cultivated, belonging to the *Poaceae* family

Note 1 to entry: A list of these plants is given in ISO 5526.^[6]

2.1.6**consignment**

physical quantity of grain on offer, dispatched or received at one time, and covered by a particular contract or shipping document

Note 1 to entry: A consignment may be composed of one or more lots.

2.1.7**cultivar****variety**

unique and uniform member of a species of plant (except for hybrid species) that retains its characteristics from generation to generation through its natural mode of reproduction

2.1.8**damaged grain**

whole kernel which is distinctly discoloured or damaged by water, insects, heat or any other causes

2.1.9**ear cockle**

nematode seed gall having a blackish brown colouration and containing a mass of small dried-up nematode worms of the species *Anguina tritici*, which become active when immersed in water

Note 1 to entry: This term does not apply to batches of grain containing seeds of corn or purple cockle (*Lychnis githago* Scop. or *Agrostemma githago* L.).

2.1.10**ergot**

sclerotium of the fungus *Claviceps purpurea* which may infect wheat but mostly rye

Note 1 to entry: Sclerotia develop in the ear instead of a seed. Sclerotia contain more than 40 poisonous ergot alkaloids.

2.1.11**extraneous matter**

fraction consisting of inorganic extraneous matter and organic extraneous matter

2.1.12**foreign grain**

seeds, other than cereals, present in the sample or in the lot under consideration

2.1.13**fracture**

surface presented by the endosperm of a broken grain, which can be either mealy, semi-vitreous or vitreous in appearance

2.1.14**fusarium-contaminated grain**

grain of which the pericarp is contaminated by mycelia of *Fusarium* spp

Note 1 to entry: Such grain has a slightly scalded, shrivelled appearance and shows diffuse spots, with badly delimited contours, of pink and/or white colouration.

2.1.15**grains attacked by pests**

grains which show damage owing to attack by rodents, insects, mites or other pests

2.1.16**harmful seed****toxic seed**

seeds which, if present in quantities above a certain limit, may have a toxic, harmful, damaging or dangerous effect on health, organoleptic properties or technological performance

2.1.17**heat damaged grain**

resulting from the effect of heat, grain with a chestnut to black colouration, and of which a section of the endosperm is yellowish-grey or brownish black

2.1.18**hidden infestation**

those insects which are present within individual grains because either they are at juvenile stages and have developed from eggs laid inside the grains or they have entered the interior of individual grains through cracks or other damage, usually to feed

Note 1 to entry: Hidden infestation is not normally apparent upon first examination of the sample.

2.1.19**impurities**

damaged grains and all organic and inorganic materials other than cereals grains

Note 1 to entry: The impurities comprise four main categories as follows: damaged grains; other cereals; extraneous matter; harmful and/or toxic seeds, bunted grains and ergot.

2.1.20**impurity of animal origin**

matter of animal origin (eggs, larvae, nymphs or adults of insects and their fragments, rodent hairs and their fragments, mites and their fragments) separated from the product under specified conditions

2.1.21**infestation****pest species**

live insect and mite species which, during some stage(s) of their life cycle, are capable of causing damage to the grain

2.1.22**initial observed infestation**

those free-living insects that are immediately apparent to the eye when the sample is first examined

2.1.23**mealy fracture**

fracture surface of endosperm that is completely loose in texture and starchy in appearance

2.1.24**moth**

species of the order *Lepidoptera* (*Heterocera*), which are less brightly coloured than butterflies and fly mainly at night

Note 1 to entry: Butterflies (*Rhopalocera*) and moths (*Heterocera*) belong to the same order *Lepidoptera*, but butterflies are not encountered in grain storage.

2.1.25**mouldy grains**

grains with moulds visible to the naked eye on 50 % of the surface and/or inside the kernel

2.1.26**packed unit**

quantity of grain or milled product packed in a bag or a retail pack

2.1.27**pericarp damage**

primary type of damage that causes kernel to be non-whole, consisting of cracks, cuts, abrasions, and chips or pieces of missing endosperm

2.1.28**bran**

milling fraction obtained from removal of outer layer of cereals

2.1.29**seed grain**

grain intended for sowing

2.1.30**semi-vitreous fracture**

fracture surface of endosperm that is partly mealy and partly vitreous in appearance

2.1.31**shrivelled grain****shrunken grains**

grains which are poorly filled, light and thin, whose build-up of reserves has been halted due to physiological or pathological factors

2.1.32**small grains**

sound grains of small size which pass through a sieve of a particular aperture size

2.1.33**spring cereals**

varieties (cultivars) of cereals which are planted in the spring and which flower in the same spring

2.1.34**sprouted grain**

grains in which the radicle or plumule is clearly visible to the naked eye

Note 1 to entry: Sprouted grains of cereals (soft wheat, durum wheat, rye and triticale) are not always taken into account as such, but according to the α -amylase activity which results from their presence and which is expressed as the falling number.

2.1.35**stress crack**

tiny fissure inside a kernel starting near the centre and extending outward through the vitreous endosperm but which does not extend all the way outward to the pericarp

2.1.36**total damaged kernels**

kernels and pieces of grain kernels that are badly ground damaged, weather damaged, damaged by fungi, insect bored, frost damaged, germ damaged, sprout damaged, or otherwise materially damaged

2.1.37**vitreous fracture**

fracture surface of endosperm that is completely compact and translucent in appearance

2.1.38**vitreous grain**

whole sound grain having a natural translucent appearance

Note 1 to entry: These are not considered to be impurities.

2.1.39**waxy cereals**

<wheat, barley, maize, rice, sorghum> cereal with starch composed almost entirely of amylopectine

2.1.40**weevily grain**

grain attacked by grain weevil (*Sytophilus granarius*)

Note 1 to entry: The weevil lays eggs in stored grain, the larvae feed inside the grain.

2.1.41**winter cereals**

varieties (cultivars) of cereals which are planted in the autumn and which flower in the next spring

Note 1 to entry: Flowering occurs only if plants are subjected to certain natural and artificial conditions of vernalization usually involving cold treatment, which occurs naturally if planted before winter frost.

2.1.42**barley**

fruit of the cereal crop *Hordeum vulgare* belonging to the *Poaceae* family

2.1.42.1**feed barley**

barley whose grains are used for feeding animals

2.1.42.2**highland barley****hulless barley****naked barley**

mutant caryopsis of cultivated barley belonging to the *Poaceae* family which easily separates from the glume

2.1.42.3**malting barley**

barley having certain characteristics (physical, chemical, germinative and others) which enable it to be converted to malt

2.1.43**foxtail millet****millet in husk**

caryopsis of cultivated cereal crop that belongs to the *Poaceae* family

Note 1 to entry: The husk of the caryopsis can be red, orange, yellow, white, purple or black in colour; its fruit is oval, yellow in colour, and may be non-glutinous or glutinous.

2.1.44**corn****maize**

fruit cereal crop, usually cultivated, belonging to the *Poaceae* family, often tooth-shaped, triangular and almost rounded, usually yellow or white in colour

2.1.44.1**baby corn**

form of corn for human consumption whose young ears are harvested when silks become visible

2.1.44.2**dent corn**

form of corn whose mature kernel has the shape of a horse's tooth with a depression in the crown

2.1.44.3**field corn**

corn whose mature grains — the common commodity corn, mostly flint and dent types — are mainly used for animal feed either directly or as part of a pre-processed feed

2.1.44.4**flint corn**

form of corn whose mature kernel has a smooth, vitreous, appearance and a rather round shape

2.1.44.5**flour corn**

kind of corn whose kernels are composed largely of soft starch instead of vitreous starch

2.1.44.6**genetically modified corn****GMO**

maize obtained by using recombinant DNA technology, able to transfer specific genes from one organism (e.g. animals, plants, microorganisms) to another, in order to give it one or several new characteristics

2.1.44.7**maize hardness**

amount of vitreous endosperm in the kernel relative to the amount of floury endosperm present in the maize kernel

2.1.44.8**pop corn**

form of corn whose mature kernels have the ability to pop during rapid cooking because of the build-up of internal pressure during rapid heating

2.1.44.9**sweet corn**

form of corn whose kernels have so much sugar and so little starch that they are wrinkled and translucent when dried

2.1.44.10**waxy corn****glutinous corn**

type of corn which contains less than 5 % mass fraction amylose on dry matter, the rest being amylopectin

2.1.45**rice**

fruits of *Oryza sativa* or *Oryza glaberrima*, of the family *Poaceae*

2.1.45.1**abdominal white rice****white belly**

head rice with the opaque portion at the ventral surface or the same side of the embryo

2.1.45.2**aromatic rice****fragrant rice****scented rice**

rice varieties containing a natural aromatic odour different to other rice varieties which especially appears after cooking

2.1.45.3**brown rice****cargo rice****hulled rice****husked rice****loonzain rice**

paddy from which the husk only has been removed

Note 1 to entry: The processes of husking and handling may result in some loss of bran.

Note 2 to entry: For convenience and classification purposes, this entry is identical to that of [2.5.3.1](#).

2.1.45.4**chalky kernel**

head rice (except waxy rice) whose whole surface has an opaque and floury appearance

2.1.45.5**chip**

part of kernel which passes through a test sieve complying with ISO 5223,^[5] and having round apertures of diameter 1,4 mm

2.1.45.6**damaged kernel**

head rice showing evident deterioration due to moisture, pests, disease or other causes.

2.1.45.7**extra well-milled rice**

husked rice obtained by milling in such a way that all of the husk and almost all of the embryo have been removed

2.1.45.8**genetically modified rice**

rice obtained by using recombinant DNA technology, able to transfer specific genes from one organism (e.g. animals, plants, microorganisms) to another, in order to give it one or several new characteristics

2.1.45.9**glutinous rice****waxy rice**

type of rice whose kernels have a white and opaque appearance

Note 1 to entry: The starch of waxy rice consists almost entirely of amylopectin. After cooking, the kernels tend to stick together.

2.1.45.10**grain chalkiness**

head rice whose a part of the endosperm is not translucent (except waxy rice)

2.1.45.11**head rice**

whole kernel or portion of kernel with a length greater than or equal to three-quarters of the average length of the test sample kernels

2.1.45.12**hull****husk**

envelope, flowering glumes and glumes, which encloses the whole kernel

2.1.45.13**immature rice kernel**

head rice which is unripe and badly developed

2.1.45.14**large broken kernel**

part of kernel with a length less than three-quarters but greater than one-half of the average length of the test sample kernels

2.1.45.15**long-grain glutinous rice**

fruits of long-grain and glutinous paddy rice, which generally is oval or long and thin in shape and whose kernels have a white and opaque appearance

Note 1 to entry: The starch of waxy rice consists almost entirely of amylopectin. The kernels have a tendency to stick together after cooking.

2.1.45.16**long-grain non-glutinous rice**

fruit of non-glutinous paddy rice, generally is oval or long and thin in shape, and has relative low stickiness and high expansibility

2.1.45.17**medium broken kernel**

part of kernel with a length less than or equal to one-half but greater than one-quarter of the average length of the test sample kernels

2.1.45.18**medium to short-grain non-glutinous rice**

fruit of medium to short-grain non-glutinous paddy rice, which kernel generally is oval or round type in shape

2.1.45.19**milled rice****white rice**

husked rice from which almost all of the bran and embryo have been removed by milling

2.1.45.20**non-glutinous rice****non-waxy rice**

type of rice having a translucent endosperm whose starch contains amylopectin and amylose

Note 1 to entry: The more amylose non-glutinous rice contains, the more sticky it is after cooking.

2.1.45.21**paddy rice****rough rice**

fruits of cultivated paddy rice, including its husk and caryopsis, as harvested

2.1.45.22**parboiled rice**

husked or milled rice processed from paddy or husked rice that has been soaked in water and subjected to a heat treatment so that the starch is fully gelatinized followed by a drying process

2.1.45.23**partly gelatinized kernel**

parboiled rice which is not fully gelatinized and shows an endosperm white and opaque areas

2.1.45.24**peck****pecky kernel**

head rice or broken kernel of parboiled rice of which more than one quarter of the surface is dark brown or black in colour due to the parboiling process or rice which has brown/black colouration due to bacterial or fungal diseases

2.1.45.25**red kernel**

head rice having red bran

2.1.45.26**red streaked rice**

head rice or broken kernel rice with red streaks of length greater than or equal to half of the kernel length

2.1.45.27**short-grain glutinous rice**

fruits of short-grain and glutinous paddy, which generally is oval in shape, varieties of rice whose kernels have a white and opaque appearance

Note 1 to entry: The starch of waxy rice consists almost entirely of amylopectin. The kernels have a tendency to stick together after cooking.

2.1.45.28**small broken kernel**

part of kernel with a length less than a quarter of the average length of the test sample kernels

2.45.29**well milled rice**

husked rice with most of the husk and the embryo removed by milling

2.1.45.30**white back rice**

husked rice whose dorsal surface located on the opposite side of the embryo is partially chalky

2.1.45.31**white core rice**

husked rice partially chalky at the centre part of the endosperm

2.1.45.32**whole kernels**

grains without any broken part or piece of grains having a length greater than or equal to nine-tenths of the average length of test sample kernels

Note 1 to entry: Average length: arithmetic mean of the test sample kernels that are not immature or malformed and without any broken parts.

2.1.46**wheat**

straw cereal crop sown in winter or spring

Note 1 to entry: The mature plant is characterized by a spike and grain is a naked caryopsis more or less red or white and ovoid.

2.1.46.1**alternative wheat**

late autumn wheat, en GB

winter wheat, en GB

wheat sown equally well during the autumn or winter

2.1.46.2**blending wheat**

wheat with special characteristics, mixed in small quantities to others to produce flour better suited for its intended purpose

2.1.46.3**bread wheat****bread-making wheat**

common wheat which has the appropriate physical, chemical, rheological and other properties for a bread product (such as leavened bread)

2.1.46.4**wheat broken grains**

grains in which part of the endosperm is exposed, or grains without germ

2.1.46.5**durum wheat shrivelled grains**

shrivelled (shrunken), light, thin whole grains, in which accumulation of nutritive elements is finished owing to physiological and pathological influences, and which pass through a specific sieve for each species of grain

2.1.46.6**feed wheat**

wheat whose grains are used for feeding animals

2.1.46.7**genetically modified wheat**

wheat obtained by using recombinant DNA technology, able to transfer specific genes from one organism (e.g. animals, plants, microorganisms) to another, in order to give it one or several new characteristics

2.1.46.8**hard wheat**

wheat with kernels having a high hardness criterion

2.1.46.9**medium hard wheat**

wheat with medium gluten content, and a medium hard texture

2.1.46.10**mottled grains****sick grains****sick wheats**

grains which show, at places other than on the germ itself, colourations between brown and brownish-black, including in the crease

Note 1 to entry: Sick wheat is not considered to be an impurity except for durum wheat.

2.1.46.11**non-wholly-vitreous grain****partly vitreous grain**

grain which is partially vitreous

Note 1 to entry: This expression is used to indicate a defect affecting durum wheat.

2.1.46.12**smutty grains**

grains coloured on the outside by the presence of spores of smuts (*Ustilago* spp.)

Note 1 to entry: Smutty grains should not be confused with grains simply soiled with earth or dust. This distinction can only be made by microscope.

Note 2 to entry: Spores are often clustered in the hairs of wheat brush.

2.1.46.13**bunted grains**

grains coloured on the outside by the presence of brown-black spores of bunt (*Tilletia* spp.)

Note 1 to entry: Both *Tilletia foetida* and *Tilletia caries* can cause common (stinking) bunt, which is sometimes characterized by a fishy odour.

Note 2 to entry: Spores are often clustered in the brush hairs of wheat.

2.1.46.14**soft wheat**

wheat with low gluten content, and a soft, floury endosperm ratio of not less than 70 % mass fraction; in general, it is suitable for cake, biscuit, and low-volume breads

2.2 Terms relating to physiology

2.2.1

dormancy

natural state of suspended growth and metabolism of a viable seed which does not germinate when placed under normal or optimal conditions of light, temperature and moisture

2.2.2

enzyme

biocatalyst and protein substance produced by living cells which catalyses a biochemical reaction in living organism

2.2.3

germ

shoot

sprout

resulting plantule when a dormant seed undergoes the process of germination

Note 1 to entry: The radicle and the plumule are visible at this stage.

Note 2 to entry: See also 2.3.1.17.

2.2.4

germination

physiological activity which precedes plant growth

Note 1 to entry: All the events which occur when the seed passes from dormancy to active growth of a new plantlet.

Note 2 to entry: The visible end result of this activity, the protrusion of the radicle and plumule, is referred to as "sprouting".

Note 3 to entry: The terms "germination" and "sprouting" are not synonyms.

2.2.5

germinative capacity

ability of a grain to germinate, or number of grains that can potentially germinate (e.g. once the seed has move out of dormancy), under experimentally defined conditions which do not include any limitation of duration of germination

Note 1 to entry: Germinative capacity is expressed as the percentage of grains germinating.

2.2.6

germinative force

germinative energy

ability of a grain to germinate, or number of grains that do germinate, under experimentally defined conditions at a given time

Note 1 to entry: Germinative force is expressed as the percentage of grains germinating at a given time.

2.2.7

grain brightness

"lustrous" external appearance of grain which has not been discoloured or damaged by adverse weather conditions, by pests or by unsuitable conditions of storage

2.2.8

maturity

state of a grain when physiologically fully developed and stable after the maturation period