

# Review of the world patent information for February'2016 on the topic "biotechnology of cheeses: cheese, cheese preparations and making thereof"

Information on the topic selected from all over the world

## RU 2 575 096 (Russia)

Int. Cl. A23C 19/076

**Application:** 2014141876/10, 16.10.2014

**Date of publication:** 10.02.2016

**Inventors:** Smirnova Irina Anatol'evna (RU), Gralevskaja Irina Vladimirovna (RU), Romanovskaja Irina

Vladimirovna (RU), Smirnov Aleksandr Vasil'evich (RU)

**Proprietor:** Federal'noe Gosudarstvennoe Bjudzhetnoe Obrazovatel'noe Uchrezhdenie Vysshego

Professional'nogo Obrazovaniya "Kemerovskij Tekhnologicheskij Institut Pishchevoj Promyshlennosti" (RU)

### Cheese preparation method

#### Abstract

**Substance:** cheese production method envisages introduction of whey protein concentrate in the form of Simplesse®-100 natural food additive, produced by way of microparticulation, into defatted milk before pasteurisation, pasteurisation, cooling to the coagulation temperature, introduction of a bacterial starter, calcium chloride and rennet, coagulation during 40-70minutes, cutting into cubes, whey separation, clot heating to 34-37°C during 25-30minutes under continuous stirring conditions, moulding, self-pressing and salting.

**Effect:** invention allows to obtain cheese with increased nutritive and biological value, low caloric content with usage of secondary milk raw materials and of the equipment available at cheese-making factories.

## RU 2 575 101 (Russia)

Int. Cl. A23C 19/076

**Application:** 2014141855/10, 16.10.2014

**Date of publication:** 10.02.2016

**Inventors:** Smirnova Irina Anatol'evna (RU), Gralevskaja Irina Vladimirovna (RU), Romanovskaja Irina

Vladimirovna (RU), Smirnov Aleksandr Vasil'evich (RU)

**Proprietor:** Federal'noe Gosudarstvennoe Bjudzhetnoe Obrazovatel'noe Uchrezhdenie Vysshego

Professional'nogo Obrazovaniya "Kemerovskij Tekhnologicheskij

Volume 4 Issue 2 - 2016

**Olga N. Musina**

Siberian Research Institute of Cheese-Making, Russia

**Correspondence:** Olga N. Musina, Head of the Scientific Information' Analyses Department, Siberian Research Institute of Cheese-Making (Department of Russian Academy of Sciences), Russia, Tel +73852564612, Email musinaolga@gmail.com

**Received:** March 23, 2016 | **Published:** April 25, 2016

Institut Pishchevoj Promyshlennosti" (RU)

### Soft cheese production method

#### Abstract

**Substance:** soft cheese production method envisages introduction of whey protein concentrate in the form of Simplesse®-100 natural food additive, produced by way of microparticulation, into defatted milk, pasteurisation, cooling to the coagulation temperature, introduction of a bacterial starter, calcium chloride and rennet, coagulation during (64±2) minutes, cutting into cubes, clot heating to 40-45°C during 30-40minutes under continuous stirring conditions, whey separation, self-pressing and salting in brine during 2-3hours.

**Effect:** invention allows to obtain a product with increased nutritive and biological value, low caloric content with usage of secondary milk raw materials and of the equipment available at dairy factories.

## RU 2 574 933 (Russia)

Int. Cl. A23C 19/086, F26B 17/18, F26B 3/14

**Application:** 2011118070, 06.05.2011

**Date of publication:** 10.02.2016

**Inventor:** Cherea Dzhuzheppina (IT)

**Proprietor:** Amb'en'te Eh Nutritsione S.P.A. (IT)

## Method for production of partly dried cheese powder

### Abstract

**Substance:** Invention relates to dairy industry. The method for production of partly dried cheese powder from cheese with water content equal to 22-60 wt % includes the stage of source cheese conversion into a finely milled condition and its heating in a flow in the form of a thin turbulent dynamic layer in contact with a wall heated to at least 80°C with production of cheese powder with moisture content no more than 20%; it is feasible to implement the method with the help of a turbodryer (T) including a hollow cylindrical body (1) covered on opposite ends with butt-end plates (2, 3) and equipped with a heating jacket (4), at least one inlet hole (5) and at least one outlet hole (6) and a blade rotor (7) mounted so that to enable rotation inside the said body and, optionally, an additional turbodryer (T') that is essentially identical to the aforesaid one.

**Effect:** Invention allows to maximally preserve the organoleptic characteristics of the source cheese due to short treatment time and to produce products with high microbiological purity.

### AU 2012 270 301 (Australia)

Int. Cl. A23C 19/032, A23C 19/05, A23L 29/00

**Application:** 20120270301, 14.06.2012

**Date of publication:** 04.02.2016

**Priority data:** 20110005607, 16.06.2011, FI; 2012FI50604, 14.06.2012, WO.

**Inventors:** Aaltonen Terhi (FI); Myllarinen Paivi (FI); Huuonen Ilkka (FI); Martikainen Emmi (FI)

**Applicant:** Valio LTD. (FI)

## Cheese and preparing the Same

The present invention relates to a process for producing cheese, comprising the steps of: providing a first raw material liquid; providing a second raw material liquid; treating the first raw material liquid with a protein crosslinking enzyme to provide an enzyme-treated raw material liquid; mixing the enzyme-treated raw material liquid with the second raw material liquid to provide cheese milk; processing the cheese milk into cheese. The process produces cheese in improved yields while retaining the organoleptic properties of cheese unchanged. The invention further relates to cheese treated with a protein crosslinking enzyme, having the moisture on a fat-free basis of 67% or less and a protein profile of cheese has proteins of molecular weight of less than 66 kDa.

### ES 2 558 828 (Spain)

Int. Cl. A23C 19/097, A23C 3/07, A23C 7/00, A23L 3/30, A23L 5/30, A61L 2/025, C12M 1/42, C12N 13/00,

C12N 7/00, C12N 7/04

**Application:** 20120710982T, 29.03.2012

**Date of publication:** 09.02.2016

**Priority data:** 20110000231, 29.03.2011, DK; 20120000054, 20.01.2012, DK; 2012EP55739, 29.03.2012, WO

**Inventor:** Dupont Kitt (DK)

**Applicant:** CHR. HANSEN A.S. (DK)

## Inactivation of bacteriophages in A liquid

**Abstract:** The present invention relates to inactivation of bacteriophages in a liquid, such as bacterial growth medium, milk and whey.

### ES 2 559 655 (Spain)

Int. Cl. A21D 13/00, A21D 13/08, A21D 2/02, A23B 4/023, A23C 19/09, A23G 3/36, A23L 2/02, A23L 2/04

**Application:** 20120793260T, 31.05.2012

**Date of publication:** 15.02.2016

**Priority data:** 201161493328P, 03.06.2011, US; 40100. US, 31.05.2012, PCT

**Inventors:** Stachiw Nancy; Heidolph Barbara Bufe; Effenberger Reinhard; Stover Frederick S; Zhou Lirong

**Applicant:** ICL PERFORMANCE PRODUCTS LP (US)

## Carnallite preparation and uses thereof in edible applications

**Abstract:** A Camallite salt preparation useful in edible products, such as a food, beverage, dietary supplement, oral care, nutraceutical pet food, animal feed, pharmaceutical and other edible products. The Camallite salt preparation of the invention is without high levels of sodium chloride and notably low in bromide. The Camallite salt preparation may be a food grade product with dietary acceptable bromide levels. The present invention further relates to edible products comprising the Camallite salt preparation, such as reduced sodium food products.

### CN 105 324 035 (China)

Int. Cl. A23C 19/068, A23C 19/072, A23C 19/08

**Application:** 2014815738, 17.03.2014

**Date of publication:** 10.02.2016

**Priority data:** 201361852465P, 15.03.2013, US; 2014US30879, 17.03.2014, WO

**Inventors:** Milani Palmer Gandhi Niranjana R. (US), Franco X. (US), Skebba Victoria (US)

**Applicant:** Jeneil biotech, INC. (US)

## Restructured natural protein matrices

### Abstract

Methods as can be used in the preparation of one or more dairy, dairy analog and cheese products from a range of proteinaceous starting materials, such methods comprising protein modification and protein restoration or protein restructure.

### US 9 259 697 (USA)

Int. Cl. A23C 19/06, A23C 9/12, B01F 7/00

**Application:** 20060279479D, 22.02.2006

**Date of publication:** 16.02.2016

**Priority data:** 2006EP02197, 22.02.2006, WO Di Tecco Caron Jean-Pierre (ES)

**Inventors:** Ospina Martinez Ana (ES), Biloe Sébastien (FR) Genovesi Noémie (FR), Thierry (ES),

**Assignee:** Gervais Danone S.A. (FR)

### Process for manufacturing a fermented milk

#### Abstract

The invention relates to a manufacturing process of stirred or drinking fermented milk or fresh cheese comprising a smoothing step after fermentation wherein said smoothing step is performed by a ring-shaped rotor-stator mixer, each ring of the rotor and the stator being provided with radial slots having a given width, and adjusting the rotational speed to adjust the peripheral velocity.

### US 2016 050 878 (USA)

Int. Cl. A01J 27/02, A23C 19/084, A23C 19/16, B65B 25/06

**Application:** 201414782458, 04.04.2014

**Date of publication:** 25.02.2016

**Priority data:** 20130053076, 05.04.2013, FR; 2014EP56881, 04.04.2014, WO

**Inventor:** Pennarun Pierre-Yves (FR)

**Applicant:** Bel Fromageries (FR)

### Method for coating cheese products

#### Abstract

A method for preparing a coated cheese product, includes: a) injecting a cheese material in the viscous state between two coating films, the films being malleable at the storage temperature of the coated cheese product, and each including, on the outer face, at least one external layer of a coating composition C1 in the gelled state, the coating composition including at least one hydrophobic polymer, and b) shaping at least a coated cheese product by pressure on the outer face of each coating film to obtain a coated cheese product including a cheese core including the material and a coating that is malleable at the storage temperature of the coated cheese product and sealed against moisture and microorganisms, and completely surrounds the core at its periphery, the coating being formed by assembly by pressure of the two coating films including at least an outer layer of the coating composition C1.

### JP 2016 019 534 (Japan)

Int. Cl. A01J 25/12, A23C 19/08, A23C 19/093

**Application:** 20150159545, 12.08.2015

**Date of publication:** 04.02.2016

**Priority data:** 20090154502, 06.03.2009, EP

**Inventors:** Marder Uwe Kopp Kempter Klaus (DE), (DE), Gabriele Laudenbach Erich (DE), Pirnay Etienne (BE) (DE), Schaar Oliver (BE),

**Applicants:** Marder Uwe (DE), Kempter Klaus (DE), Kopp Gabriele (DE), Schaar Oliver (BE), Laudenbach Erich (DE), Pirnay Etienne (BE)

### A process and a machine for producing a filled sheet of process cheese, as well as a filled sheet of process cheese

#### The formula of the invention (Claims)

- i. A process of producing a filled sheet of process cheese, comprising: co-extruding the process cheese and a filling into a packaging material to produce a strand having a thickness; and
- ii. Separating the strand at predetermined locations to produce separate sheets, in which the filling is fully enclosed.
- iii. The process of claim 1, comprising sealing the packaging material to itself during separation of the strand, and cutting to produce separate, packaged sheets of filled process cheese.
- iv. The process of claim 1, comprising reducing the strand in thickness and/or cooling the filled sheets after separating the continuous strand.
- v. The process of claim 1, in which the filling is at least one of the group consisting of a second type of process cheese, a fresh or soft cheese, pesto, tomato sauce, marmalade, jam, jelly, and chocolate. The process of claim 1, wherein the filled sheets have a thickness of 6mm or less, and/or a weight of 45 g or less.
- vi. The process of claim 1, wherein the flow of at least one of the process cheese and the filling is controlled at only a portion of a cross-sectional area, through which the process cheese or the filling is extruded or supplied to extrusion.
- vii. The process of claim 1, wherein the flow of at least one of the process cheese and the filling is laminar. The process of claim 1, wherein at least one of the process cheese and the filling is extruded in a liquid state and/or with a temperature of 65°C. or more.
- viii. The process of claim 1, wherein the process cheese and the filling are subjected to co-extrusion at a pressure of 1-10 bar.
- ix. The process of claim 1, wherein the difference between the absolute moisture content of the process cheese and of the filling is 10% or less.
- x. The process of claim 1, wherein the viscosity of at least one of the process cheese and the filling is 200-10,000 mPa·s.
- xi. The process of claim 1, wherein the difference of the pH values of the process cheese and the filling is 2.0 or less.
- xii. A machine for producing filled sheets of process cheese, comprising:
- xiii. a co-extrusion nozzle with an outer port for extruding an outer component; and
- xiv. an inner port for extruding an inner component fully enclosed by the outer component into packaging material so as to form a extruded strand.

- xv. The machine of claim 13, wherein at least the inner port is substantially flat in cross-section with first sides being longer than second, short sides, and the outer port is greater in cross-section adjacent at least one first side of the inner port than adjacent other areas of the inner port.
- xvi. The machine of claim 13, wherein the inner port is substantially rectangular in cross-section.
- xvii. The machine of claim 13, wherein at least one of the outer and inner ports is in connection with a tube having a cross-section substantially corresponding to that of the respective port.
- xviii. The machine of claim 13, wherein at least one of the outer and inner ports is in connection with at least one pipe.
- xix. The machine of claim 16, wherein the cross-sectional area of at least one tube is partially blocked by a ridge or a flap.
- xx. The machine of claim 18, wherein the ridge or flap is adjustable.
- xxi. The machine of claim 13, wherein the outer and inner ports are at a substantially identical location along the extrusion direction.
- xxii. The machine of claim 13, further having a device for supplying a packaging material, into which the components are extruded; a device for sealing packaging material to itself; a cooling area for cooling, and a device for severing separate packages enclosing co-extruded components.
- xxiii. The machine of claim 13, wherein a cross-sectional area of an inner nozzle leading to the inner port is reduced by a factor of 6 and/or a cross-sectional area of an outer nozzle leading to the outer port is reduced by a factor of 3 or less, over a length of 30cm.
- xxiv. The machine of claim 13, wherein a cross-sectional area of at least one of an inner nozzle leading to the inner port and an outer nozzle leading to the outer port is substantially constant for a length of between about 4 and about 10cm upstream of the port(s) and starting at the port(s).
- xxv. A sheet of process cheese filled with a filling fully enclosed by the process cheese and having a thickness of 6mm or less.
- xxvi. The sheet of claim 24, wherein the filling is at least one of the group consisting of a second type of process cheese; a fresh or soft cheese; pest; tomato sauce; marmalade; jam; jelly and chocolate. The sheet of claim 24, wherein a thickness variation measured over 80% of the surface, spaced from all edges, is 10% and/or 0.5mm or less.
- xxvii. The machine of claim 13, comprising a device for reducing the thickness of the co-extruded strand having two or more cooperating rollers.
- xxviii. The machine of claim 13, comprising a device for separating the co-extruded strand including two or more rollers having ridges.
- xxix. The machine of claim 13, wherein the inner port is substantially rectangular in cross-section with rounded second, short sides, and the outer port is substantially oval in cross-section.

- xxx. The machine of claim 17, wherein at least one pipe has a substantially circular cross-section.
- xxx. The machine of claim 30, wherein the cross-sectional area of at least one pipe is partially blocked by a ridge or a flap.

## JP 2016 503 646 (Japan)

Int. Cl. A23C 19/082

**Application:** 20150546512, 26.11.2013

**Date of publication:** 08.02.2016 201213708487, 07.12.2012, US; 2013US71958, 26.11.2013, WOBoomgaarden

**Inventors:** Mcpherson Andrew Edward (US), Levine Brian E. (US) Tori Ann (US), Smith Gary Francis (US),

**Applicants:** Mcpherson Levine Brian E. Boomgaarden Tori Ann (US), Smith Gary Francis (US), Andrew Edward (US), (US)

### Emulsifying salt-free and starch stabilized cheese

#### Abstract

Emulsifying salt-free processed cheese products as well as methods of preparing emulsifying salt-free processed cheese products are provided. The emulsifying salt-free processed cheese products are prepared with modified starch containing amylopectin and substantially no amylase and without emulsifying salts. The emulsifying salt-free processed cheese products are advantageously resistant to separation during heating and retain desirable organoleptic properties, such as texture and flavor, without using emulsifying salts.

#### The formula of the invention (Claims)

- i. A processed cheese that does not contain significant levels of emulsifying salts, the processed cheese comprising:
  - A. a natural cheese or a mixture of natural cheeses providing from about 5 weight percent to about 30 weight percent dairy protein;
  - B. about 30 weight percent to about 80 weight percent water;
  - C. about 0.5 weight percent or less of emulsifying salts so that the processed cheese does not contain significant levels of emulsifying salts;
  - D. about 0.1 weight percent to about 10 weight percent modified starch containing amylopectin and substantially no amylose; and
  - E. a uniform distribution of amylopectin with substantially no intact starch granules and substantially no starch agglomerates with less than about 0.1percent amylose so that the processed cheese has substantially no amylose therein, the amylopectin and amylose from the modified starch in a form and in a ratio effective to provide substantially no texture or flavor to the processed cheese.
- ii. The processed cheese of claim 1, wherein the modified starch is effective to provide less than about 10 intact starch granules of amylopectin per about 900mm <sup>2</sup> of processed cheese as determined by Lugol's iodine stain at about 20× magnification such that there are substantially no intact starch granules of amylopectin in the processed cheese.

- iii. The processed cheese of claim 1, wherein the processed cheese contains no intact starch granules, no starch agglomerates, and no amylose.
- iv. The processed cheese of claim 1, wherein the processed cheese has a ratio of amylopectin to amylose from about 20 to about 200.
- v. The processed cheese of claim 1, wherein the processed cheese has no amylose.
- vi. The processed cheese of claim 1, wherein the modified starch is a waxy starch.
- vii. The processed cheese of claim 1, wherein the modified starch is a substituted waxy corn starch.
- 8. The processed cheese of claim 1, wherein the cheese product is selected from the group consisting of sauce, spread, slice, shred, stick, loaf, and brick.
- viii. The processed cheese of claim 1, wherein the modified starch is effective so that the processed cheese exhibits a viscosity decrease of about 50,000 cps to about 60,000 cps during heating upon the modified starch being initially added to the processed cheese after starch gelatinization.
- ix. The processed cheese of claim 1, wherein the processed cheese is a component in a meal kit.
- x. A method of preparing an emulsifying salt-free processed cheese, the method comprising the steps of:
  - xi. heating a blend of water and a modified starch containing amylopectin and substantially no amylose to its gelatinization temperature to form a cooked starch paste;
  - xii. blending the cooked starch paste and natural cheese or a mixture of natural cheeses with water to form a cheese mixture where the cheese mixture contains about 0.5 weight percent or less of emulsifying salts so that the cheese mixture does not contain significant levels of emulsifying salts; heating the cheese mixture to form the emulsifying salt-free processed cheese, the amount of modified starch containing amylopectin and substantially no amylose being effective to form the processed cheese having a uniform distribution of amylopectin with substantially no intact starch granules and substantially no starch agglomerates and less than about 0.1 percent amylose so that the processed cheese has substantially no amylose in the processed cheese, the amylopectin and amylose in a form and in a ratio effective to provide substantially no texture or flavor to the processed cheese.
- xiii. The method of claim 11, wherein the modified starch is effective so that cheese mixture exhibits a viscosity decrease of about 50,000 cps to about 60,000 cps during heating.
- xiv. The method of claim 11, wherein the blend of water and modified starch containing amylopectin and substantially no amylose is heated to about 65° C. to about 75° C. to form the cooked starch paste having a viscosity from about 2500 cps to about 3000 cps.
- xv. The processed cheese of claim 11, wherein the modified starch containing amylopectin and substantially no amylose is a waxy starch.
- xvi. The method of claim 14, wherein the modified starch containing amylopectin and substantially no amylose is a substituted waxy corn starch.
- xvii. The method of claim 11, wherein a viscosity of the cheese mixture decreases from an initial viscosity of about 60,000 cps to about 65,000 cps to a final viscosity of about 2500 cps to about 3500 cps.
- xviii. The method of claim 11, wherein the cheese mixture contains about 1 percent to about 3 percent of the modified starch containing amylopectin and substantially no amylose.
- xix. The method of claim 11, wherein the processed cheese contains about 5 percent to about 95 percent natural cheese or a mixture thereof.
- xx. The method of claim 11, wherein the processed cheese is a cheese sauce or cheese spread.
- xxi. The method of claim 11, wherein the processed cheese is a cheese slice or a cheese stick.
- xxii. The method of claim 11, wherein the processed cheese is a cheese component in a meal kit.
- xxiii. The method of claim 11, wherein the cooked starch paste is sheared prior to blending the cooked starch paste with the natural cheese or a mixture of natural cheeses with water to form a cheese mixture.

## WO 2016 027 231 (international application)

Int. Cl. A23C 19/068, A23C 19/076, A23C 19/097

**Application:** 2015IB56276, 18.08.2015

**Date of publication:** 25.02.2016

**Priority data:** 2014MI01500, 18.08.2014, IT

**Inventors:** Mogna Giovanni (IT), Strozzi Gian Paolo (IT), Radicci Simona (IT) Caseificio

**Applicants:** Mofin S.R.L. (IT), Pugliese F.Lli Radicci S.P.A (IT)

### **Method for preparing milk-derived products based on cream, ricotta and mixtures thereof intended for quick-freezing or freezing, products obtained with said method and uses thereof**

**Abstract:** The present invention relates to a method which allows to quick-freezing or freezing, and subsequently thawing, without inducing any damage or modification, milk derivatives particularly sensitive to such thermal treatments, due to their distinctive chemical-physical characteristics. The present method is useful for preparing cream, ricotta, and mixtures thereof, as well as foods containing the same, which can be stored while keeping their characteristics intact. Finally, the present invention further relates to cream, ricotta, and mixtures thereof, as well as foods containing the same thus obtained, capable to retain the organoleptic and chemical-physical characteristics of the fresh product. Thus, the present invention concerns a method for preparing milk-derived products preferably based on cream, ricotta or mixtures thereof intended for quick-freezing or freezing in order to retaining the organoleptic and chemical-physical characteristics of the fresh product.

## The formula of the invention (Claims)

- i. A method for quick-freezing or freezing a milk-derived product, or a whey-derived product or mixtures thereof, or a foodstuff containing said milk-derived product, or said whey-derived product, or mixtures thereof; said method comprising the addition, during the preparation process of said milk- or whey-derived product, or mixtures thereof or during the preparation process of said foodstuff containing said milk or whey derivatives, or mixtures thereof, of a mixture comprising or, alternatively, consisting of inulin, fructooligosaccharide or mixtures thereof, said addition being performed prior to the thermal treatment of quick-freezing or freezing.
- ii. The method according to claim 1, wherein said milk derivative is cream, said whey derivative is ricotta and said foodstuff containing said milk derivative is burrata; all the above, once quick-frozen/frozen, being thawed and stored at a temperature of 4°C.
- iii. The method according to claim 1 or 2, wherein said inulin, fructooligosaccharide or mixtures thereof are added to said milk derivative, preferably cream, which is a product being obtained by separating the fat from the other milk components, only after that the milk fat is separated from the other milk components.
- iv. The method according to claim 1 or 2, wherein said inulin, fructooligosaccharide or mixtures thereof are added to the ricotta preferably during the homogenization and smoothing step.
- v. The method according to any one of the preceding claims, wherein:
  - A) Said inulin has an average degree of polymerization comprised from 11 to 60;
  - B) Said fructooligosaccharide has an average degree of polymerization comprised from 2 to 10; or
  - C) Mixtures of said inulin and said fructooligosaccharide.
- vi. The method according to any one of the preceding claims, wherein said mixture comprising or, alternatively, consisting of inulin, fructooligosaccharide or mixtures thereof has an inulin: fructooligosaccharide weight ratio comprised from 1 :50 to 50:1, preferably from 1 :30 to 30:1, even more preferably from 1 :20 to 20: 1.
- vii. The method according to any one of the preceding claims, wherein said mixture comprising or, alternatively, consisting of inulin, fructooligosaccharide or mixtures thereof is used:
  - A) when the milk derivative is cream, in an amount by weight comprised from 1 to 20%, relative to the weight of the milk-derived product; preferably in an amount by weight comprised from 5 to 15%, relative to the weight of the milk-derived product; even more preferably in an amount by weight comprised from 7 to 10%, relative to the weight of the milk-derived product;
  - B) when the whey derivative is ricotta, in an amount by weight comprised from 1 to 10%, relative to the weight of the whey-derived product; preferably in an amount by weight comprised from 2 to 5%, relative to the weight of the whey-derived product; even more preferably in an amount by weight comprised from 3 to 3.5%, relative to the weight of the whey-derived product.

- viii. A milk- or whey-derived product, or mixtures thereof, or a foodstuff containing said milk or whey derivatives, or mixtures thereof, wherein said product can be obtained by the method according to any one of the preceding claims.
- ix. Use of a milk- or whey-derived product, or mixtures thereof according to claim 8 as ingredient for preparing a foodstuff, preferably said milk-derived product is cream and said foodstuff is burrata.
- x. Use of inulin having a degree of polymerization comprised from 11 to 60, or a fructooligosaccharide having a degree of polymerization (DP) comprised from 4 to 10, or mixtures thereof, for preparing a milk- derived product, preferably cream, a whey-derived product, preferably ricotta, or a foodstuff, preferably burrata.

## EP 2984940 (European patent office)

Int. Cl. A23C 19/08, A23L 17/00, A23L 23/00, A23L 27/00, A23L 27/20, A23L 27/60

**Application:** 20140782867, 27.03.2014

**Date of publication:** 17.02.2016

**Priority data:** 20130080665, 08.04.2013, JP; JP58873, 27.03.2014, PCT/

**Inventors:** Hattori Ayako (JP), Uchiyama Tomoko (JP), Okazaki Tomokazu (JP)

**Applicant:** Matsutani Kagaku Kogyo K.K. (JP)

**Method for reinforcing salty taste of food, food and salty taste-reinforcing agent obtained using same method**

### Abstract

Disclosed herein are a method for improving the saltiness of a food or drink, and the saltiness of a food or drink containing a salt and a grain. The saltiness enhancing method enhances the saltiness of salt-containing food or drink by adding a rare sugar to a raw material of the food or drink. The saltiness enhancing method is a method for reducing the salt content in a food or drink containing a salt, or a method for masking a grain odor due to a grain in a raw material of the food or drink that contains the grain as a part thereof and contains a salt. The rare sugar contains at least D-psicose.

### The formula of the invention (Claims)

- i. A method for enhancing the saltiness of a food or drink containing a salt, the method comprising adding a rare sugar to a raw material of the food or drink containing the salt. The method according to claim 1, wherein the method reduces the salt content in the food or drink containing the salt.
- ii. The method according to claim 1, wherein the methods masks a grain odor due to a grain in a raw material of the food or drink that contains the grain as a part thereof and contains the salt.
- iii. The method according to any one of claims 1 to 3, wherein the rare sugar is a rare sugar containing at least D-psicose.
- iv. The method according to claim 4, wherein the

- rare sugar containing at least D-psicose is a syrup. The method according to claim 4 or 5, wherein the rare sugar containing at least D-psicose is produced from a raw material selected from fructose, isomerized sugar, glucose, and sucrose.
- v. The method according to any one of claims 4 to 6, wherein the rare sugar containing at least D-psicose contains 0.5 to 17.0% of D-psicose.
  - vi. The method according to any one of claims 1 to 7, wherein the salt is at least one selected from sodium chloride, potassium chloride, magnesium chloride, calcium chloride, sodium glutamate, and sodium succinate.
  - vii. The method according to any one of claims 4 to 8, wherein the rare sugar containing at least D-psicose is contained in 0.01 to 46 parts by weight in terms of a solid content with respect to the total 100 parts by weight of all raw materials of the food or drink containing the salt.
  - viii. The method according to any one of claims 4 to 9, wherein the rare sugar is a rare sugar containing at least D-psicose, and a ratio A/B in the food or drink is 0.02 to 78, wherein A is a content of the rare sugar containing at least D-psicose (solid content, g/100 g) and B is a total content of Na, K, Ca, and Mg (g/100 g).
  - ix. A food or drink having saltiness enhanced by the saltiness enhancing method of any one of claims 1 to 10.
  - x. A saltiness enhancer comprising a rare sugar containing at least D-psicose, the enhancer being used by being contained in a raw material of a food or drink containing a salt.

### Acknowledgements

None.

### Conflict of interest

Author declares that there is no conflict of interest.