

DESCRIPTION

Title of Invention: FROZEN DESSERT

Technical Field

5 [0001]

The present invention relates to frozen desserts.

Background Art

[0002]

10 Conventionally, frozen desserts, such as ice cream,
have contained a high amount of carbohydrates. However, from the
viewpoint of controlling body weight while maintaining high
palatability, frozen desserts with reduced carbohydrates are
gaining popularity, as with other food products. In such low-
15 carbohydrate food products, dietary fiber is usually used in
place of carbohydrates. In the production of ice cream products,
air bubbles are mixed into an ice cream mix in order to provide a
unique soft mouthfeel. The air mixing ratio here is referred to
as "overrun." Low-carbohydrate frozen desserts with high overrun,
20 in particular, have a problem in that maintaining the shape of
the frozen dessert is difficult. Adding inulin instead of
reducing carbohydrates has the advantage of being able to
maintain the shape of the frozen dessert. However, there has been
a problem in that conventional inulin-containing frozen desserts
25 shrink when stored in a frozen state for a long period of time;
i.e., so-called shrinkage occurs.

Citation List

Patent Literature

30 [0003]

PTL 1: WO2017/039008

PTL 2: JP2023-001009A

Summary of Invention

35 Technical Problem

[0004]

An object of the present invention is to provide an inulin-containing frozen dessert in which shrinkage is suppressed.

5

Solution to Problem

[0005]

Under such circumstances, the present inventors conducted extensive research and found that shrinkage is suppressed when using inulin in which the proportion of long molecules in which a relatively large number of monosaccharides constituting the inulin are linked together is low and/or the proportion of short molecules in which a relatively small number of monosaccharides constituting the inulin are linked together is high. The present invention has been accomplished based on such novel findings. Accordingly, the present invention provides the following items.

Item 1. A frozen dessert comprising inulin, wherein the proportion of molecules having 18 or more monosaccharide units in the inulin is 50 mass% or less.

[0006]

Item 2. A frozen dessert comprising inulin, wherein the proportion of molecules having 3 to 13 monosaccharide units in the inulin is 40 mass% or more.

[0007]

Item 3. The frozen dessert according to Item 1 or 2, wherein the frozen dessert has a carbohydrate content of 0 to 30.0 mass%.

30 [0008]

Item 4. The frozen dessert according to Item 1 or 2, wherein the frozen dessert has an inulin content of 3.0 to 30 mass%.

[0009]

35 Item 5. The frozen dessert according to Item 1 or 2, or

the agent according to Item 3 or 4, wherein the frozen dessert has an overrun of 15% or more.

[0010]

Item 6. The frozen dessert according to Item 1 or 2,
5 wherein the frozen dessert has a hardness of 100 or less as measured using a texture analyzer under the following conditions:

[0011]

Measurement Conditions

The frozen dessert stored at -20°C in a container
10 having the following dimensions is transferred to an environment at 25°C, and the measurement is initiated 30 seconds after the transfer;

the container has a height of 51 mm, an upper inner diameter of 70 mm, and a lower inner diameter of 58 mm;

15 upper jig: a cylindrical pressing jig (diameter: 5 mm; made of stainless steel);

lower jig: a lower compression plate (diameter: 200 mm; made of aluminum);

penetration speed: 1.0 mm/min;

20 penetration distance: 30 mm; and

the hardness is defined as the maximum stress (N) until the jig is inserted 30 mm into the sample.

[0012]

Item 7. The frozen dessert according to Item 1 or 2,
25 wherein the hardness of the frozen dessert is the same as or lower than that of a frozen dessert produced in the same manner except that the inulin is replaced with an equal amount of polydextrose.

30 Advantageous Effects of Invention

[0013]

The present invention can provide an inulin-containing frozen dessert in which shrinkage is suppressed.

35 Brief Description of Drawings

[0014]

Fig. 1 is a set of photographs for explaining an overview of a shrinkage measurement. The right side of Fig. 1 is a photograph showing a container and ice milk in which shrinkage has occurred. The left side of Fig. 1 shows, in terms of the ice milk and the container, a circle formed by the contact points between the plane including the top surface of the ice milk and the inner wall of the cup (larger circle), as well as the top surface of the ice milk after storage (smaller circle).

10

Description of Embodiments

[0015]

In the present invention, ice cream products and sherbet are collectively referred to as "frozen desserts." In the present invention, "ice cream products" mean products that are obtained by processing food products produced using raw milk, milk or dairy products, fruit juices, sugars, flavorings, and the like as ingredients, or by freezing such food products as principal ingredients, and that contain 3.0% or more of milk solids (excluding fermented milk). More specifically, ice cream products include ice cream (i.e., high-milkfat ice cream, containing 15.0% or more of milk solids (including 8.0% or more of milk fat)), ice milk (i.e., middle-milkfat ice cream, containing 3.0% or more of milk solids (including 3.0% or more of milk fat)), lacto-ice (i.e., low-milkfat or non-milkfat ice cream, containing 3.0% or more of milk solids), and the like. In the present invention, the frozen desserts are preferably ice cream products. Among ice cream products, ice milk and lacto-ice are preferred, and ice milk is more preferred. In the present invention, ice milk, lacto-ice, and the like, which have a lower milk solids content than that of ice cream and are prone to shrinkage, are preferred because suppressing shrinkage is possible.

[0016]

35 In the present invention, inulin is interpreted to have

the meaning of the term as commonly used in the food field. Typically, inulin is a type of dietary fiber that is a polymer of fructose, and usually has glucose bonded to a terminal end thereof. In the present invention, "inulin having 3
5 monosaccharide units" refers to a molecule having a sugar chain in inulin in which three monosaccharides are linked together. Similarly, "inulin having X monosaccharide units" refers to a molecule having a sugar chain in inulin in which X monosaccharides are linked together.

10 [0017]

In a preferred embodiment of the frozen dessert of the present invention, the proportion of molecules having 18 or more monosaccharide units in the inulin contained in the frozen dessert is 50.0 mass% or less, more preferably 49.0 mass% or
15 less, more preferably 48.0 mass% or less, more preferably 47.0 mass% or less, more preferably 46.0 mass% or less, more preferably 45.0 mass% or less, more preferably 44.0 mass% or less, more preferably 43.0 mass% or less, more preferably 42.0 mass% or less, more preferably 41.0 mass% or less, more
20 preferably 40.0 mass% or less, more preferably 39.0 mass% or less, more preferably 38.0 mass% or less, and more preferably 37.0 mass% or less. In a preferred embodiment of the frozen dessert of the present invention, the lower limit of the proportion of the molecules having 18 or more monosaccharide
25 units in the inulin contained in the frozen dessert is not limited and may be, for example, 0 mass% or more, 1 mass% or more, preferably 5 mass% or more, more preferably 10 mass% or more, more preferably 15 mass% or more, more preferably 20 mass% or more, more preferably 25 mass% or more, and more preferably 30
30 mass% or more.

[0018]

In a preferred embodiment of the frozen dessert of the present invention, the proportion of molecules having 3 to 13 monosaccharide units in the inulin contained in the frozen
35 dessert is 40.0 mass% or more, more preferably 41.0 mass% or

more, more preferably 42.0 mass% or more, more preferably 43.0 mass% or more, more preferably 44.0 mass% or more, more preferably 45.0 mass% or more, more preferably 46.0 mass% or more, more preferably 47.0 mass% or more, more preferably 48.0 mass% or more, more preferably 49.0 mass% or more, more preferably 50.0 mass% or more, more preferably 51.0 mass% or more, more preferably 52.0 mass% or more, more preferably 53.0 mass% or more, and more preferably 54.0 mass% or more. In a preferred embodiment of the frozen dessert of the present invention, the upper limit of the proportion of the molecules having 3 to 13 monosaccharide units in the inulin contained in the frozen dessert is not limited and may be, for example, 100 mass% or less, 95 mass% or less, preferably 90 mass% or less, more preferably 80 mass% or less, more preferably 70 mass% or less, more preferably 60 mass% or less, and more preferably 55 mass% or less.

[0019]

In a preferred embodiment of the frozen dessert of the present invention, the proportion of the molecules having 18 or more monosaccharide units in the inulin contained in the frozen dessert is preferably 0 mass% or more and 50.0 mass% or less, and the proportion of the molecules having 3 to 13 monosaccharide units is preferably 40.0 mass% or more and 100 mass% or less. In this embodiment, the upper limit of the proportion of the molecules having 18 or more monosaccharide units in the inulin contained in the frozen dessert can be appropriately selected from a range of 50.0 mass% or less, more preferably 49.0 mass% or less, more preferably 48.0 mass% or less, more preferably 47.0 mass% or less, more preferably 46.0 mass% or less, more preferably 45.0 mass% or less, more preferably 44.0 mass% or less, more preferably 43.0 mass% or less, more preferably 42.0 mass% or less, more preferably 41.0 mass% or less, more preferably 40.0 mass% or less, more preferably 39.0 mass% or less, more preferably 38.0 mass% or less, more preferably 37.0 mass% or less, and more preferably 36.0 mass% or less. In this

embodiment, the lower limit of the proportion of the molecules having 18 or more monosaccharide units in the inulin contained in the frozen dessert can be appropriately selected from a range of 0 mass% or more, more preferably 1 mass% or more, more preferably 5 mass% or more, more preferably 10 mass% or more, more preferably 15 mass% or more, more preferably 20 mass% or more, more preferably 25 mass% or more, and more preferably 30 mass% or more. In this embodiment, the lower limit of the proportion of the molecules having 3 to 13 monosaccharide units in the inulin contained in the frozen dessert can be appropriately selected from a range of 40.0 mass% or more, more preferably 41.0 mass% or more, more preferably 42.0 mass% or more, more preferably 43.0 mass% or more, more preferably 44.0 mass% or more, more preferably 45.0 mass% or more, more preferably 46.0 mass% or more, more preferably 47.0 mass% or more, more preferably 48.0 mass% or more, more preferably 49.0 mass% or more, more preferably 50.0 mass% or more, more preferably 51.0 mass% or more, more preferably 52.0 mass% or more, more preferably 53.0 mass% or more, and more preferably 54.0 mass% or more. In this embodiment, the upper limit of the proportion of the molecules having 3 to 13 monosaccharide units in the inulin contained in the frozen dessert can be appropriately selected from a range of 100 mass% or less, more preferably 95 mass% or less, more preferably 90 mass% or less, more preferably 85 mass% or less, more preferably 80 mass% or less, more preferably 70 mass% or less, more preferably 60 mass% or less, and more preferably 55 mass% or less. In this embodiment, a combination of the proportion of the molecules having 18 or more monosaccharide units and the proportion of the molecules having 3 to 13 monosaccharide units in the inulin contained in the frozen dessert can also be appropriately selected from the above. The frozen dessert of the present invention has an inulin content of preferably 3.0 to 30 mass%, and more preferably 7 to 20 mass%.

[0020]

The frozen dessert of the present invention preferably

has a carbohydrate content (excluding dietary fiber) of 0 to 20.0 mass%. Examples of carbohydrates include, but are not limited to, sugar (white soft sugar, granulated sugar, powdered sugar, coarse sugar, etc.), maltose, lactose, glucose, trehalose, fructose, 5 invert sugar, starch syrup, isomerized sugar, and sugar alcohol. The carbohydrates can be used alone or in a combination of two or more. In the present invention, the overrun of the frozen dessert is preferably 15% or more, more preferably 20% or more, more preferably 30% or more, more preferably 40% or more, more 10 preferably 50% or more, more preferably 60% or more, more preferably 70% or more, and more preferably 80% or more. The upper limit of the overrun of the frozen dessert is also not limited and is preferably, for example, 150% or less, and more preferably 120% or less. In the present invention, the term 15 "overrun" means the ratio of the volume of air mixed into the ingredients (for example, the ice cream mix) of a frozen dessert per unit volume. For example, when one liter of air is mixed into one liter of an ice cream mix, two liters of ice cream are produced, and the overrun is 100%.

20 [0021]

In a preferred embodiment, the frozen dessert of the present invention not only exhibits an effect of suppressing shrinkage, but also has advantages of having low hardness and a smooth mouthfeel. Specifically, in a preferred embodiment, the 25 frozen dessert of the present invention has a hardness of 100 or less as measured using a texture analyzer under the following measurement conditions:

the frozen dessert stored at -20°C in a container having the following dimensions is transferred to an environment 30 at 25°C, and the measurement is initiated 30 seconds after the transfer;

the container is a hollow truncated conical container having a height of 51 mm, an upper inner diameter of 70 mm, and a lower inner diameter of 58 mm;

35 upper jig: a cylindrical pressing jig (diameter: 5 mm;

made of stainless steel);

lower jig: a lower compression plate (diameter: 200 mm;
made of aluminum);

penetration speed: 1.0 mm/min;

5 penetration distance: 30 mm; and

the hardness is defined as the maximum stress (N) until
the jig is inserted 30 mm into the sample.

In this embodiment, the hardness can be measured by filling the
above container with 100 mL of the frozen dessert of the present
10 invention. More specifically, the hardness of the frozen dessert
of the present invention can be measured by the method described
in the Examples below. In the present invention, the hardness of
the frozen dessert is preferably slightly higher than, the same
as, or lower than that of a frozen dessert produced in the same
15 manner except that the inulin is replaced with an equal amount of
polydextrose, more preferably the same as or lower than that of a
frozen dessert produced in the same manner except that the inulin
is replaced with an equal amount of polydextrose, and more
preferably lower than that of a frozen dessert produced in the
20 same manner except that the inulin is replaced with an equal
amount of polydextrose. In this embodiment, the hardness that is
"slightly higher" than that of a frozen dessert produced in the
same manner except that the inulin is replaced with an equal
amount of polydextrose means, for example, that the hardness of
25 the frozen dessert of the present invention is more than 1.0
times and 1.2 times or less, preferably more than 1.0 times and
1.1 times or less, the hardness of a frozen dessert produced in
the same manner except that the inulin is replaced with an equal
amount of polydextrose. In this embodiment, the hardness can be
30 measured under the measurement conditions described above, and
more specifically, by the method described in the Examples below.
In the embodiments in which hardness is defined, the present
invention is not limited to those under the conditions mentioned
above. For example, in such embodiments, the frozen dessert of
35 the present invention is not limited to one at 30 seconds after

being transferred from storage at -20°C to an environment at 25°C. Therefore, the frozen dessert of the present invention is not limited to a frozen dessert in a state actually under the above measurement conditions as long as it satisfies the above requirements when measured under the above conditions.

[0022]

The frozen dessert of the present invention may further comprise milk solids, fats, sweeteners, emulsifiers, stabilizers (thickening polysaccharides), flavorings, colorants, acidulants, coffee, tea, matcha, fruit juice, soymilk, eggs, water, and the like.

[0023]

Examples of milk solids include milk, fresh cream, butter, concentrated milk, concentrated skim milk, evaporated milk, sweetened condensed milk, sweetened condensed skim milk, whole milk powder, sweetened milk powder, skim milk powder, and the like. These milk solids can be used alone or in a combination of two or more. When these milk solids are blended, their content relative to the total amount of the frozen dessert is not limited and is, for example, 3 to 25 mass%, and preferably 10 to 15 mass%.

Examples of oils and fats include cacao-based ingredients, such as cocoa butter, cocoa powder, cacao mass, chocolate mass, and quasi-chocolate mass; and edible oils and fats. Examples of edible oils and fats include vegetable oils and fats, such as milk fat, shortening, margarine, olive oil, soybean oil, safflower oil, corn oil, sesame oil, sunflower oil, rapeseed oil, coconut oil, palm oil, palm kernel oil, and fractionated palm oil; and animal oils and fats, such as lard and fish oil.

These oils and fats can also be used alone or in a combination of two or more. When these oils and fats are blended, their content relative to the total amount of the frozen dessert is not limited and is, for example, 1 to 15 mass%, and preferably 3 to 10 mass%.

[0024]

Examples of sweeteners include stevia, aspartame,

sucralose, and acesulfame potassium. These sweeteners can also be used alone or in a combination of two or more. When these sweeteners are blended, their content relative to the total amount of the frozen dessert is not limited and is, for example,
5 0.005 to 0.05 mass%, and preferably 0.01 to 0.03 mass%.
[0025]

Examples of emulsifiers include nonionic surfactants, such as glycerin fatty acid esters, sucrose fatty acid esters, sorbitan fatty acid esters, and propylene glycol fatty acid
10 esters; and lecithin. These emulsifiers can also be used alone or in a combination of two or more. When these emulsifiers are blended, their content relative to the total amount of the frozen dessert is not limited and is, for example, 0.05 to 0.5 mass%, and preferably 0.1 to 0.3 mass%.
15 [0026]

Examples of stabilizers include starches, such as agar, gelatin, pectin, xanthan gum, tamarind seed gum, locust bean gum, guar gum, cellulose, carrageenan, karaya gum, gum arabic, psyllium seed gum, potato starch, corn starch, non-glutinous rice
20 starch, wheat starch, tapioca starch, waxy corn starch, and glutinous rice starch; heat-moisture treated starches; and modified starches. These stabilizers can also be used alone or in a combination of two or more. When these stabilizers are blended, their content relative to the total amount of the frozen dessert
25 is not limited and is, for example, 0.05 to 0.5 mass%, and preferably 0.1 to 0.3 mass%.
[0027]

As the colorants, known colorants that can be added to foods, such as annatto colors and carotene colors, can be widely
30 used. As the flavorings, known flavorings that can be added to frozen desserts can be widely used. As the acidulants, known acidulants that are added to frozen desserts can be widely used.
[0028]

Some embodiments of the present invention will be
35 described in more detail below with reference to Examples and

Comparative Examples; however, the present invention is not limited to the following Examples.

Examples

5 [0029]

Composition of Inulin Used

As inulin, molecules with a short chain length ("Short"), molecules with a medium chain length ("Medium"), and molecules with a long chain length ("Long") were used. The table
10 below shows the composition of sugar chains contained in each inulin (mass%).

[0030]

Table 1

	Long	Medium	Short
DP3	0.1%	4.2%	4.1%
DP4	0.1%	4.6%	4.5%
DP5	0.2%	4.8%	5.2%
DP6	0.2%	5.0%	5.7%
DP7	0.2%	4.8%	5.8%
DP8	0.2%	4.6%	5.8%
DP9	0.4%	4.2%	5.7%
DP10	0.8%	3.8%	5.3%
DP11	1.4%	3.5%	4.6%
DP12	1.9%	3.3%	4.0%
DP13	2.1%	3.0%	3.3%
DP14	2.4%	3.0%	2.7%
DP15	2.9%	3.1%	2.4%
DP16	2.9%	2.2%	2.0%
DP17	2.8%	1.6%	1.9%
DP18	2.7%	2.7%	2.7%
DP19 or more	78.5%	41.7%	34.3%
Total inulin amount	100.0%	100.0%	100.0%

15 [0031]

In the table, "DP3" means "inulin having 3

monosaccharide units." Similarly, "DP4" to "DP19" mean "inulin having 4 monosaccharide units" to "inulin having 19 monosaccharide units," respectively.

[0032]

5 Preparation of Ice Milk Containing 10 Mass% of Inulin

Ice milk samples were prepared by dissolving the ingredients at the mass ratio shown in the table below, followed by sterilization, homogenization, and cooling, and then adjusting the overrun to 80% with a freezer. As the inulin, the "Short" inulin, the "Medium" inulin, or the "Long" inulin was used.

[0033]

Table 2

Name of ingredients	Blending ratio
Inulin	10.0
Skim milk powder	7.0
fresh cream	6.5
Vegetable fats and oils	5.0
Reduced starch syrup	10.0
Sweetener (sucralose)	0.02
Emulsifier	0.2
Stabilizer (thickening polysaccharide)	0.2
Flavoring	0.1
Added water	61.0

[0034]

15 Preparation of Ice Milk Containing 20 Mass% of Inulin

Ice milk samples were prepared by dissolving the ingredients at the mass ratio shown in the table below, followed by sterilization, homogenization, and cooling, and then adjusting the overrun to 80% with a freezer. As the inulin, the "Short" inulin, the "Medium" inulin, or the "Long" inulin was used.

[0035]

Table 3

Name of ingredients	Blending ratio
Inulin	20.0
Skim milk powder	7.0
fresh cream	6.5
Vegetable fats and oils	3.0
Reduced starch syrup	5.0
Sweetener (sucralose)	0.02
Emulsifier	0.2
Stabilizer (thickening polysaccharide)	0.2
Flavoring	0.1
Added water	58.0

[0036]

Preparation of Ice Milk Containing 10 Mass% of Polydextrose

- 5 An ice milk sample was prepared by dissolving the ingredients at the mass ratio shown in the table below, followed by sterilization, homogenization, and cooling, and then adjusting the overrun to 80% with a freezer.

[0037]

10 Table 4

Name of ingredients	Blending ratio
Polydextrose	10.0
Skim milk powder	7.0
fresh cream	6.5
Vegetable fats and oils	5.0
Reduced starch syrup	10.0
Sweetener (sucralose)	0.02
Emulsifier	0.2
Stabilizer (thickening polysaccharide)	0.2
Flavoring	0.1
Added water	61.0

[0038]

Preparation of Ice Milk Containing 20 Mass% of Polydextrose

An ice milk sample was prepared by dissolving the ingredients at the mass ratio shown in the table below, followed by sterilization, homogenization, and cooling, and then adjusting the overrun to 80% with a freezer.

5 [0039]

Table 5

Name of ingredients	Blending ratio
Polydextrose	20.0
Skim milk powder	7.0
fresh cream	6.5
Vegetable fats and oils	3.0
Reduced starch syrup	5.0
Sweetener (sucralose)	0.02
Emulsifier	0.2
Stabilizer (thickening polysaccharide)	0.2
Flavoring	0.1
Added water	58.0

[0040]

Shrinkage Measurement 1

10 100 ml each of the ice milk samples containing 10 mass% of inulin prepared above were individually put into a hollow truncated conical cup having a height of 51 mm, an upper inner diameter of 70 mm, and a lower inner diameter of 58 mm such that the ice milk sample was in contact with the wall surface of the

15 cup. The cup was sealed with a lid, shaken at -25°C to -15°C, and stored for 30 days. Subsequently, the area of the gap between the cup and the ice milk sample at the top surface of the cup was measured using image analysis software ("WinROOF2021"). The same test was performed on the ice milk sample containing 20 mass% of

20 polydextrose as a positive control. The shrinkage rate for each ice milk sample was determined according to the following formula:

{[Area of a circle formed by the contact points between the plane including the top surface of the ice milk and the inner wall of

the cup] - [Area of the top surface of the ice milk after storage]}/[Area of the circle formed by the contact points between the plane including the top surface of the ice milk and the inner wall of the cup]

- 5 Fig. 1 is a set of photographs for explaining an overview of the shrinkage measurement. The results are shown in the table below.
[0041]

Table 6

	Shrinkage rate% (area ratio from the top surface)
10 mass% of the "Short" inulin	0
10 mass% of the "Medium" inulin	0
10 mass% of the "Long" inulin	10.5
20 mass% of polydextrose	0

- 10 [0042]

As is clear from the above results, the occurrence of shrinkage was observed with the use of the "Long" inulin; however, no shrinkage was observed with the use of the "Short" inulin or the "Medium" inulin.

- 15 [0043]

Shrinkage Measurement 2

- An ice milk sample was put in the container and stored, and shrinkage was measured in the same manner as described above, except that the ice milk sample containing 20 mass% of the
- 20 "Short" inulin was used. The results confirmed that the ice milk sample containing 20 mass% of the "Short" inulin achieved a shrinkage rate of 0%, although the inulin was used in an amount of 20 mass%, which was greater than that used in the Shrinkage Measurement 1. The results indicate that the "Short" inulin has a
- 25 particularly higher effect of suppressing shrinkage when blended in frozen desserts.

[0044]

Measurement of Hardness

- 100 ml each of the ice milk samples prepared above were
- 30 individually put into a hollow truncated conical container having a height of 51 mm, an upper inner diameter of 70 mm, and a lower inner diameter of 58 mm, and stored at -20°C for 30 days. After

storage, the ice milk samples in the containers were each transferred to an environment at 25°C, and measurement was initiated 30 seconds after the transfer using a texture analyzer (Shimadzu Corporation).

5 [0045]

Measurement conditions

- Upper jig: a cylindrical pressing jig (diameter: 5 mm; made of stainless steel);

10 - Lower jig: a lower compression plate (diameter: 200 mm; made of aluminum);

- Penetration speed: 1.0 mm/min;

- Penetration distance: 30 mm;

- The hardness was defined as the maximum stress (N) until the jig was inserted 30 mm into the sample.

15 The results are shown in the table below.

[0046]

Table 7

	Hardness (N)
10 mass% of the "Short" inulin	42.4
10 mass% of the "Medium" inulin	81.9
10 mass% of the "Long" inulin	155.9
10 mass% of polydextrose	74.3

[0047]

20 As shown above, the ice milk sample obtained by using the "Short" inulin or the "Medium" inulin enabled a significant reduction in hardness compared to the ice milk sample obtained by using the "Long" inulin. Among the "Short" inulin and the "Medium" inulin, the "Short" inulin achieved a more reduced
25 hardness and is thus preferable.

CLAIMS

[Claim 1]

A frozen dessert comprising inulin, wherein the proportion of molecules having 18 or more monosaccharide units in
5 the inulin is 50 mass% or less.

[Claim 2]

A frozen dessert comprising inulin, wherein the proportion of molecules having 3 to 13 monosaccharide units in
10 the inulin is 40 mass% or more.

[Claim 3]

The frozen dessert according to claim 1 or 2, wherein the frozen dessert has a carbohydrate content of 0 to 30.0 mass%.
15

[Claim 4]

The frozen dessert according to claim 1 or 2, wherein the frozen dessert has an inulin content of 3.0 to 30 mass%.

20 [Claim 5]

The frozen dessert according to any one of claims 1 to 4, wherein the frozen dessert has an overrun of 15% or more.

[Claim 6]

25 The frozen dessert according to claim 1 or 2, wherein the frozen dessert has a hardness of 100 or less as measured using a texture analyzer under the following measurement conditions:

the frozen dessert stored at -20°C in a container
30 having the following dimensions is transferred to an environment at 25°C, and the measurement is initiated 30 seconds after the transfer;

the container has a height of 51 mm, an upper inner diameter of 70 mm, and a lower inner diameter of 58 mm;

35 upper jig: a cylindrical pressing jig (diameter: 5 mm;

made of stainless steel);

lower jig: a lower compression plate (diameter: 200 mm;
made of aluminum);

penetration speed: 1.0 mm/min;

5 penetration distance: 30 mm; and

the hardness is defined as the maximum stress (N) until
the jig is inserted 30 mm into the sample.

[Claim 7]

10 The frozen dessert according to claim 1 or 2, wherein
the hardness of the frozen dessert is the same as or lower than
that of a frozen dessert produced in the same manner except that
the inulin is replaced with an equal amount of polydextrose.