

Specification

Title of the Invention: Water-in-Oil Emulsified Fat or Oil Composition for Roll-in

Technical Field

[0001]

The invention relates to a water-in-oil emulsified fat or oil composition for roll-in.

Background Art

[0002]

Layered cereal flour foods including croissants, Danish pastries, pies, etc. are often prepared by rolling, into dough, a water-in-oil emulsified fat or oil composition for roll-in. At that time, the number of folds is set by each company as desired, and Non-Patent Document 1 discloses that "Normally, it is standard that croissants or Danish pastries are folded in thirds three times". Namely, it makes 27 layers.

[0003]

Other than water-in-oil emulsified fat or oil compositions, there are layered cereal-flour foods into which so-called "flour sheets", "filling sheets", etc. are rolled. Flour sheets, etc. are often used with small numbers of folds as they are less plastic compared to water-in-oil emulsified fat or oil compositions, and if folded many times, they will not form proper layers, cracking or being kneaded into the dough, etc. For example, Patent Document 1 discloses an embodiment in which the flour paste formed into a sheet is used and folded into thirds twice (nine layers).

[0004]

Those known as flour sheets, filling sheets, etc. contain a lot of starch and moisture, and therefore, it is hard to obtain a layered cereal-flour food of a good volume, despite a small number of folds, and its texture may be hard or it may not melt smoothly in the mouth. On the other hand, they are advantageous in that the material rolled into each layer becomes thicker, remaining in lumps even after the baking, and gives more flavor.

[0005]

When using a water-in-oil emulsified fat or oil composition, if the number of folds is made small for the purpose of giving more flavor, layers of fat or oil become thick and may "peel", or so-called "oil-off", or a leak of oil at the time of baking tend to occur, which may cause reduction in workability or quality. In other words, there is no known advantage to folding layered cereal-flour foods less times with respect to a water-in-oil emulsified fat or oil composition for roll-in.

[0006]

A known Patent Document 2 discloses addition of egg albumen to materials to be rolled in. Claim 1 of this application generally discloses an oil-in-water emulsification fat or oil composition consisting essentially of egg albumen, a

dairy protein, fat or oil of 10% or more Solid Fat Content (SFC) at 15°C, a thickener, and water. With this formula, it is described therein that "the invention was developed upon finding that when rolled into a layered flour leavening food, the roll-in workability, flavor and texture thereof are enhanced." There, it is also described that the function of egg albumen is to improve the roll-in workability.

Prior Art Documents

Patent Document

[0007]

Patent Document 1: Japanese Unexamined Patent Application Publication No. 2006-129763

Patent Document 2: Japanese Unexamined Patent Application Publication No. 2010-220483

Non-Patent Document

[0008]

Non-Patent Document 1: *Yoshino, Seiichi, Pan "kotsu" no kagaku, 10th edition, SHIBATASHOTEN Co., Ltd., May 31, 2000*

Summary of the Invention

Problems to be Solved By the Invention

[0009]

One objective of the invention is to provide a layered cereal-flour food having non-conventional, new flavor or texture, and a water-in-oil emulsified fat or oil composition for roll-in therefor.

Means to Solve the Problems

[0010]

Upon diligent research, the inventors have found that a layered cereal-flour food product having non-conventional new flavor or texture is obtained by preparing a water-in-oil emulsified fat or oil composition for roll-in by adding proper amounts of fat or oil and a adhesive protein material, and by using the same for the layered cereal-flour food, especially when the number of folds is made small, and the aspects of the invention of claims 1-5 were developed.

[0011]

Although Patent Document 2 discloses materials to be rolled in containing egg albumen, however, it only describes that the egg albumen is added with a view to enhancing the workability, and no other advantageous effect is disclosed. Furthermore, Patent Document 2 relates to an oil-in-water type emulsion, and there is no disclosure about advantageous effects of egg albumen with respect to water-in-oil type emulsifications.

[0012]

The inventors have worked diligently aiming at a water-in-oil emulsified fat or oil composition that can give unconventional new flavor and texture. Our specific intention for the water-in-oil emulsified fat or oil compositions is because they have many benefits such as relatively longer time to the expiration date with

a relatively easy packaging, etc.

Accordingly, a water-in-oil emulsified fat or oil composition for roll-in was prepared by adding a proper amount of egg albumen, and by using the same for a layered cereal-flour food, no peeling of layers occurred and oil-off was improved with respect to the layered cereal-flour food, especially when the number of folds is small. It was found out that this layered cereal-flour food gives unconventional, new flavor and texture, and the aspects of claims 6-8 of the invention have been achieved.

[0013]

More specifically, the invention relates to:

(1) A water-in-oil emulsified fat or oil composition for roll-in comprising a 35-70 wt% fat or oil, and a 0.05-5 wt% adhesive protein material in terms of dry matter;

(2) The water-in-oil emulsified fat or oil composition for roll-in of (1), wherein the adhesive protein material is one or more selected from egg albumen, whey, and soybean protein material;

(3) The water-in-oil emulsified fat or oil composition for roll-in of (1) or (2), wherein a 5-50 wt% flavor material is contained;

(4) The water-in-oil emulsified fat or oil composition for roll-in of any one of (1)-(3), wherein it is for a layered cereal-flour food of 3-24 layers;

(5) A layered cereal-flour food comprising the water-in-oil emulsified fat or oil composition for roll-in of any one of (1)-(4), wherein the layered cereal-flour food has 3-24 layers;

(6) A water-in-oil emulsified fat or oil composition for roll-in comprising, a 0.05-5 wt% egg albumen in terms of dry matter;

(7) The water-in-oil emulsified fat or oil composition for roll-in of (6), wherein it comprises a 35-70 wt% fat or oil; and

(8) A layered cereal-flour food comprising the water-in-oil emulsified fat or oil composition for roll-in of (6) or (7).

Advantageous Effects of the Invention

[0014]

With the use of the water-in-oil emulsified fat or oil composition for roll-in of the invention, a layered cereal-flour food having more flavor and unconventional texture can be obtained.

Description of Embodiments

[0015]

Now, the invention will be explained in detail.

fat or oil used for the water-in-oil emulsified fat or oil composition for roll-in of the invention includes vegetable oils and fats including rapeseed oil, soybean oil, sunflower seed oil, cottonseed oil, peanut oil, rice bran oil, corn oil, safflower oil, olive oil, kapok oil, sesame oil, evening primrose oil, palm oil, sheaf butter, sal butter, cacao butter, coconut oil, palm kernel oil, etc.; animal fats and oils including butterfat, beef tallow, lard, etc.; and treated fats and oils prepared by giving one or more treatments selected from fractionation, hydrogenation, or transesterification to a single or mix of fats and oils above, and one or more fats

or oils can be selected and used as desired.

[0016]

The water-in-oil emulsified fat or oil composition for roll-in of the invention preferably contains 35-70 wt% of fat or oil, more preferably 37-65 wt%, and even more preferably 38-60 wt%. If the amount of fat or oil is too much, "oil-off" may occur in layered cereal-flour foods. If the amount of fat or oil is too little, emulsification may not be stabilized.

[0017]

Furthermore, the SFC of the fat or oil added in the water-in-oil emulsified fat or oil composition for roll-in of the invention is preferably 20-70 at 10°C and 5-35 at 30°C, more preferably 25-65 at 10°C and 7-30 at 30°C, and even more preferably 30-60 at 10°C and 10-25 at 30°C. If the SFC is too high, the fat or oil composition becomes hard and brittle showing a poor elasticity, and may not melt smoothly in the mouth. If the SFC is too low, it is hard to shape the fat or oil composition itself, and for not being hard enough, the fat or oil composition may be kneaded into dough when rolled in, or "oil-off" may occur at the time of fermentation.

[0018]

Adhesive protein materials used in the invention are made gel-like and adhesive like glue by addition of water. More specifically, it is preferable to use one or more selected from egg albumen, whey, and soybean protein material.

The egg albumen may be either liquid egg albumin or dry egg albumen, however, dry egg albumen is preferable for the sake of ease of handling. Furthermore, although a whole egg may be added, it is preferable to separately add egg albumen for a better anti-"peeling" effect.

[0019]

Whey or milk serum is a water solution remaining after butterfat, casein, etc. was extracted from milk. Here, milk is generally cow milk. With the invention, it may be used in a liquid form, however, it is preferable to use in a powdered form for better workability.

[0020]

Soybean protein materials include defatted soybean milk powder, produced by adding water to defatted soybeans and drying substances extracted therefrom, and isolated soybean protein. A commercially available defatted soybean milk powder is "Profit 1000", manufactured by Fuji Oil Co., Ltd., is desirable for use.

Among the above mentioned adhesive protein materials, the egg albumen is preferred in terms of its advantageous effects and flavor, and especially, egg albumen powder is preferable.

[0021]

The water-in-oil emulsified fat or oil composition for roll-in of the invention must contain 0.05-5 wt%, in terms of dry matter, of an adhesive protein material. This wt% is more preferably 0.07-2, and even more preferably 0.1-1. If the amount of adhesive protein material is too little, the function to prevent "peeling" and "oil-off" from occurring may not work to the fullest. If the amount of adhesive protein material is too much, the particular flavor of the protein material itself may be felt in the layered cereal-flour food.

[0022]

The water-in-oil emulsified fat or oil composition for roll-in of the invention preferably contains 0.05-5 wt%, in terms of dry matter, of egg albumen, and more preferably 0.07-2 wt%, and even more preferably 0.1-1 wt%. If the amount of adhesive protein material is too little, the function to prevent "peeling" and "oil-off" from occurring may not work to the fullest. If the amount of adhesive protein material is too much, an unintended flavor of the egg albumen itself may be felt in the layered cereal-flour food.

[0023]

The water-in-oil emulsified fat or oil composition for roll-in of the invention preferably contains 5-50 wt% of a flavor material, in order to have the same flavor-giving function as that of flour sheet, filling sheet, etc. As flavor materials, those used for commonly-used water-in-oil emulsified fat or oil compositions such as margarine, fat spread, etc., or ones called flour sheet, filling sheet, etc. may be used as desired. More specifically, they are sugars, cacao materials, caramel materials, nut pastes, processed fruits including juices, spices, and milk products, and combinations of those may be used as desired.

[0024]

The water-in-oil emulsified fat or oil composition for roll-in of the invention is preferably used for a layered cereal-flour food of the number of folds of 3-24, to fulfill its function. The number of folds is more preferably 3-18. If the number of folds is too small, the fat or oil layers become thick and therefor peeling of layers or "oil-off" at the time of baking tends to occur, and the layered cereal-flour food may not have enough volume, which accordingly reduces the workability or quality. If the number of folds is too large, the fat or oil composition may be kneaded into dough more easily, not forming enough layers.

[0025]

The water-in-oil emulsified fat or oil composition for roll-in of the invention may contain, as desired, a substance other than those described above, as long as it does not disturb the advantageous effects of the invention. For example, with the use of coloring substances, aesthetic benefits may be given to layered cereal-flour foods. Furthermore, polysaccharides including starch and dextrin; salts including sodium chloride, potassium chloride, etc.; and food materials or food additives including water, emulsifiers, antioxidants, flavorings, colorings, seasonings, sweeteners, pH adjusters, preservatives, life-improving agents, etc. may be used as desired.

[0026]

The method of preparing the water-in-oil emulsified fat or oil composition for roll-in of the invention may be a common method as described below.

In a prescribed formula, fat or oil and substances that dissolve in fat or oil, such as an oil-soluble emulsifier, are dissolved in fat or oil to obtain an oil phase. The oil phase shall be the state in which the fat or oil is completely dissolved. This depends on the melting point of the fat or oil, and it generally is 55-75°C.

On the other hand, in the prescribed formula, water is made a water phase, and substances that dissolve in water, such as a water-soluble flavor material, are mixed with water to obtain a water phase. Note that if the formula uses a

liquid sugar, etc. instead of water, water-soluble substances will be dissolved in or mixed with the liquid sugar.

[0027]

When the oil phase and the water phase are ready, the water phase is added to the oil phase, while the oil phase to obtain a water-in-oil type emulsification "preparation". At this time, if the oil phase is not stirred enough, or the temperature thereof is too low, the emulsification may convert, and therefore, the oil phase should be stirred enough, and the temperature thereof should be high enough.

[0028]

The preparation is sent by a pump, through a sterilize, etc. if necessary, to equipment for manufacturing water-in-oil emulsified fat or oil compositions. Just before being sent to the equipment for manufacturing water-in-oil emulsified fat or oil compositions, the preparation needs to be in a dissolved state, and its temperature needs to be 40-80°C, and more preferably 50-70°C, and even more preferably 55-65°C. If the temperature of the preparation right before being sent to the equipment for manufacturing water-in-oil emulsified fat or oil compositions is too low, a crystal of fat or oil may be formed at that stage, leaving granular crystals in end products. On the other hand, if the temperature is too high, the equipment for manufacturing of water-in-oil emulsified fat or oil compositions may require extra energy for cooling.

[0029]

The equipment for manufacturing water-in-oil emulsified fat or oil compositions may be any that has a cooling function. More specifically, they can be equipments provided with a scraped-surface tube cooler such as a Combinator, Perfector, Votator, etc. With the use of such equipment, the preparation is cooled to 3-15°C at 1-8°C/second at the outlet of the cooling equipment, for example. The cooling speed is more preferably 1-7°C/second, and even more preferably 1-5°C/second. If the cooling speed is too slow, granular crystals may be formed more easily, and if the cooling speed is too fast, more cooling energy may be unnecessarily required.

[0030]

After leaving the cooling equipment, the water-in-oil emulsified fat or oil composition is introduced into a resting tube, and molded into a sheet or block by a molding machine provided at the outlet of the resting tube. The size of the water-in-oil emulsified fat or oil composition for roll-in prepared in this way may be determined, as desired, according to the configuration of the molding machine. After the molding, the water-in-oil emulsified fat or oil composition for roll-in is refrigerated after packaging, filling, etc., and aged if necessary. Note that a refrigerating time of at least 24-48 hours or so may be required for a desired number of crystals.

[0031]

With the invention, cereal flour in relation to layered cereal-flour food is one or more of cereal flours selected from flour, rice powder, soy powder, corn-derived ingredients, potato starch, etc., and more preferably one or more selected from flour and rice powder, and even more preferably flour.

The method of preparing the layered cereal-flour food of the invention may be a common method described below. Now, the explanation will be made with layered flour food, the most common layered cereal-flour food, as an example.

[0032]

Firstly, a dough containing flour is thinly rolled out, and folded together with water-in-oil emulsified fat or oil composition for roll-in put thereon, the size and thickness of which are adjusted as desired. Next, the dough in which the fat or oil composition is wrapped is thinly rolled out, and folded. The final number of folds is determined by the number of folds and the number of repetitions here, and may be determined as desired. The folded dough is molded, and fermented if necessary, and then baked. Examples of layered flour food prepared in this way are Croissants, Danish pastries, and pies.

Furthermore, it is preferable to mold the dough into the shape of a bread loaf, in a pan for example, because the water-in-oil emulsified fat or oil composition for roll-in of the invention can be seen spreading throughout in the cut surface, in the shape of spirals.

[0033]

With the use of the water-in-oil emulsified fat or oil composition for roll-in of the invention, layered cereal-flour food having more flavor and unconventional texture can be obtained even when the number of folds is as small as 3-24, without compromise in workability and quality such as "peeling" of layers or "oil-off", which is experienced when a conventional water-in-oil emulsified fat or oil composition for roll-in is used. Furthermore, even the 27 layers, which is a common number of folds for croissants or Danish pastries, can provide layered cereal-flour food that provides the same workability and quality as those of conventional water-in-oil type emulsified fat or oil compositions for roll-in. The examples are explained below.

Examples

[0034]

Test 1

<Consideration on fat or oil Content in Water-in-Oil Emulsified fat or oil Composition for Roll-in>

Example 1 and Comparative Examples 1-3

With the formula of Table 1, a water-in-oil type emulsion was prepared, as a preparation, to contain transesterification oil (of the melting point of 34°C), soybean oil, emulsifier as oil phases, and the other ingredients as water phases. Furthermore, a water-in-oil emulsified fat or oil composition for roll-in was prepared in the shape of a sheet with use of a scraped-surface tube cooler, or "Combinator", a resting tube, and a molding machine. Note that the cooling was carried out in such a way that the temperature of the outlet of the scraped-surface tube cooler was 10°C, and the molding machine was selected to obtain the sheet thickness of 1 cm.

The prepared fat or oil composition was packaged in polyethylene film, packed in a cardboard box, and then stored in a refrigerator at 5°C for 48 hours.

[0035]

Table 1 Formula 1 of Water-in-Oil Emulsified fat or oil Composition For Roll-in

	Comparative Example 1	Comparative Example 2	Comparative Example 3	Example 1
Transesterification Oil	69.5	45	30	35
Soybean Oil	13.5	15	11	10
(Total Oil Content)	83	60	41	45
Liquid Sugar		35	32	32
Emulsifier, Flavoring	1	1	1	1
Egg Albumen Powder				0.5
Water	16	4	26	21.5
Total	100	100	100	100

The egg albumen powder used was Ranpaku Funmatsu from Taiyo Chemical Industry Co., Ltd. Its moisture content is 5.4 wt%.

[0036]

Test 2

<Test Baking of Water-in-Oil Emulsified fat or oil Composition for Roll-in Obtained in Test 1>

Example 2 and Comparative Examples 4-6

The Test baking was carried out with the use of the water-in-oil emulsified fat or oil composition for roll-in obtained in Test 1.

The formula of the dough was as in Table 2.

The conditions for preparation of the dough, and folding of the fat composition to be rolled in were as in Table 3.

[0037]

Table 2 Formula for Dough for Test Baking

Ingredients	Amount (%)
Hard Flour	90
Soft Flour	10
Yeast	4
Yeast Food	0.1
Superfine Sugar	15
Salt	1.5
Powdered Skim Milk	2
Whole Egg	12
Shortening	10
Water	44

Note: Except for the flours, the values represent relative percentages calculated by taking the amount of flours as 100.

[0038]

Table 3 Conditions for Preparation of Dough, etc.

Process Conditions

Mixing Time	1. 2 mins ↓ 1. 3 mins M 5 mins
Kneading Temperature	26°C
First Rising	30 mins
Rising Chamber	27°C /75%
Temperature/Humidity	
Division Weight	Large
1st Retarding Time	40-60 mins at -20°C
Number of Folds	Fold in Thirds Twice (Total 9 Layers)
2nd Retarding Time	Overnight at -6°C
Molding Method	See the essential points below.
Final Rising Time	60 mins
Final Rising Chamber	35°C/75%
Temperature/Humidity	
Baking Temperature	Upper Fire 205°C
	Lower Fire 190°C
Baking Time	13 mins
Essential Points of Preparing Method	
After Rolling Out To The Final Thickness of 7 mm,	
cut into 150 mm × 400 mm.	
Konjac-mold, before final rise.	

(Note) "Konjac molding " is a way of molding in which, after cutting the dough into 150 mm × 40 mm slices, a cut is longitudinally made in the center of each slices, and then, one longitudinal end thereof is put into the cut, and the whole slice is gently pressed to finish the shaping. Here, the cut is longitudinally made 2-3 cm away from both ends, and one of them is put into the cut twice. After putting the end into the cut, the dough slice is pressed to close the cut and finish the shaping.

[0039]

Evaluation Method

<Oil-off Measurement Method>

1. A dough for the test baking, in which the water-in-oil emulsified fat or oil composition for roll-in was rolled in, is rolled out to the final dough thickness of 12 mm, and cut out with a round cutter of the diameter of 7 cm. (45±1g)

2. The cut-out doughs are placed on a baking paper (Mfd. by Daishowa Paper Products Company) on a pan, 10 cm or more away from one another, and risen (at 27°C and the humidity of 75%).

3. After being risen for 60 mins, baked at 210°C for 8 mins in an oven.

4. After the baking, the (largest) diameter of oil stains on the baking paper is measured. If it is 7.3 cm or smaller, the result is Pass.

[0040]

<Layer-peeling Evaluation Method>

1. Baking is carried out under the same conditions as those applied for the oil-off measurement method.

2. After the baking, peeling of layers is visually evaluated on a scale of 1 to 5.
Rating 4 or higher is Pass.

1: The peeling is very severe, and the shape is lost.

2: The peeling is severe, and the volume is small.

3: Some peeling is seen, and the shape differs between pieces.

4: A little peeling is seen but the shape is good.

5: Almost no peeling and the shape is very good.

The results are present in Table 4.

[0041]

Table 4 Results of Test Baking

	Comparative Example 4	Comparative Example 5	Comparative Example 6	Example 2
Used fat or oil Composition Sheet	Comparative Example 1	Comparative Example 2	Comparative Example 3	Example 1
Oil-off Measurement Result (cm)	9.2	7.8	7.4	7
Oil-off Result	Fail	Fail	Fail	Pass
Visual Evaluation of Layer Peeling	1	3	2	5
Peeling Result	Fail	Fail	Fail	Pass
Final Result	Fail	Fail	Fail	Pass

[0042]

As seen from Table 4, the layered cereal-flour foods of the number of folds of 3-24, using fat or oil compositions for roll-in having oil contents higher than 70 wt%, had problems of oil-off, etc. To deal with that, the fat or oil was merely decreased to 35-70 wt%, however, the level of improvement of the problems was limited. On the other hand, the problems were solved by adding an adhesive protein material.

[0043]

Test 3

<Consideration on Egg Albumen Content in Water-in-Oil Emulsified fat or oil Composition for Roll-in>

Examples 3-6

A water-in-oil emulsified fat or oil composition for roll-in was prepared according to the formula of Table 5. The preparation method was the same as that of Test 1.

[0044]

Table 5 Formula 2 of Water-in-Oil Emulsified fat or oil Composition for Roll-in

	Example 3	Example 4	Example 5	Example 6
Transesterification Oil	37	32.7	32.7	30
Soybean Oil	12.5	10	10	11
(Total Oil Content)	49.5	42.7	42.7	41
Liquid Sugar	31	31	31	31
Emulsifier, Flavoring	1	1	1	1
Egg Albumen Powder	0.1	0.2	0.3	0.5
Water	18.4	25.1	25	26.5
Total	100	100	100	100

[0045]

Test 4

<Test Baking of Water-in-Oil Emulsified fat or oil Composition for Roll-in Obtained in Test 3>

Examples 7-10

The Test baking was carried out using the water-in-oil emulsified fat or oil composition for roll-in obtained in Test 3.

The test baking method and evaluation method were the same as those of Test 2.

Results

The results are presented in Table 6.

[0046]

Table 6 Results of Test Baking

	Example 7	Example 8	Example 9	Example 10
Used fat or oil Composition Sheet	Example 3	Example 4	Example 5	Example 6
Oil-off Measurement Result (cm)	7	7	7.1	7
Oil-off Result	Pass	Pass	Pass	Pass
Visual Evaluation of Layer Peeling	5	5	5	5
Peeling Result	Pass	Pass	Pass	Pass
Final Result	Pass	Pass	Pass	Pass

[0047]

As seen from Table 6, by adding a proper amount of egg albumen powder to the water-in-oil emulsified fat or oil composition for roll-in, good Danish pastries,

of the small number of folds, were obtained without peeling, etc.

[0048]

Test 5

<Consideration on Other Adhesive Proteins in Water-in-Oil Emulsified fat or oil Composition for Roll-in>

Examples 11-13

A water-in-oil emulsified fat or oil composition for roll-in was prepared according to the formula of Table 7. The preparation method was the same as that of Test 1.

[0049]

Table 7 Formula 3 for Water-in-Oil Emulsified fat or oil Composition for roll-in

	Example 11	Example 12	Example 13
Transesterification Oil	37	37	37
Soybean Oil	10	12.5	12.5
(Total Oil Content)	45	49.5	49.5
Liquid Sugar	32	31	31
Emulsifier,	1	1	1
Flavoring			
Whey Powder		0.5	1.5
Defatted Soybean Milk Powder	1		
Water	21	18	17
Total	100	100	100

• The whey powder is WPC-80 (89.9 wt% solid content) manufactured by Warrnambool Cheese & Butter Pty. Ltd.

• The defatted soybean milk powder is "Profit 1000"(93.5 wt% solid content) manufactured by Fuji Oil Co., Ltd.

[0050]

Test 6

<Test Baking of Water-in-Oil Emulsified fat or oil Compositions for Roll-in Obtained in Test 5>

Examples 14-16

The test baking was carried out using the water-in-oil emulsified fat or oil composition for roll-in obtained in Test 5.

The test baking method and evaluation method were the same as those of Test 2.

Results

The results are presented in Table 8.

[0051]

Table 8 Test Baking Results

	Example 14	Example 15	Example 16
Used fat or oil	Example 11	Example 12	Example 13

Composition Sheet			
Oil-off Measurement Result (cm)	7.2	7.2	7.3
Oil-off Result	Pass	Pass	Pass
Visual Evaluation of Layer Peeling	4.5	4.5	4.5
Peeling Result	Pass	Pass	Pass
Final Result	Pass	Pass	Pass

[0052]

As seen from Table 8, by adding a proper amount of defatted soybean milk powder or whey protein to the water-in-oil emulsified fat or oil composition for roll-in, instead of egg albumen, good Danish pastries of the small number of folds are obtained without peeling, etc.

Conventionally, especially if the number of folds is small, layered cereal-flour foods using water-in-oil emulsified fat or oil composition for roll-in was not considered edible, because of peeling of layers or severe oil-off. But here, the water-in-oil emulsified fat or oil composition for roll-in of the invention allowed for layered cereal-flour food products of small number of folds, with less peeling or oil-off. Furthermore, such layered cereal-flour foods had non-conventional, entirely different, new texture.

Industrial Applicability

[0053]

With the use of the water-in-oil emulsified fat or oil composition for roll-in of the invention, it is possible to prepare a new layered cereal-flour food having unconventional, good texture, in addition to the merits of conventional water-in-oil emulsified fat or oil composition for roll-in and flour sheets.

Claims:

[Claim 1]

A layered cereal-flour food using the water-in-oil emulsified fat or oil composition for roll-in comprising a 35-70 wt% fat or oil, and a 0.05-5 wt% adhesive protein material in terms of dry matter, wherein the adhesive protein material is one or more selected from egg albumen, whey, and soybean protein material, further wherein the layered cereal-flour food has 3-24 layers.