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WATER-IN-OIL TYPE EMULSIFYING COMPOSITION TO BE ROLLED IN

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BACKGROUND OF THE INVENTION

Field of the Invention

The present invention relates to a water-in-oil type emulsifier composition to be rolled in, more particularly, to a water-in-oil type emulsifier composition to be rolled in, suitable for production of layered and risen wheat foods, such as pies and Danish pastries, and layered and risen wheat foods produced with the described water-in-oil type emulsifier composition.

Description of Related Art

15 The properties of a water-in-oil type emulsifier composition to be rolled in, which is used to produce layered and risen wheat foods, such as Danish pastries or pies, are far different from that required for use of filling and kneading. Taking the example of the production of Danish pastries, during a rolling-in procedure, a dough, cooled to about 0°C, is stretched with a warpping seater to provide a folded layer. Typically, in the rolling-in procedure, the dough becomes soft with a rise of temperature. As a result, a retard is obtained to regulate the hardness of the dough. Also, in order to allow the water-in-oil type emulsifier composition to be rolled in everywhere, and baked products to be provided with beautiful inner layers, it is required by the operator that the dough should have certain strength in extensibility and elasticity at low temperature.

25 In recent years, the authentic layered and risen wheat foods, such as Danish pastries or pies, which are produced by using butter or fermented butter as water-in-oil type emulsifier composition to be rolled in absolutely, are very popular, and it should be mentioned that, they represent the image of the store. However, for butter or fermented butter, in case of unskilled handling with rigidity likely varying with temperature, or in case of intending to produce with the equipments for mass production line and the like, nonuniformity occurs in the inner layers of the baked products, so the texture of lightness and brittleness inherent to pies and Danish pastries are significantly



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damaged. As a result, there are many cases in which the value of the commodity is lost, and butter or fermented butter is unworkable in industry. In addition, since butter and fermented butter are expensive in themselves, there is a disadvantage of making the baked products expensive when they are used.

5 In view of the issues described above, in order to industrially provide layered and risen wheat foods with excellent flavor of butter and fermented butter, the so-called compound type of water-in-oil type emulsifier composition to be rolled in is used, which is butter, fermented butter, butter oil, fermented butter oil, fractionated butter oil and so on, mixed with edible oils and fats, emulsifier, and aqueous raw material.

10 However, in order to impart the optimum handling properties to the previous compound type of water-in-oil type emulsifier composition to be rolled in, the oils and fats with poor oral dissolution and high rising melting point are mostly used as part of the edible oils and fats. As a result, the object to exert the flavor features of butter, fermented butter, butter oil, fermented butter oil and fractionated butter oil in the
15 maximum limit without damaging the oral dissolution feeling and juicy texture of the baked products produced with the water-in-oil type emulsifier composition with increased rising melting point of oil phase can't be achieved.

There are several inventions about the previous compound type of water-in-oil type emulsifier composition to be rolled in. In patent documentation 1, a margarine, which
20 uses the stearine fraction obtained by fractionating butter fat, is disclosed. In patent documentation 2, a oils and fats composition to be rolled in is disclosed, characterized by containing ester exchanged-oils and fats C and milk fat, wherein the oils and fats C described is obtained by mixing fat A, with iodine value of less than 10 and constituent fatty acids with carbon number of more than 18 comprising more than 80 wt% of all the
25 constituent fatty acids, and fat B, with iodine value of less than 20 and constituent fatty acids with carbon number of less than 14 comprising more than 60 wt% of all the constituent fatty acids, in a weight ratio of fat A/fat B = 10/90–90/10, then performing random ester exchange. In patent documentation 3, a plastic oils and fats composition is disclosed, characterized in that in the oil phase were comprised 5-90 wt% of one or
30 more kinds of oils and fats (A) selected from milk fat and fractionated oil thereof, and more than 20 wt% of triglyceride having a constituent fatty acid being H (saturated fatty acid with carbon number more than 16) at the 2-position, wherein the weight ratio of the

fats and oils (A) to (B) is regulated so as to satisfy the formula $[\text{fat and oil (A)}]/[\text{fat and oil (B)}]$ is greater than or equal to 0.2.

However, any of the inventions described above is not enough due to failure to have the juicy texture provided by the milk-origin fats to be sufficiently exerted.

5 Patent documentation 1: JP2000-166469A

Patent documentation 2: JP2002-253117A

Patent documentation 3: JP2003-3194A

SUMMARY OF THE INVENTION

10 Accordingly, an object of the present invention is to provide a water-in-oil type emulsifier composition to be rolled in, which is used for producing layered and risen wheat foods, such as pies and Danish pastries, can enrich the juicy texture inherent to a milk-origin fats, such as butter, fermented butter, butter oil, fermented butter oil, and fractionated butter oil without damaging the same, is excellent in handling properties,
15 and can produce baked products with beautiful inner layers.

As a result of the intensive study of the present inventors, it has been found that, a water-in-oil type composition to be rolled in containing particular oils and fats in the oil phase, and in case of the composition having a particular rising melting point, thus the issues described above can be solved, and the present invention is achieved.

20 Namely, in the first aspect of the present invention, it is directed to providing a water-in-oil type emulsifier composition to be rolled in comprising 20-40 wt% of milk-origin fat, 20-35 wt% of a fat occurring as liquid oil at 20°C, and 20-45 wt% of hardened palm oil. In the second aspect of the present invention, it is directed to providing a water-in-oil type emulsifier composition to be rolled in according to the first
25 aspect, wherein, in the fatty acids constituting the hardened palm oil, stearic acid/ (stearic acid + elaidic acid) ≤ 0.40 . In the third aspect of the present invention, it is directed to providing a water-in-oil type emulsifier composition to be rolled in according to the first or the second aspect of the present invention, wherein the rising melting point of oil phase of the water-in-oil type emulsifier composition to be rolled in
30 is from 28°C to 35°C. In the fourth aspect of the present invention, it is directed to providing a water-in-oil type emulsifier composition to be rolled in according to any one of claims 1 to 3, wherein the content of oil is from 85wt% to 95wt%. In the fifth

aspect of the present invention, it is directed to providing layered and risen wheat foods, which are produced with the water-in-oil type emulsifier composition to be rolled in described above.

According to the present invention, a water-in-oil type emulsifier composition is provided, which can enrich the juicy texture inherent to a milk-origin fats such as butter, fermented butter, butter oil, fermented butter oil and fractionated butter oil without damaging the same, can produce layered and risen wheat foods, such as Danish pastries and pies, is excellent in handling properties, can produce baked products with beautiful inner layers.

It is to be understood that both the foregoing general description and the following detailed description are exemplary, and are intended to provide further explanation of the invention as claimed.

DESCRIPTION OF EMBODIMENTS

The oils and fats material used in the water-in-oil type emulsifier composition to be rolled in according to the present invention include, for example, vegetable oils and fats, such as colza oil, soybean oil, sunflower seed oil, cottonseed oil, peanut oil, rice bran oil, corn oil, safflower oil, olive oil, kapok seed oil, sesame oil, evening primrose oil, palm oil, shea butter, sal butter, cacao butter, coconut oil, and palm kernel oil; animal oils and fats, such as milk fat, beef fat, lard, fish oil, and train oil, alone or in combination, or the processed oils and fats obtained by hardening, fractionating, and easter exchanging the oils and fats described above.

The water-in-oil type emulsifier composition to be rolled in according to the present invention must comprise 20-40 wt% of milk-origin fat, 20-35 wt% of a fat occurring as liquid oil at 20°C, and 25-45 wt% of hardened palm oil. When the content of the oils and fats described above doesn't meet the requirements, the juicy texture provided by milk-origin fats would be impaired, and the handling properties would be poor when rolling in, so it is hard to give the baked products with beautiful inner layers.

The milk-origin fats include, for example, butter, fermented butter, butter oil, fermented butter oil, or processed butter oil produced through one or more of the procedures including hardening, fractionation, and easter exchange, from butter oil and

fermented butter oil.

The water-in-oil type emulsifier composition to be rolled in according to the present invention must comprise a fat occurring as liquid oil at 20°C. Generally, the a fat occurring as liquid oil at 20°C is the one with SFC less than 5, which is determined
5 according to AOCS Official Method, fifth Edition, Cd16-81, at 20°C, for example, colza oil, soybean oil, sunflower seed oil, cottonseed oil, peanut oil, rice bran oil, corn oil, safflower oil, olive oil, kapok seed oil, sesame oil, evening primrose oil, alone or in combination, or the processed oils and fats obtained by hardening, fractionating, and ester exchanging these oils and fats.

10 The hardened palm oil contained in the water-in-oil type emulsifier composition to be rolled in according to the present invention, for example, may be obtained by fractionating palm oil, and hardening the resulted low melting point fraction. In the fatty acids constituting the oils and fats described, the ratio of stearic acid to (stearic acid + elaidic acid) is preferably 0.40 or less than 0.40, more preferably 0.25 or less
15 than 0.25. The larger values are not preferable, due to the poor in oral dissolution feeling of the oils and fats and impaired juicy texture of the layered and risen wheat foods produced by using the water-in-oil type emulsifier composition to be rolled in comprising the oils and fats described.

The rising melting point of the oil phase of the water-in-oil type emulsifier
20 composition to be rolled in according to the present invention is from 28°C to 35°C, preferably 29-33°C. The content lower than lower limit is not preferable, since in this case, the water-in-oil type emulsifier composition would become soft, thus the viscosity is lost, and in the handling properties degraded. The content higher than upper limit is not preferable, since the juicy texture provided by milk-origin fats would hard to
25 achieve in the baked products in this case.

The content of oil of the water-in-oil type emulsifier composition to be rolled in according to the present invention is preferably from 85 to 95 wt%. The content lower than lower limit is not preferable, since it is hard to achieve the juicy texture provided by the milk-origin fats. The content higher than upper limit is not preferable, since the
30 appropriate handling properties is impaired when rolling in.

An emulsifier is optionally added into the water-in-oil type emulsifier composition according to the present invention. The emulsifiers include, for example, sucrose fatty

acid ester, glycerin fatty acid ester, polyglycerin fatty acid ester, polyglycerol condensation ricinoleic acid ester, sorbitan fatty acid ester, polyoxyethylene sorbitan fatty acid ester, propylene glycol fatty acid ester, and organic acid monoglycerides, such as, acetic acid monoglyceride, tartaric acid monoglyceride, acetic acid tartaric acid mixed monoglyceride, citric acid monoglyceride, diacetyl tartaric acid monoglyceride, lactic acid monoglyceride, succinylated monoglyceride, and malic acid monoglyceride, and calcium stearoyl lactylate, sodium stearoyl lactylate, and lecithin are enumerated.

In addition to the materials and additives described above, oil-soluble components, such as, pigment, antioxidant, and flavor, and water-soluble components, such as, table salt, saccharides, milk powder, and fermented milk, are optionally used.

There is no particularly restriction in the production method of the water-in-oil type emulsifier composition to be rolled in according to the present invention, and the composition can be produced in a common manner by pre-emulsifying an oil phase with a water phase, then quenching and kneading with a quenching machine, such as Perfecter, Votator, and Combinator. The oil phase is formulated by optionally adding and dissolving/dispersing oil-soluble components, such as pigment, antioxidant, and flavor, into the melting oils and fats. The water phase is formulated by adding and dissolving/dispersing water-soluble components, such as milk and optional table salt, saccharides and inorganic salts, into water or warm water.

The layered and risen wheat foods according to the present invention are provided by the following steps: firstly, stretching a dough comprising wheat flour to be thin, and then, placing the water-in-oil type emulsifier composition thereon, followed by folding and stretching to be thin again, repeating the steps described above, finally, baking the dough. The specific examples of the layered and risen wheat foods include Danish pastries, croissant and pies.

Embodiments

The present invention will be described in more detail through exemplification of the embodiments according to the present invention. However, the spirit of the present invention is not limited by the following embodiment. In addition, percent and parts in the examples are based on weight.

Experimental example 1

30 parts of butter, 37 parts of hardened palm oil A (produced by fractionating palm

oil and hardening the resulted fraction with low melting point; the rising melting point of 38°C, stearic acid/(stearic acid + elaidic acid) = 0.17), and 28 parts of melted material of soybean oil were mixed with a solution of 1 part of table salt dissolved in 4 parts of water at 50°C and agitated to pre-emulsify, and quenched and kneaded with Combinator
5 quenching machine, to obtain the water-in-oil type emulsifier composition to be roll in of the Experimental example 1 with good constitution. The rising melting point of oil phase of the obtained water-in-oil type emulsifier composition is 31°C. In addition, the milk-origin fats contained in the water-in-oil type emulsifier composition is 25 wt%. Moreover, the content of oil in the water-in-oil type emulsifier composition is 90 wt%.

10 These results are summarized in table 1.

Experimental example 2

It was performed in accordance with Experimental example 1, except for 45 parts in place of 30 parts of butter, 31 parts in place of 37 parts of hardened palm oil A, 21 parts in place of 28 parts of soybean oil, 2.5 parts in place of 4 parts of water, and 0.5
15 parts in place of 1 part of table salt in Experimental example 1, to obtain the water-in-oil type emulsifier composition to be rolled in of Experimental example 2 with good constitution. The rising melting point of oil phase of the obtained water-in-oil type emulsifier composition is 31°C. In addition, the milk-origin fats contained in the water-in-oil type emulsifier composition are 38 wt%. Moreover, the content of oil in
20 the water-in-oil type emulsifier composition is 90 wt%. These results are summarized in table 1.

Experimental example 3

It was performed in accordance with Experimental example 1, except for 43 parts of hardened palm oil B (the rising melting point of 35°C, stearic acid/(stearic acid +
25 elaidic acid) = 0.14) and 22 parts of soybean oil (total of 65 parts) in place of 37 parts of hardened palm oil A and 28 parts of soybean oil (total of 65 parts) in Experimental example 1, to obtain the water-in-oil type emulsifier composition to be rolled in of Experimental example 3 with good constitution. The rising melting point of oil phase of the obtained water-in-oil type emulsifier composition is 32°C. In addition, the fast
30 derived from milk contained in the water-in-oil type emulsifier composition are 25 wt%. Moreover, the content of oil in the water-in-oil type emulsifier composition is 90 wt%. These results are summarized in table 1.

Experimental example 4

It was performed in accordance with Experimental example 1, except for 33 parts of hardened palm oil C (the rising melting point of 40°C, stearic acid/(stearic acid + elaidic acid) = 0.30) and 32 parts of soybean oil (total of 65 parts) in place of 37 parts of hardened palm oil A and 28 parts of soybean oil (total of 65 parts) in Experimental example 1, to obtain the water-in-oil type emulsifier composition to be rolled in of Experimental example 4 with good constitution. The rising melting point of oil phase of the obtained water-in-oil type emulsifier composition is 34°C. In addition, the milk-origin fats contained in the water-in-oil type emulsifier composition are 25 wt%. Moreover, the content of oil in the water-in-oil type emulsifier composition is 90 wt%. These results are summarized in table 1.

The formulae and results of Experiments 1 to 4 are summarized in table 1.

Table 1:

	Experimental example 1	Experimental example 2	Experimental example 3	Experimental example 4
Butter	30	45	30	30
Hardened palm oil A	37	31	—	—
Hardened palm oil B	—	—	43	—
Hardened palm oil C	—	—	—	33
Soybean oil	28	21	22	32
Water	4	2.5	4	4
Table salt	1	0.5	1	1
Melting point (°C)	31	31	32	34
Content of oil (wt%)	90	90	90	90

Comparative experimental example 1

It was performed in accordance with Experimental example 1, except for 25 parts in place of 37 parts of hardened palm oil A, and 40 parts in place of 28 parts of soybean oil in Experimental example 1, to obtain the water-in-oil type emulsifier composition to be rolled in of Comparative Experimental example 1 with good constitution. The rising melting point of oil phase of the obtained water-in-oil type emulsifier

composition is 28°C. In addition, the milk-origin fats contained in the water-in-oil type emulsifier composition are 25 wt%. Moreover, the content of oil in the water-in-oil type emulsifier composition is 90 wt%. These results are summarized in table 2.

5 Comparative experimental example 2

It was performed in accordance with Experimental example 1, except for 50 parts in place of 37 parts of hardened palm oil A and 15 parts in place of 28 parts of soybean oil in Experimental example 1, to obtain the water-in-oil type emulsifier composition to be rolled in of Comparative experimental example 2 with good constitution. The rising melting point of oil phase of the obtained water-in-oil type emulsifier composition is 35°C. In addition, the milk-origin fats contained in the water-in-oil type emulsifier composition are 25 wt%. Moreover, the content of oil in the water-in-oil type emulsifier composition is 90 wt%. These results are summarized in table 2.

15 Comparative experimental example 3

It was performed in accordance with Experimental example 1, except for 37 parts of hardened palm oil D (the rising melting point of 36°C, stearic acid/(stearic acid + elaidic acid) = 0.67) in place of 37 parts of hardened palm oil A in Experimental example 1, to obtain the water-in-oil type emulsifier composition to be rolled in of Comparative experimental example 3 with good constitution. The rising melting point of oil phase of the obtained water-in-oil type emulsifier composition is 31°C. In addition, the milk-origin fats contained in the water-in-oil type emulsifier composition are 25 wt%. Moreover, the content of oil in the water-in-oil type emulsifier composition is 90 wt%. These results are summarized in table 2.

25 Comparative experimental example 4

It was performed in accordance with Experimental example 1, except for 45 parts of hardened colza oil (the rising melting point of 35°C), 20 parts of soybean oil in place of 37 parts of hardened palm oil A, and 28 parts of soybean oil in Experimental example 1, to obtain the water-in-oil type emulsifier composition to be rolled in of Comparative experimental example 4 with good constitution. The rising melting point of oil phase of the obtained water-in-oil type emulsifier composition is 31°C. In addition, the milk-origin fats contained in the water-in-oil type emulsifier composition are 25 wt%.

Moreover, the content of oil in the water-in-oil type emulsifier composition is 90 wt%. These results are summarized in table 2.

Comparative experimental example 5

It was performed in accordance with Experimental example 1, except for 33 parts in place of 37 parts of hardened palm oil A, 25 parts in place of 28 parts of soybean oil, and 11 parts in place of 4 parts of water in Experimental example 1, to obtain the water-in-oil type emulsifier composition to be rolled in of Comparative experimental example 5 with good constitution. The rising melting point of oil phase of the obtained water-in-oil type emulsifier composition is 31°C. In addition, the milk-origin fats contained in the water-in-oil type emulsifier composition are 25 wt%. Moreover, the content of oil in the water-in-oil type emulsifier composition is 83 wt%. These results are summarized in table 2.

Comparative experimental example 6

It was performed in accordance with Experimental example 1, except for 37 parts of palm oil A in place of hardened palm oil (the rising melting point of 38°C) in Experimental example 1, to obtain the water-in-oil type emulsifier composition to be rolled in of Comparative experimental example 6, which is unwanted due to with the deteriorative constitution and insufficient extensibility. The rising melting point of oil phase of the obtained water-in-oil type emulsifier composition is 33°C. In addition, the milk-origin fats contained in the water-in-oil type emulsifier composition are 25 wt%. Moreover, the content of oil in the water-in-oil type emulsifier composition is 90 wt%. These results are summarized in table 2.

The formulae and results of Comparative experimental examples 1 to 6 are summarized in table 2

Table 2

	Comparative experimental example 1	Comparative experimental example 2	Comparative experimental example 3	Comparative experimental example 4	Comparative experimental example 5	Comparative experimental example 6
Butter	30	30	30	30	30	30
Palm oil	—	—	—	—	—	37
Hardened palm	25	50	—	—	33	—

oil A						
Hardened palm oil D	—	—	37	—	—	—
Hardened colza oil	—	—	—	45	—	—
Soybean oil	40	15	28	20	25	28
water	4	4	4	4	11	4
Table salt	1	1	1	1	1	1
Melting point (°C)	28	35	31	31	31	33
Content of oil (wt%)	90	90	90	90	83	90

Then, the croissant was baked with the formulae in table 3 and production conditions in table 4 by using the water-in-oil type emulsifier composition to be rolled in, and the handling properties when rolling in, the inner layers, flavor and juicy texture of the baked products were evaluated.

Table 3

	Embodi- ment 1	Embodi- ment 2	Embodi- ment 3	Embodi- ment 4	Compa- rative 1	Compa- rative 2	Compa- rative 3	Compa- rative 4	Compa- rative 5
Strong flour	100	100	100	100	100	100	100	100	100
Granulated sugar	8	8	8	8	8	8	8	8	8
Table salt	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
Defatted milk powder	3	3	3	3	3	3	3	3	3
Whole egg	8	8	8	8	8	8	8	8	8
Shortening	5	5	5	5	5	5	5	5	5
yeast	3	3	3	3	3	3	3	3	3
yeast food	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Water	51	51	51	51	51	51	51	51	51
Water-in-oil type emulsifier composition to be rolled in	60	—	—	—	—	—	—	—	—

from Experimental example 1									
Water-in-oil type emulsifier composition to be rolled in from Experimental example 2	—	60	—	—	—	—	—	—	—
Water-in-oil type emulsifier composition to be rolled in from Experimental example 3	—	—	60	—	—	—	—	—	—
Water-in-oil type emulsifier composition to be rolled in from Experimental example 4	—	—	—	60	—	—	—	—	—
Water-in-oil type emulsifier composition to be rolled in from Comparative experimental example 1	—	—	—	—	60	—	—	—	—
Water-in-oil type emulsifier composition to be rolled in from Comparative experimental example 2	—	—	—	—	—	60	—	—	—
Water-in-oil type emulsifier	—	—	—	—	—	—	60	—	—

composition to be rolled in from Comparative experimental example 3									
Water-in-oil type emulsifier composition to be rolled in from Comparative experimental example 4	—	—	—	—	—	—	—	60	—
Water-in-oil type emulsifier composition to be rolled in from Comparative experimental example 5	—	—	—	—	—	—	—	—	60

Table 4

Mixing	5 min at low speed; 5 min at moderate speed
Kneading temperature	27°C
floor	28°C; humidity 75%; 60 min
Retard	-18°C; 60 min
Tucking in	twice by 3-fold
Retard	-7°C; 60 min
Tucking in	Once by 3-fold
Retard	-7°C; 45 min
Molding	dough with 4 mm in thickness; 55 g
Oven	30°C; humidity 75%; 60 min

Baking	210°C; 17 min
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Embodiment 1

With the formula of Embodiment 1 in table 3, materials, except for the water-in-oil type emulsifier composition to be rolled in from Experimental example 1 were agitated well; then fermented in a storage with 75% humidity, at 28°C for 60 min; and then placed in a freezer at -18°C to retard for 60 min. The water-in-oil type emulsifier composition to be rolled in from Experimental example 1 was tucked in, and folded twice by 3-fold with a reverse seater, then retarded for 60 min in the freezer at -7°C; folded once by 3-fold with the reverse seat, then retarded for 45 min in the freezer at -7°C; and then, the dough was stretched to 4 mm in thickness by the reverse seater; 55 g of the dough was molded; and fermented for 60 min in the storage with 75% humidity at 30°C, and then baked in an oven at 210°C in the storage for 17 min to obtain the croissant of Embodiment 1. The handling properties when rolling in and the inner layers of the baked products were evaluated as good. The results are summarized in table 5.

Embodiment 2-4 and Comparative 1-5

With the formulae of Embodiment 2-4 and Comparative 1-5 in table 3, the same processing was carried out as Embodiment 1. The evaluations are as follows: the handling properties when rolling in and the inner layers of the baked products of Embodiment 2-4 and Comparative 4-5 are good; however, for Comparative 1 and 3, the handling properties when rolling in and the inner layers of the baked products are poor, since the shrinkage can be observed when rolling in and the inner layers of the baked products have fine apertures; and in Comparative 2, the handling properties when rolling in and the inner layers of the baked products are poor, since rupture can be observed when rolling in and the inner layers of the baked products are nonuniform. These results are summarized in table 5.

The croissants from Embodiment 1-4 and Comparative 1-6 were tasted after baking for 1 day. The evaluated results on flavor and juicy texture are shown in table 5. In Embodiment 1-4 and Comparative 1, good flavor of butter and outstanding juicy texture may be achieved. In contrast, in Comparative 2 and 4, since the juicy texture is

deficient, the result is unwanted, although the flavor is good. In Comparative 3 and 5, although the flavor is good, the juicy texture is slightly deficient, so the result is not satisfactory.

Table 5

5

	Embodiment 1	Embodiment 2	Embodiment 3	Embodiment 4
Inner layers of baked products	○	○	○	○
flavor	○	◎	○	○
Juicy texture	◎	◎	◎	○

	Comparative 1	Comparative 2	Comparative 3	Comparative 4	Comparative 5
Inner layers of baked products	×	×	×	○	○
flavor	○	○	○	○	○
Juicy texture	◎	×	△	×	△

◎ : fairly good

○ : good

△ : slightly good

10 × : poor

The present invention relates to a water-in-oil type emulsifier composition to be rolled in, more particularly, to a water-in-oil type emulsifier composition to be rolled in, suitable for production of layered and risen wheat foods, such as pies and Danish pastries, and layered and risen wheat foods produced with it.

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It will be apparent to those skilled in the art that various modifications and variations can be made to the structure of the present invention without departing from the scope or spirit of the invention. In view of the foregoing, it is intended that the present invention cover modifications and variations of this invention provided they fall within the scope of the following claims and their equivalents.

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WHAT IS CLAIMED IS:

1. A water-in-oil type emulsifier composition to be rolled in, wherein the composition comprises 20-40 wt% of milk-origin fat, 20-35 wt% of a fat occurring as liquid oil at 20°C and 25-45 wt% of hardened palm oil.

5 2. The water-in-oil type emulsifier composition to be rolled in as claimed in claim 1, wherein, in the fatty acids constituting the hardened palm oil have a composition ratio of stearic acid / (stearic acid + elaidic acid) $\leq$ 0.40.

3. The water-in-oil type emulsifier composition to be rolled in as claimed in claims 1 or 2, wherein the rising melting point of the oil phase of the water-in-oil type
10 emulsifier composition is from 28°C to 35°C.

4. The water-in-oil type emulsifier composition to be rolled in as claimed in claims 1 to 3, wherein the content of oil is from 85 to 95 wt%.

5. A layered and risen wheat food, wherein the food is produced by using the water-in-oil type emulsifier composition to be rolled in as claimed in any one of claims
15 above.