as food products and food additives containing large amounts of potassium, such as potassium caseinate, whey minerals, etc.

The potassium content in the oil-in-water emulsion of the present invention is preferably from 0.01 to 2 mass%, more preferably from 0.03 to 1.6 mass%, most preferably from 0.1 to 1 mass%.

[0026]

In the oil-in-water emulsion of the present invention, the content of potassium derived from the aforementioned marine-derived potassium salt accounts for preferably 50 mass% or more, more preferably 70 mass% or more, of the total potassium content.

Further, as for the amount of potassium-containing components derived from other than plant-based milks, plant-based proteins and marine-derived potassium salt, the potassium content thereof accounts for preferably 30 mass% or less, more preferably 10 mass% or less, of the total potassium content.

[0027]

The oil/fat content of the oil-in-water emulsion needs to be from 0.3 to 49 mass%. If the content is less than 0.3 mass%, the oil-in-water emulsion will lack richness. If the content is more than 49 mass%, the oil-in-water emulsion will become unstable. It should be noted that the preferable content of oil components varies depending on the intended method of use, and can be set as appropriate in accordance with the oil component content in milk or dairy product which is the target to be replaced.

For example, in cases where the oil-in-water emulsion of the present invention is to be used as an alternative to cow milk (for example, as a cow milk-like beverage described further below), the preferable oil component content is from 0.3 to 10 mass%, more preferably from 1 to 7 mass%.

In cases where the oil-in-water emulsion of the present invention is to be used as an alternative to coffee whitener, the oil component content is preferably from 0.3 to 49 mass%, more preferably from 1 to 48 mass%.

In cases where the oil-in-water emulsion of the present invention is to be used as an alternative to sweetened condensed milk, the oil component content is preferably from 2 to 20 mass%, more preferably from 4 to 12 mass%.

In cases where the oil-in-water emulsion of the present invention is to be used as an alternative to concentrated milk or a concentrated cow milk-like composition, the oil

protein content in the plant-based milk is from 0.1 to 10 mass%.

[0032]

It should be noted that, as for the plant-based milk, it is possible to use a concentrate of the plant-based milk, or a processed solution subjected to an enzyme treatment, microbial fermentation treatment, heating treatment, acid treatment, etc. Herein, “enzyme treatment” encompasses a saccharification treatment using amylase. Commercially available products may also be used.

The oil-in-water emulsion of the present invention may simply be a mixture of a plant-based milk and a marine-derived potassium salt, on the premise that the aforementioned requirements (1) to (4) are satisfied. The plant-based milk content in the oil-in-water emulsion of the present invention can be selected as appropriate within a range from 1 to 99 mass%.

It should be noted that the preferable content of the plant-based milk varies depending on the intended method of use, and can be set as appropriate in accordance with the type of milk or dairy product which is the target to be replaced.

For example, in cases where the oil-in-water emulsion of the present invention is to be used as an alternative to cow milk, the preferable plant-based milk content in the oil-in-water emulsion is from 51 to 99 mass%, more preferably from 80 to 99 mass%.

For example, in cases where the oil-in-water emulsion of the present invention is to be used as an alternative to coffee whitener, the preferable plant-based milk content in the oil-in-water emulsion is from 1 to 90 mass%, more preferably from 2 to 80 mass%.

For example, in cases where the oil-in-water emulsion of the present invention is to be used as an alternative to sweetened condensed milk, the preferable plant-based milk content in the oil-in-water emulsion is from 1 to 60 mass%, more preferably from 2 to 60 mass%.

For example, in cases where the oil-in-water emulsion of the present invention is to be used as an alternative to fresh cream or whipped cream, the preferable plant-based milk content in the oil-in-water emulsion is from 1 to 30 mass%, more preferably from 2 to 20 mass%.

Further, in cases where the oil-in-water emulsion of the present invention is to be used as an alternative to concentrated milk or a concentrated cow milk-like composition, the preferable plant-based milk content in the oil-in-water emulsion is from 1 to 60 mass%, more preferably from 2 to 40 mass%.

[0033]

Note that it is possible to use a plant-derived protein material as plant-derived protein instead of plant-based milk or in addition to plant-based milk. The “plant-derived protein material” to be used herein preferably has a protein content, in terms of pure protein, of 20 mass% or more, and more preferably a protein content of 50 mass% or more. It is preferable that the plant-derived protein material is in powder form. An example of a plant-derived protein material includes “vegetable protein powder” according to the Japanese Agricultural Standard. For such plant-based proteins, it is preferable to use an isolated protein (for example, soy protein isolate, etc.) obtained by isolating protein from nuts, beans, or cereals. It is preferable to use an isolated protein obtained by isolating protein such that the content in terms of pure protein is 30 mass% or more. For example, isolation can be performed by subjecting soy protein, which has been water-extracted from pressed soybeans, to isoelectric precipitation, and further conducting neutralization and drying as necessary.

The plant-derived protein material can be used in amounts that satisfy the aforementioned protein content, and for example, the usage amount may be preferably from 0.2 to 15 mass%, more preferably from 0.3 to 10 mass%, particularly preferably from 0.5 to 5 mass%, in the oil-in-water emulsion.

[0034]

Further, in the oil-in-water emulsion of the present invention, the content of water is preferably from 35 to 98 mass%, more preferably from 45 to 95 mass%.

It should be noted that, in cases where the oil-in-water emulsion of the present invention is to be used as an alternative to cow milk, the moisture content is more preferably from 80 to 98 mass%, particularly preferably from 85 to 96 mass%.

In cases where the oil-in-water emulsion of the present invention is to be used as an alternative to coffee whitener, the moisture content is preferably from 50 to 85 mass%, more preferably from 55 to 80 mass%.

In cases where the oil-in-water emulsion of the present invention is to be used as an alternative to sweetened condensed milk, the moisture content is preferably from 10 to 40 mass%, more preferably from 20 to 30 mass%.

In cases where the emulsion is to be used as an alternative to fresh cream or whipped cream, the moisture content is preferably from 35 to 85 mass%, more preferably from 45 to 70 mass%.

was used. Other than the above, Oil-in-water emulsion 35 as a comparative example, which was a foamable oil-in-water emulsion, was obtained according to the blend and production method of Example 18.

For the obtained Oil-in-water emulsion 35, (1) the protein content, (2) the marine-derived potassium salt content, (3) the mass ratio between sodium and potassium, (4) the oil component content, and (5) the non-fat milk solids content are shown in Table 18.

[0098]

[Table 18]

Foamable oil-in-water type emulsion

	Example 21	Example 22	Comparative Example 13
Oil-in-water emulsion	33	34	35
(1) Protein content (mass%)	1.82	1.82	1.82
(2) Marine-derived potassium salt content (mass%)	0.12	0.15	0
(3) Mass ratio between sodium and potassium (K/Na)	3.27	3.13	3.27
(4) Oil component content (mass%)	42.5	42.5	42.5
(5) Non-fat milk solids (mass%)	4.3	4.3	4.3
Potassium content (mass%)	0.135	0.129	0.134

[0099]

Each of the obtained Oil-in-water emulsions 33 to 35 was placed in a mixer bowl, and was whipped and foamed with a vertical mixer at a rotation speed of 700 rpm until it reached an optimally foamed state, to thereby obtain whipped cream.

Ten expert panelists evaluated the flavor. Flavor evaluation was conducted on a five-point scale, wherein: 1 indicates “Different in nature from milk”; 2 indicates “Milk flavor is slightly perceived”; 3 indicates “Rather similar to milk”; 4 indicates “Similar to milk”; and 5 indicates “Natural flavor equivalent to milk”. The average value of the evaluation results of the ten expert panelists is shown in Table 19.

were mixed and emulsified, to prepare a preliminary emulsion. This was homogenized under a pressure of 3 MPa, then sterilized with a VTIS sterilizer (UHT sterilizer from Alfa Laval) at 140°C for 4 seconds, again homogenized under a pressure of 5 MPa, and then cooled to 5°C. Thereafter, aging was conducted in a refrigerator for 24 hours, to obtain Oil-in-water emulsion 36 of the present invention, which was a foamable oil-in-water emulsion.

For the obtained Oil-in-water emulsion 36, (1) the protein content, (2) the marine-derived potassium salt content, (3) the mass ratio between sodium and potassium, (4) the oil component content, and (5) the non-fat milk solids content are shown in Table 20.

[0103]

{Example 24}

Instead of the table salt and the marine-derived potassium salt ("Ocean Kali") used in Example 23, 0.3 parts by mass of a marine-derived potassium salt ("Kali Base" from FC Chemical Co., Ltd.; protein content: 0 mass%; potassium content: 37.8 mass%; sodium content: 7.9 mass%) was used, and the water blending amount was changed from 64.63 parts by mass to 64.5 parts by mass. Other than the above, Oil-in-water emulsion 37 of the present invention, which was a foamable oil-in-water emulsion, was obtained according to the blend and production method of Example 23.

For the obtained Oil-in-water emulsion 37, (1) the protein content, (2) the marine-derived potassium salt content, (3) the mass ratio between sodium and potassium, (4) the oil component content, and (5) the non-fat milk solids content are shown in Table 20.

[0104]

{Comparative Example 14}

Instead of the marine-derived potassium salt ("Ocean Kali") used in Example 23, potassium chloride (mineral-derived "Sylvine" from Organo Foodtech Corporation; protein content: 0 mass%; potassium content: 52.0 mass%; sodium content: 0 mass%) was used. Other than the above, Oil-in-water emulsion 38 as a comparative example, which was a foamable oil-in-water emulsion, was obtained according to the blend and production method of Example 23.

For the obtained Oil-in-water emulsion 38, (1) the protein content, (2) the