

DESCRIPTION

TITLE OF INVENTION: JELLY FOOD

TECHNICAL FIELD

5 [0001]

The present invention relates to a jelly food including a protein and being in a neutral pH range.

BACKGROUND ART

10 [0002]

As a food that can easily take in energy, a jelly food including a protein has been known in the related art.

[0003]

For example, Patent Literature 1 describes a gelled beverage composition for total nutritional supplementation, which is a gel having a pH in the range of 3 to 4 and including, with respect to the total weight of the composition, 5 to 20% by mass of carbohydrate, 0.1 to 5% by weight of fat, 2.5 to 6% by weight of a protein material that does not aggregate at pH 3 to 4, 0.2 to 1.5% by weight of an acidic component, 0.01 to 0.5% by weight of an emulsifier, 0.1 to 1% by weight of agar, and 65 to 90% by weight of water.

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Citation List

Patent Document

[0004]

25 Patent Document 1: International Publication No. WO2004/010796

SUMMARY OF INVENTION

Technical Problem

[0005]

30 As in the related art, there has been a demand for further development of a jelly food having new palatability, while jelly foods including protein and having an acidic pH have conventionally existed.

[0006]

In view of the above-described problems, an object of the present invention is to provide a jelly food including protein and having a pH in a neutral range.

In addition, another object of the present invention is to provide a high-quality jelly food including protein and having a pH in a neutral range. More specifically, an
5 object of the present invention is to provide a jelly food in which the state of gelation is favorable and the texture is smooth.

In addition, in the development of a food that can comprehensively take in nutrients (protein, vitamin, mineral, and dietary fiber) required per day, there has been no food having a pH in a neutral range and being a jelly form in the related art.

10 In view of the above-described problems, an object of the present invention is to provide a jelly food having a pH in a neutral range, the jelly food being capable of comprehensively taking in nutrients required per day.

Solution to Problem

15 [0007]

The present inventors have found that, in a jelly food including protein at a relatively high concentration, a jelly food having new palatability can be provided by setting a pH to a neutral range and adding magnesium.

Specifically, the present inventors have found that, by adding magnesium,
20 gelation and smoothness of the jelly food can be improved, thereby completing the present invention.

[0008]

That is, the present invention for solving the above-described problems is a jelly food including a protein in an amount of 8% by mass or more and magnesium, in which a
25 pH at a product temperature of 20°C is 5 to 8.

[0009]

In a preferred embodiment of the present invention, a content of the magnesium is 10 mg or more per 100 g of the food.

[0010]

30 In a preferred embodiment of the present invention, the jelly food includes magnesium as a sparingly soluble salt.

[0011]

In a preferred embodiment of the present invention, the protein is one or more

selected from the group consisting of soy protein, whey protein, and collagen peptide.
[0012]

In a preferred embodiment of the present invention, the protein is a product obtained by degradation treatment.

5 [0013]

In a preferred embodiment of the present invention, in the jelly food, a content of a protein having a molecular weight of 10,000 to 40,000 is 30% or less with respect to a total of the protein.

[0014]

10 In a preferred embodiment of the present invention, the jelly food includes, in a packaged form including an amount corresponding to one serving, at least 11 or more types of vitamins, 12 or more types of minerals including magnesium, and dietary fiber, in which contents of the 11 or more types of vitamins and the 12 or more types of minerals including the magnesium in the amount corresponding to one serving each
15 satisfy one-third of a required daily amount for an adult in “Dietary Reference Intakes for Japanese” issued by the Ministry of Health, Labour and Welfare of Japan.

[0015]

In a preferred embodiment of the present invention, the jelly food is a retort-heated product.

20 [0016]

In a preferred embodiment of the present invention, in the jelly food, a gel strength measured by the following method at a product temperature of 20°C is 5 to 6,000 g,

(method)

25 using a rheometer, measurement is performed under conditions of a cylindrical plunger with a diameter of 10 mm, a penetration speed of 60 mm/min, a penetration depth of 15 mm, and a maximum load of 20 N.

[0017]

In a preferred form of the present invention, the jelly food includes
30 a content of a carbohydrate of 12 g or less per 100 g of the food, and a content of a fat of 2 g or less per 100 g of the food.

[0018]

In a preferred form of the present invention, a calorie of the jelly food is 130

kcal or less per 100 g of the food.

Advantageous Effects of Invention

[0019]

5 According to the present invention, it is possible to provide a novel jelly food in the present invention.

 Specifically, it is possible to provide a jelly food including protein at a relatively high concentration and having a pH in a neutral range.

10 In addition, it is possible to provide a high-quality jelly food including protein at a relatively high concentration and having a pH in a neutral range. More specifically, it is possible to provide the jelly food in which gelation is favorable and the texture is smooth.

 Furthermore, according to the present invention, it is possible to provide a jelly food having a pH in a neutral range, in which nutrients required per day can be
15 comprehensively intaken.

DESCRIPTION OF EMBODIMENTS

[0020]

20 Hereinafter, embodiments of the present invention will be described to facilitate understanding of the present invention. The following embodiments are concrete examples in which the present invention is embodied, and can be appropriately modified within the scope described in the claims.

[0021]

<Jelly food>

25 The jelly food of the present invention is mainly composed of a structure in which water is captured in a network of a macromolecular raw material including polysaccharides, gelatin, or the like, and has elasticity and shape retention as a whole.

[0022]

30 The packaging form of the jelly food of the present invention is not particularly limited, and preferred examples thereof include a form in which an amount corresponding to one serving of the jelly food of the present invention is packaged in a spouted pouch container.

When the jelly food is in a form filled in the spouted pouch container, the jelly food can be discharged from a drinking spout by grasping or pressing the container by hand from outside the container, and can be consumed with a sensation of drinking.

5 In the form in which the jelly food is filled in the spouted pouch container, the texture can be particularly evaluated by the mouthfeel when the jelly food is sucked out through the spout.

In addition, preferred examples thereof also include a form in which the gel strength is adjusted, the jelly food of the present invention is molded into a rod shape, and then packaged in a container. In a case of such a form, the container is preferably
10 flexible.

[0023]

Examples of the spouted pouch container include a form in which a straw is provided in a bag-shaped container composed of a flexible sheet formed by laminating a plastic film and a metal foil (see Japanese Patent No. 3663084, Japanese Patent No.
15 3477396, and Japanese Patent No. 3659775).

[0024]

Here, the amount corresponding to one serving of the jelly food of the present invention is preferably 50 to 500 g, more preferably 60 to 400 g, still more preferably 70 to 350 g, even more preferably 80 to 300 g, even still more preferably 90 to 250 g, and
20 particularly preferably 100 to 200 g. The amount corresponding to one serving of the jelly food can be appropriately set, but can be usually set to $180\text{ g} \pm 20\text{ g}$ as a guideline.

It is noted that the capacity of the spouted pouch container is not particularly limited as long as the amount corresponding to one serving of the jelly food of the present invention can be filled.

25 [0025]

The jelly food of the present invention has a pH of preferably 5 or more, more preferably 5.4 or more, more preferably 5.8 or more, more preferably 6 or more, more preferably 6.1 or more, and more preferably 6.5 or more at a product temperature of 20°C . In addition, the pH at a product temperature of 20°C is preferably 8.5 or less,
30 more preferably 8 or less, more preferably 7.8 or less, more preferably 7.5 or less, and more preferably 7.3 or less, and may be 7 or less.

As will be described later, from the viewpoint of the solubility of the salt serving as a raw material of the mineral contained in the jelly food of the present invention, the pH is particularly preferably in a range of 5.4 or more and 7.4 or less.

It is noted that the pH is a measured value in a gelled state. In addition, the pH
5 can be measured by a conventional method.
[0026]

The gel strength of the jelly food of the present invention is defined as a gel strength in a case of being measured under the following conditions, and for example, in a case of a form of being filled in a spouted pouch container, the gel strength is
10 preferably 5 g or more, more preferably 6 g or more, more preferably 10 g or more, more preferably 11 g or more, more preferably 20 g or more, more preferably 24 g or more, more preferably 24.5 g or more, more preferably 25 g or more, and more preferably 25.5 g or more.

In addition, the gel strength of the jelly food of the present invention is, in a case
15 of a form of being filled in a spouted pouch container, for example, preferably 100 g or less, more preferably 50 g or less, more preferably 45 g or less, more preferably 43 g or less, more preferably 40 g or less, more preferably 39.5 g or less, more preferably 37.5 g or less, more preferably 35 g or less, more preferably 30.5 g or less, more preferably 28.5 g or less, more preferably 28 g or less, more preferably 27 g or less, and more preferably
20 26.5 g or less.

In addition, the gel strength of the jelly food of the present invention is, in a case of a form of being molded into a rod shape and then packaged in a container, for example, preferably 300 g or more, more preferably 500 g or more, more preferably 1,000 g or more, more preferably 1,500 g or more, more preferably 3,000 g or more, and
25 more preferably 4,000 g or more. In addition, the gel strength of the jelly food of the present invention is, in a case of a form of being molded into a rod shape and then packaged in a container, for example, preferably 6,000 g or less, more preferably 5,000 g or less, and more preferably 4,500 g or less.

(Measurement conditions for gel strength)

30 Using a rheometer (CR-500DX, manufactured by SUN SCIENTIFIC CO., LTD.), measurement is performed under conditions of a cylindrical plunger with a diameter of 10 mm, a penetration speed of 60 mm/min, a penetration depth of 15 mm, and a maximum load of 20 N. The measurement is performed at 20°C. The maximum

load within a penetration depth of 15 mm can be defined as the gel strength. In addition, the measurement is performed under conditions in which a sample size is larger than a diameter of the plunger and a height is larger than the penetration depth. For example, a sample filled in a container having a diameter of 72 mm and a height of 26.7 mm can be used.

[0027]

<Component>

Hereinafter, preferred forms of each component contained in the jelly food of the present invention will be described.

It is noted that the content (concentration) of each component in the present specification indicates the mass of the composition (edible portion) accommodated in the container, and does not include the mass of the container.

In addition, the “Dietary Reference Intakes for Japanese” issued by the Ministry of Health, Labour and Welfare of Japan in the present specification means the contents described in the 2020 edition.

The content of each component contained in the jelly food can be confirmed by measuring the nutrient content contained in the jelly food of the present invention by a conventional method and calculating the content. In addition, the content can also be converted from the blending amount of the raw material of the jelly food.

[0028]

· Magnesium

The jelly food of the present invention contains magnesium.

The content of magnesium in the jelly food of the present invention is, per 100 g of the food, preferably 10 mg or more, more preferably 12 mg or more, more preferably 15 mg or more, more preferably 18 mg or more, more preferably 20 mg or more, more preferably 30 mg or more, more preferably 40 mg or more, more preferably 50 mg or more, more preferably 60 mg or more, and more preferably 65 mg or more. In addition, the upper limit of the content of magnesium is, as a guideline, 340 mg or less, 300 mg or less, 200 mg or less, 120 mg or less, 117 mg or less, 113 mg or less, 100 mg or less, and 85 mg or less.

[0029]

Although described in detail later, the jelly food of the present invention can contain magnesium in an amount that satisfies one-third of the daily required amount

(340 mg) of adults in the “Dietary Reference Intakes for Japanese” issued by the Ministry of Health, Labour and Welfare of Japan, in a form in which the jelly food is packaged in an amount corresponding to one serving.

The content of magnesium contained in an amount corresponding to one serving of the jelly food of the present invention is preferably 100 mg or more, preferably 113 mg or more, more preferably 115 mg or more, and more preferably 117 mg or more. In addition, the upper limit of the content of magnesium contained in an amount corresponding to one serving of the jelly food of the present invention is preferably 400 mg or less, preferably 340 mg or less, more preferably 300 mg or less, more preferably 250 mg or less, and more preferably 200 mg or less.

[0030]

The magnesium may be contained as a sparingly soluble or water-soluble salt. From the viewpoint of improving the liquid properties (solubility and viscosity) of the protein contained in the jelly food of the present invention, the magnesium may be preferably contained as a sparingly soluble salt. It is noted that the salt referred to herein also includes a compound containing an oxide or a hydroxide.

Examples of the sparingly soluble or water-soluble salt include a divalent salt of magnesium.

In addition, examples of the sparingly soluble salt include magnesium oxide, magnesium carbonate, and magnesium phosphate. In addition, examples of the water-soluble salt include magnesium sulfate.

The jelly food of the present invention contains magnesium, preferably as magnesium oxide. In addition, a form in which magnesium oxide and magnesium sulfate are contained in combination is also preferable.

[0031]

As a raw material of the magnesium, a sparingly soluble or water-soluble salt of magnesium, which is usually commercially available for food, can be used.

The raw material of the magnesium can be blended to satisfy the content of magnesium in the jelly food of the present invention.

[0032]

· Protein

The jelly food of the present invention contains a protein.

The content of the protein in the jelly food of the present invention is, per 100 g of the food, preferably 5 g or more, preferably 10 g or more, more preferably 12 g or more, and particularly preferably 12.5 g or more. In addition, the content of the protein is preferably 30 g or less, more preferably 20 g or less, more preferably 15 g or less, and
 5 more preferably 13 g or less.

In the present invention, the content of the protein is defined as the total amount including amino acids and peptides.

[0033]

The content of the protein in the jelly food of the present invention is, with
 10 respect to the total food, preferably 8% by mass or more, more preferably 10% by mass or more, more preferably 12% by mass or more, more preferably 12.5% by mass or more, and particularly preferably 13% by mass or more.

In a case where a plurality of types of proteins are contained, the total content of the proteins is, with respect to the total food, preferably 8% by mass or more, more
 15 preferably 9% by mass or more, more preferably 10% by mass or more, more preferably 12% by mass or more, more preferably 12.5% by mass or more, and more preferably 13% by mass or more.

[0034]

In the jelly food of the present invention, the protein can be contained in an
 20 amount that satisfies 1/3 of the recommended daily intake amount (65 g) for adults in “Dietary Reference Intakes for Japanese”, issued by the Ministry of Health, Labour and Welfare of Japan, in a form in which the jelly food is packaged in an amount corresponding to one serving.

The content of the protein contained in the jelly food of the present invention in
 25 an amount corresponding to one serving is preferably 10 g or more, preferably 15 g or more, more preferably 20 g or more, and more preferably 21 g or more. In addition, the upper limit of the content of the protein contained in the jelly food of the present invention in an amount corresponding to one serving is not particularly limited, but is preferably 40 g or less, more preferably 30 g or less, and more preferably 25 g or less.

30 [0035]

As the protein contained in the jelly food of the present invention, a protein derived from an animal or a protein derived from a plant may be used as a raw material. Preferred examples thereof include one or more selected from the group consisting of soy

protein, whey protein, and collagen. It is preferable that the protein contains soy protein or whey protein. In addition, a form containing soy protein or whey protein and collagen is also preferable.

[0036]

5 The protein contained in the jelly food of the present invention is preferably a product obtained by subjecting the raw material to degradation treatment. Preferred examples thereof include one or more selected from the group consisting of enzyme-treated soy protein, whey protein hydrolysate (WPH), and collagen peptide.

10 It is preferable that the jelly food contains enzyme-treated soy protein or whey protein hydrolysate (WPH). In addition, a form containing enzyme-treated soy protein or whey protein hydrolysate (WPH) and collagen peptide is also preferable.

15 The product obtained by degradation treatment may be produced by decomposing the raw material and reducing the molecular weight thereof by enzyme treatment, and may be used. In addition, a product obtained by subjecting a protein that is usually commercially available to degradation treatment, may be used.

 By using the product obtained by degradation treatment, the liquid properties (solubility and viscosity) of the protein in the jelly food can be improved. In addition, the gelation and texture of the jelly food having a neutral pH can be improved.

[0037]

20 In the protein contained in the jelly food of the present invention, the content of soy protein and/or whey protein (including products obtained by degradation treatment thereof) is, with respect to the total protein, preferably 20% by mass or more, more preferably 30% by mass, more preferably 40% by mass or more, and more preferably 50% by mass or more. In addition, the content of soy protein and/or whey protein is, with respect to the total protein, preferably 100% by mass or less, more preferably 90% by mass or less, more preferably 80% by mass or less, more preferably 70% by mass or less, and more preferably 60% by mass or less.

25 In addition, in a case of a form containing soy protein and/or whey protein (including products obtained by degradation treatment thereof) and collagen (including a product obtained by degradation treatment thereof), the following forms are also preferable.

30 In a case where the total mass of soy protein and/or whey protein (including products obtained by degradation treatment thereof) is set to 1, the mass of collagen

(including a product obtained by degradation treatment thereof) is 1.3 or less, preferably 1.0 or less, and still more preferably 0.8 or less.

From the viewpoint of nutritional supplementation described later, it is preferable that the protein contained in the jelly food of the present invention is contained
5 such that the total amino acid score is preferably 65 or more, more preferably 70 or more, and more preferably 75 or more.

[0038]

The protein included in the jelly food of the present invention preferably includes a protein having a molecular weight of 10,000 to 40,000 in an amount of 30% or
10 less, more preferably 25% or less, and still more preferably 23% or less, with respect to the total of the protein. The protein contained in the jelly food of the present invention preferably contains proteins having a molecular weight of 10,000 to 40,000 in an amount of 10% or more, more preferably 15% or more, and still more preferably 19% or more.

As the protein contained in the jelly food of the present invention, a protein that
15 is appropriately degraded to have the above-described molecular weight can be preferably used.

By setting the molecular weight of the protein within the above-described numerical range, the gelation of the jelly food of the present invention can be improved. Furthermore, the texture of the jelly food can be made smooth.

20 [0039]

In the protein contained in the jelly food of the present invention, the content of a protein having a molecular weight of 1,000 or less is, with respect to the total protein, preferably 13% to 30% and more preferably 13% to 25%.

In the protein contained in the jelly food of the present invention, the content of
25 a protein having a molecular weight of 1,000 or more and 2,500 or less is, with respect to the total protein, preferably 15% to 30% and more preferably 15% to 25%.

In the protein contained in the jelly food of the present invention, the content of a protein having a molecular weight of 2,500 or more and 5,000 or less is, with respect to the total protein, preferably 10% to 30%, more preferably 12% to 30%, and more
30 preferably 12% to 26%.

In the protein contained in the jelly food of the present invention, the content of a protein having a molecular weight of 5,000 or more and 10,000 or less is preferably 14% to 18% with respect to the total protein.

In the protein contained in the jelly food of the present invention, the content of a protein having a molecular weight of 10,000 or more and 20,000 or less is preferably 7% to 12% with respect to the total protein.

5 In the protein contained in the jelly food of the present invention, the content of a protein having a molecular weight of 20,000 or more and 40,000 or less is preferably 2% to 11% with respect to the total protein.

In the protein contained in the jelly food of the present invention, the content of a protein having a molecular weight of 40,000 or more and 60,000 or less is preferably 0.3% to 9% with respect to the total protein.

10 In the protein contained in the jelly food of the present invention, the content of a protein having a molecular weight of 60,000 or more and 10,000,000 or less is preferably 0.1% to 6% with respect to the total protein.

It is noted that the proportion of the content of each protein having the above-described molecular weight is a value calculated as a proportion of an area value of each protein having the above-described molecular weight to a total area value detected by a method described later.

The above-described method for measuring the distribution of the molecular weight can be performed by a conventional method. In addition, the proportion of the content can be measured by the following method.

20 <Method>

1. Deionized water is added to each sample to be 1% (w/w), and the mixture is mixed using a vortex mixer.

2. Centrifugal separation (20,400 G, 20°C, 5 minutes) is performed, the supernatant is diluted 10 times (v/v) with a mobile phase, mixed with a vortex mixer, and passed through a filter having an opening of 0.22 μm to obtain a sample for analysis.

3. A standard product prepared at an appropriate concentration and the sample for analysis are subjected to HPLC under the following conditions, and the molecular weight distribution of each sample is calculated from a molecular weight calibration curve (cubic expression) created using the standard product.

30 (HPLC conditions)

Mobile phase: 25% acetonitrile water (v/v) (for high performance liquid chromatograph, manufactured by FUJIFILM Wako Pure Chemical Corporation, model number 015-08633) + 0.1% trifluoroacetic acid (v/v) (trifluoroacetic acid, Wako special

grade, manufactured by FUJIFILM Wako Pure Chemical Corporation, model number 204-02743)

Flow rate: 0.6 mL/min

Detection wavelength: 210 nm

5 Column oven: 30°C

(Used column)

TSKgel guard column SWXL, 6.0 mm I.D. x 4 cm, 7 µm and TSKgel G2000SWXL, 7.8 mm I.D. x 30 cm, 5 µm (both manufactured by TOSOH BIOSCIENCE, INC.)

10 [0040]

Here, the mass ratio of the protein to the magnesium contained in the jelly food of the present invention is, with respect to 1 of the magnesium, preferably 100 or more, more preferably 150 or more, more preferably 180 or more, and more preferably 190 or more. In addition, the mass ratio of the protein to the magnesium is, with respect to 1 of the magnesium, preferably 350 or less, preferably 345 or less, preferably 200 or less, and preferably 195 or less.

In another preferred form, the mass ratio of the protein to the magnesium is, with respect to 1 of the magnesium, preferably 50 or more, more preferably 55 or more, and more preferably 57 or more. In addition, the mass ratio of the protein to the magnesium is, with respect to 1 of the magnesium, preferably 120 or less, more preferably 115 or less, more preferably 100 or less, more preferably 90 or less, more preferably 89 or less, more preferably 88.5 or less, more preferably 70 or less, more preferably 60 or less, and more preferably 59 or less.

In a case of containing magnesium sulfate as the magnesium, the mass ratio of the protein to the magnesium contained in the jelly food of the present invention is, with respect to 1 of the magnesium, preferably 10 or more, more preferably 15 or more, and more preferably 18 or more. In addition, the mass ratio of the protein to the magnesium is, with respect to 1 of the magnesium, preferably 60 or less and more preferably 58 or less.

30 [0041]

· Vitamin

The jelly food of the present invention can contain 11 or more types of vitamins.

Examples of the vitamin include fat-soluble vitamins and water-soluble vitamins.

The jelly food of the present invention can particularly preferably contain 11 or more types selected from the group consisting of vitamin A, vitamin B1, vitamin B2, vitamin B6, vitamin B12, vitamin C, niacin, vitamin D, vitamin E, folic acid, pantothenic acid, biotin, and vitamin K.

[0042]

In a form in which the jelly food of the present invention is packaged in an amount corresponding to one serving, at least 11 or more types selected from the group consisting of the above-mentioned vitamins can be included to satisfy 1/3 of the recommended daily intake amount for adults in “Dietary Reference Intakes for Japanese” issued by the Ministry of Health, Labour and Welfare of Japan.

The following is the guideline for 1/3 of the daily intake amount of the adult for the vitamins in “Dietary Reference Intakes for Japanese” issued by the Ministry of Health, Labour and Welfare of Japan. The content of the vitamin in the jelly food of the present invention can be set to the following numerical values or more as a guideline.

· Vitamin A (recommended dietary allowance: 283.3 μ g), vitamin B1 (recommended dietary allowance: 0.47 mg), vitamin B2 (recommended dietary allowance: 0.53 mg), vitamin B6 (recommended dietary allowance: 0.47 mg), vitamin B12 (recommended dietary allowance: 0.8 μ g), niacin (recommended dietary allowance: 5 mg), vitamin D (adequate intake: 2.8 μ g), vitamin E (adequate intake: 2 μ g), folic acid (recommended dietary allowance: 80 μ g), pantothenic acid (adequate intake: 1.67 mg), vitamin C (recommended dietary allowance: 33.3 mg), biotin (adequate intake: 16.7 μ g), and vitamin K (adequate intake: 50 μ g)

[0043]

As a raw material of the vitamin, a vitamin mix or the like that is usually commercially available for food can be used.

The raw material of the vitamin can be blended to satisfy the content of the vitamin in the above-described jelly food of the present invention.

[0044]

· Mineral

The jelly food of the present invention can contain 12 or more types of minerals including magnesium.

Preferred examples of the mineral include those described in “Dietary Reference Intakes for Japanese”. More preferred examples thereof include major minerals for which the recommended dietary allowance or the adequate intake for one day is about 100 mg or more, and trace minerals for which the recommended dietary allowance or the adequate intake for one day is about 100 mg or less in “Dietary Reference Intakes for Japanese”.

Examples of the major minerals include potassium, calcium, magnesium, and phosphorus.

Examples of the trace minerals include iron, zinc, copper, manganese, iodine, selenium, chromium, and molybdenum.

The jelly food of the present invention can particularly preferably contain, in addition to magnesium, zinc, potassium, calcium, chromium, selenium, iron, copper, manganese, molybdenum, iodine, and phosphorus.

[0045]

In the jelly food of the present invention, in a form in which the amount corresponding to one serving is packaged, 12 or more types of the minerals including at least magnesium can be contained to satisfy 1/3 of the recommended daily intake amount for adults in “Dietary Reference Intakes for Japanese” issued by the Ministry of Health, Labour and Welfare of Japan.

The guideline of 1/3 of the recommended daily intake amount for adults in “Dietary Reference Intakes for Japanese” issued by the Ministry of Health, Labour and Welfare of Japan for the minerals containing magnesium is as follows. The content of the minerals including magnesium in the jelly food of the present invention can be set to the following numerical values as a guideline.

· Zinc (recommended dietary allowance: 3.7 mg), potassium (adequate intake: 833.3 mg), calcium (recommended dietary allowance: 266.7 mg), chromium (adequate intake: 3.3 µg), selenium (recommended dietary allowance: 10 µg), iron (recommended dietary allowance (for women with menstruation): 3.5 mg), copper (recommended dietary allowance: 0.3 mg), magnesium (recommended dietary allowance: 113.3 mg), manganese (adequate intake: 1.3 mg), molybdenum (recommended dietary allowance: 10 µg), iodine (recommended dietary allowance: 43.3 µg), and phosphorus (adequate intake: 333 mg)

It is noted that the content of the minerals in the jelly food of the present invention may be a value obtained by adding the content of the minerals derived from the mineral raw material, the content of the minerals derived from other raw materials, and the content of the minerals derived from additives such as a pH adjuster.

5 [0046]

The minerals may be contained as a sparingly soluble or water-soluble salt. From the viewpoint of improving the liquid properties (solubility and viscosity) of the jelly food, the minerals may preferably be contained as a sparingly soluble salt. It is noted that the salt referred to herein also includes a compound containing an oxide or a
10 hydroxide.

Examples of the sparingly soluble or water-soluble salt include monovalent or divalent salts of the above-described minerals. Examples thereof include phosphate, lactate, chloride, pyrophosphate, or gluconate of the above-described minerals.

In addition, the minerals may be contained as mineral yeast in which minerals
15 are incorporated into yeast. Here, the major minerals may preferably be contained as phosphate, lactate, or chloride. In addition, the trace minerals may preferably be contained as pyrophosphate, gluconate, or mineral yeast.

[0047]

The guideline for the blending amount of the raw material of each mineral is as
20 follows.

Among the major minerals, examples of calcium include calcium sulfate, tricalcium phosphate, and calcium lactate, but the calcium may be preferably contained as tricalcium phosphate or calcium lactate.

In a case of being contained as tricalcium phosphate, the guideline for the
25 blending amount of the raw material is 0.5% to 0.6% by mass with respect to the total food.

In a case of being contained as calcium lactate, the guideline for the blending amount of the raw material is 0.2% to 0.3% by mass with respect to the total food.

Among the major minerals, examples of potassium include dipotassium
30 hydrogen phosphate, potassium dihydrogen phosphate, tripotassium phosphate, potassium lactate, potassium chloride, and the like, but the potassium may be preferably contained as potassium lactate or potassium chloride.

In a case of being contained as potassium lactate, the guideline for the blending amount of the raw material is 2% to 3% by mass with respect to the total food. In a case of being contained as potassium chloride, the guideline for the blending amount of the raw material is 1% to 1.5% by mass with respect to the total food.

5 [0048]

Among the trace minerals, zinc, copper, and iron may be preferably contained as pyrophosphate or gluconate. In a case where the trace minerals are contained as pyrophosphate or gluconate, the guideline for the blending amount of the raw material is preferably 0.0001% to 0.05% by mass.

10 Among the trace minerals, manganese, chromium, and selenium may be preferably contained as mineral yeast. In a case where the trace minerals are contained as mineral yeast, the guideline for the blending amount of the raw material is preferably 0.0008% to 0.08% by mass.

[0049]

15 As the raw material of each mineral, a salt of each mineral or each mineral yeast, which is usually commercially available for food, can be used.

The raw material of each mineral can be blended to satisfy the content of the mineral in the above-described jelly food of the present invention.

[0050]

20 · Dietary fiber

The jelly food of the present invention can contain dietary fiber.

Examples of the dietary fiber include water-soluble dietary fiber. In addition, the dietary fiber is preferably low-molecular-weight dietary fiber. Here, the low-molecular-weight dietary fiber has a weight-average molecular weight of 3,000 or less.

25 Examples of the low-molecular-weight dietary fiber include indigestible oligosaccharides, cyclonigerosyl nigerose, polydextrose, and indigestible dextrin. Cyclonigerosyl nigerose or maltosyl trehalose is particularly preferable.

[0051]

30 In the jelly food of the present invention, the dietary fiber can be contained in an amount that satisfies 1/3 of the recommended daily intake amount (7 g) for adults in “Dietary Reference Intakes for Japanese”, issued by the Ministry of Health, Labour and Welfare of Japan, in a form in which the jelly food is packaged in an amount corresponding to one serving.

The content of the dietary fiber in the jelly food of the present invention is, per 100 g of the food, preferably 2 g or more, more preferably 3 g or more, more preferably 5 g or more, more preferably 7 g or more, and more preferably 9 g or more.

In addition, the content of the dietary fiber contained in an amount
5 corresponding to one serving of the jelly food of the present invention is preferably 7 g or more, more preferably 9 g or more, more preferably 10 g or more, more preferably 15 g or more, and more preferably 20 g or more.

Here, the content of the dietary fiber in the jelly food of the present invention may be a value obtained by adding the dietary fiber contained in the jelly food, which is
10 derived from a total carbohydrate, a protein, and a gelling agent, to the dietary fiber blended as a raw material.

[0052]

As a raw material for the dietary fiber, a commercially available dietary fiber ingredient may be used.

15 The dietary fiber ingredient can be blended to satisfy the content of the dietary fiber in the jelly food of the present invention described above.

The guideline for the blending amount of the dietary fiber ingredient is, with respect to the total food, preferably 2% by mass or more, more preferably 3% by mass or more, more preferably 5% by mass or more, more preferably 7% by mass or more, and
20 more preferably 9% by mass or more.

[0053]

<Optional component>

· Gelling agent

The jelly food of the present invention contains a gelling agent.

25 Preferred examples of the gelling agent include one or more selected from agar, xanthan gum, locust bean gum, glucomannan, carrageenan, native gellan gum, tamarind gum, guar gum, gellan gum, alginic acid, gelatin, and pectin. Particularly preferred examples thereof include one or more selected from agar, xanthan gum, locust bean gum, glucomannan, and native gellan gum.

30 [0054]

The jelly food of the present invention preferably contains agar as the gelling agent.

In a case where the jelly food of the present invention is a form of being filled in a spouted pouch container, the content of the agar is, with respect to the total food, preferably 0.01% by mass or more, more preferably 0.05% by mass or more, and more preferably 0.1% by mass or more.

5 In addition, the content of the agar is, with respect to the total food, preferably 2% by mass or less, more preferably 1.5% by mass or less, more preferably 1.0% by mass or less, more preferably 0.5% by mass or less, still more preferably 0.2% by mass or less, more preferably 0.15% by mass or less, and particularly preferably 0.12% by mass or less.

10 [0055]

In a case where the jelly food of the present invention is a form of being molded into a rod shape and then packaged in a container, the content of the agar is, with respect to the total food, preferably 0.01% by mass or more, more preferably 0.05% by mass or more, and more preferably 0.1% by mass or more.

15 In addition, the content of the agar is, with respect to the total food, preferably 4% by mass or less, more preferably 3.5% by mass or less, more preferably 3% by mass or less, more preferably 2% by mass or less, more preferably 1.5% by mass or less, more preferably 1.0% by mass or less, more preferably 0.5% by mass or less, still more preferably 0.2% by mass or less, more preferably 0.15% by mass or less, and particularly preferably 0.12% by mass or less.

20 [0056]

In a case where the jelly food of the present invention is a form of being filled in a spouted pouch container, the total content of the gelling agent in a case of containing one or more types thereof is, with respect to the total food, preferably 0.01% by mass or more, more preferably 0.02% by mass or more, more preferably 0.03% by mass or more, more preferably 0.1% by mass or more, more preferably 0.16% by mass or more, more preferably 0.16% by mass or more, more preferably 0.2% by mass or more, more preferably 0.3% by mass or more, more preferably 0.4% by mass or more, and more preferably 0.45% by mass or more.

30 In addition, the total content of the gelling agent in a case of containing one or more types thereof is, with respect to the total food, more preferably 4% by mass or less, more preferably 3.5% by mass or less, more preferably 3% by mass or less, more preferably 2.5% by mass or less, more preferably 2% by mass or less, more preferably

1.5% by mass or less, more preferably 1.0% by mass or less, more preferably 0.7% by mass or less, and still more preferably 0.5% by mass or less. By setting the blending amount of the gelling agent within the above-described range, a jelly food having a preferred texture can be obtained.

5 [0057]

In a case where the jelly food of the present invention is a form of being molded into a rod shape and then packaged in a container, the total content of the gelling agent in a case of containing one or more types thereof is, with respect to the total food, preferably 0.01% by mass or more, more preferably 0.05% by mass or more, and more
10 preferably 0.1% by mass or more.

In addition, the total content of the gelling agent in a case of containing one or more types thereof is, with respect to the total food, preferably 5% by mass or less, more preferably 4.5% by mass or less, more preferably 4% by mass or less, more preferably 3.5% by mass or less, more preferably 3% by mass or less, more preferably 2.5% by
15 mass or less, more preferably 2% by mass or less, more preferably 1.5% by mass or less, more preferably 1.0% by mass or less, more preferably 0.7% by mass or less, and still more preferably 0.5% by mass or less.

[0058]

In the jelly food of the present invention, other components that are usually used
20 in a jelly food can be optionally blended, except for the above-described components, as long as the effects of the present invention are not impaired. Examples of such optional components include a jelly food additive, fats and oils, a sweetener, an antioxidant, an antioxidant synergist, a stabilizer, an emulsifier, and the like.

[0059]

25 The jelly food of the present invention may contain a carbohydrate.

The content of the carbohydrate in the jelly food of the present invention is, per 100 g of the food, preferably 20 g or less, more preferably 15 g or less, more preferably 13 g or less, more preferably 12 g or less, and more preferably 11.5 g or less.

In addition, the content of the carbohydrate in the jelly food of the present
30 invention is, per amount corresponding to one serving, preferably 30 g or less, more preferably 25 g or less, more preferably 23 g or less, and more preferably 21 g or less.

In addition, the content of the carbohydrate in the jelly food of the present invention is, with respect to the total food, preferably 20% by mass or less, more

preferably 15% by mass or less, more preferably 13% by mass or less, more preferably 12% by mass or less, and more preferably 11.5% by mass or less.

[0060]

The jelly food of the present invention may contain a fat.

5 The content of the fat in the jelly food of the present invention is, per 100 g of the food, preferably 5 g or less, more preferably 4.5 g or less, more preferably 3 g or less, more preferably 2.5 g or less, and more preferably 2 g or less.

10 The content of the fat in the jelly food of the present invention is, per amount corresponding to one serving, preferably 1 to 10 g, 2 to 5 g, and more preferably 2.4 to 4.5 g.

15 In addition, the content of the fat in the jelly food of the present invention is, with respect to the total food, preferably 10% by mass or less, more preferably 8% by mass or less, more preferably 5% by mass or less, more preferably 4.5% by mass or less, more preferably 4% by mass or less, more preferably 3% by mass or less, more preferably 2.5% by mass or less, and more preferably 2% by mass or less.

[0061]

· Calories

20 The jelly food of the present invention preferably has a calorie content of 130 kcal or less per 100 g. The jelly food of the present invention more preferably has a calorie content of 125 kcal or less per 100 g.

25 The jelly food of the present invention preferably has a calorie content of 300 kcal or less per amount corresponding to one serving, more preferably 250 kcal or less, still more preferably 230 kcal or less, still more preferably 225 kcal or less, and still more preferably 224 kcal or less.

[0062]

30 As described above, the jelly food of the present invention can contain protein, vitamin, mineral including magnesium, and dietary fiber to satisfy 1/3 of the recommended daily intake amount of adults in “Dietary Reference Intakes for Japanese” issued by the Ministry of Health, Labour and Welfare of Japan in a form in which an amount corresponding to one serving is packaged.

Therefore, the jelly food of the present invention can be preferably used for supplementing protein, vitamin, mineral including magnesium, dietary fiber, and the like that are insufficient in a daily meal.

For the above-described reason, a form in which the jelly food of the present invention contains low amounts of carbohydrate, fat, and calories is preferable.

[0063]

(Production method)

5 The jelly food of the present invention can be produced by a conventional method.

10 The production method preferably includes a protein component adjustment step of mixing a protein ingredient, a preparation step of mixing the protein component with other components to prepare a jelly, a filling step of filling a container with the jelly, and a heat sterilization step of heating the obtained jelly in a container by a conventional method. As the heat sterilization step, a retort heating step by pressurization and heating is preferable.

15 Since the jelly food of the present invention has a neutral pH, sterilization by heating, preferably pressurization and heating, is particularly useful. The jelly food of the present invention has favorable gelation and texture of the jelly even in a case of being heated and pressurized. In addition, the flavor is less likely to deteriorate.

20 The temperature condition of the heating is preferably 90°C or higher, more preferably 100°C or higher, and still more preferably 125°C or higher as a guideline. In addition, the guideline of the heating time is preferably 10 minutes or longer, 15 minutes or longer, or 20 minutes or longer, and more preferably 25 minutes or longer.

[0064]

Here, the preparation step may include a heating step of warming or heating a raw material.

25 Examples thereof include a form in which a raw material other than the gelling agent is heated to about 40°C to 50°C, stirred and mixed, and then mixed with a gelling agent separately heated to about 80°C to 100°C.

30 In addition, the preparation step may include, after the heating step, a gelling agent mixing step of mixing and stirring a gelling agent dispersed in a solution, or may include a step of heating after all of the raw materials including the gelling agent are stirred, mixed, and dispersed in a solution.

Examples

[0065]

<Production Example 1>

The raw materials shown in Table 1 were mixed to prepare the jelly food of the present invention.

The adjustment was performed according to the following procedure.

A. Preparation of protein solution

- 5 Protein, an emulsifier, and water were put into a container such that the protein was 45% by mass, and the mixture was homogenized with a homogenizer.

B. Preparation of jelly

- (1) A predetermined amount (small amount) of water was put into a stainless steel beaker, and the protein solution created in A, dietary fiber, fats and oils,
10 carbohydrate, vitamins, and minerals were put into the beaker and dissolved while stirring with a stirrer.

(2) A predetermined amount of water was put into another stainless steel beaker, a gelling agent was put into the beaker to create a 20% solution of the gelling agent, and the mixture was stirred and dispersed.

- 15 (3) The beaker of (1) was heated to 45°C, and the beaker of (2) was heated at 93°C for 1 minute.

(4) The gelling agent dispersion liquid of (2) was put into the beaker of (1), and the mixture was stirred well (mixed by hand).

(5) The mixture of (4) was filled into a retort cup in an amount of 60 to 70 g.

- 20 (6) The pouch filled with jelly was subjected to retort sterilization (125°C, 25 minutes).

[0066]

[Table 1]

Table 1	Raw material name	Type
Protein	Soy protein	Enzyme-treated soy protein
	Collagen	Collagen peptide
	Whey protein hydrolysate (WPH)	Whey protein hydrolysate
Mineral	Calcium A	Tricalcium phosphate
	Calcium B	Calcium lactate
	Potassium A	Potassium lactate
	Potassium B	Potassium chloride
	Magnesium A	Magnesium oxide
	Magnesium B	Magnesium sulfate
	Manganese	Mineral yeast manganese
	Chromium	Mineral yeast chromium
	Selenium	Mineral yeast selenium
	Iron	Ferric pyrophosphate
	Zinc	Zinc gluconate
	Copper	Copper gluconate
Carbohydrate	Sugar	Granulated sugar
	Starch syrup	Starch syrup
Gelling agent	Agar	Agar
	Xanthan gum	Xanthan gum
	Locust bean gum	Locust bean gum
Fats and oils	Edible fats and oils	
Vitamin	Vitamin K2	Vitamin K2
	Vitamin C	Vitamin C
	Vitamin mix	Vitamin A, B2, B6 and the like
	Vitamin E	Vitamin E
Dietary fiber	Water-soluble dietary fiber	Low-molecular-weight dietary fiber
pH adjuster and mineral	Phosphoric acid	

[0067]

The nutrient contents (per 100 g) of the obtained jelly food are shown in Table 2.

For the obtained jelly food, the contents of protein, 11 or more types of vitamins (niacin, pantothenic acid, vitamin A, vitamin B2, vitamin B6, vitamin B12, vitamin C, vitamin D, vitamin E, vitamin K, and folic acid), 12 or more types of minerals including magnesium (magnesium, calcium, potassium, manganese, chromium, selenium, zinc, copper, iron, molybdenum, iodine, and phosphorus), and dietary fiber, which are contained in an amount corresponding to one serving, satisfied one third of the recommended daily intake amount for adults in “Dietary Reference Intakes for Japanese”

issued by the Ministry of Health, Labour and Welfare of Japan. It is noted that the numerical value of the dietary fiber was a value including the dietary fiber derived from the dietary fiber ingredient and the dietary fiber derived from an ingredient other than the dietary fiber ingredient, such as soy protein.

- 5 [0068]
[Table 2]

Table 2		Per 100 g	
Basic components	Energy	124.4	kcal
	Protein	12.6	g
	Fat	1.9	g
	Total carbohydrate	16.8	g
	- Carbohydrate	11.5	g
	- Dietary fiber	5.3	g
	Salt equivalent	0.2	g
Minerals	Zinc	2.1	mg
	Potassium	468.9	mg
	Calcium	212.8	mg
	Chromium	8.4	µg
	Selenium	10	µg
	Iron	2.0	mg
	Copper	0.2	mg
	Magnesium	65.0	mg
	Manganese	0.9	mg
	Molybdenum	28.9	µg
	Iodine	37.9	µg
	Phosphorus	192.8	mg
Vitamins	Niacin	4.7	mg
	Pantothenic acid	3.1	mg
	Biotin	13.9	µg
	Vitamin A	252.5	µg
	Vitamin B1	1.0	mg
	Vitamin B2	0.3	mg
	Vitamin B6	0.3	mg
	Vitamin B12	0.7	µg
	Vitamin C	23.9	mg
	Vitamin D	2.9	µg
	Vitamin E	1.2	mg
	Vitamin K	28.3	µg
	Folic acid	111.1	µg

[0069]

Thereafter, for each test example, the gelation and texture (smoothness) of the jelly food were evaluated. The evaluation was performed by a panel of five experts, and the evaluation was determined by consensus of the five experts.

The evaluation criteria are as follows. For the gelation, a score of 4 or more was considered acceptable, and for the texture, a score of 3 or more was considered acceptable. It is noted that in each of the following test examples, the test was performed by appropriately changing the blending amount based on the blending and nutrient content of the components contained in 100 g of the jelly food of the present invention described in Tables 1 and 2.

· Gelation

5: The entire jelly food is uniformly gelled.

4: A part of the jelly food is in a liquid state or the gel is separated, but the gelation is generally favorable.

3: About half of the jelly food is gelled.

2: The jelly food is almost in a liquid state or the gel is separated, and only a very small part is uniformly gelled.

1: The entire jelly food is in a liquid state.

· Texture

5: Smooth

4: Slightly rough, but favorable

3: Somewhat rough, but within an acceptable range.

2: Rough

1: Powdery and very rough

[0070]

In addition, in each table below, the numerical values for protein and the like indicate the nutrient content per 100 g of the food.

In addition, in each table below, the nutrient contents of the manufactured jelly food, such as calories, vitamins, minerals, and dietary fiber, are the same as those described in Table 2.

In addition, 9 types of minerals in each table below indicates that manganese, chromium, selenium, zinc, copper, iron, molybdenum, iodine, and phosphorus were contained such that the amounts thereof were the same as the nutrient contents shown in Table 2.

In addition, 11 types of vitamins in the table indicates that niacin, pantothenic acid, vitamin A, vitamin B2, vitamin B6, vitamin B12, vitamin C, vitamin D, vitamin E,

vitamin K, and folic acid were contained such that the amounts thereof were the same as the nutrient contents shown in Table 2.

In addition, in each test example, the magnesium content in the produced jelly food was 10 mg or more per 100 g of the food.

5 [0071]

Furthermore, the content of the protein having a molecular weight of 10,000 to 40,000 for each protein (enzyme-treated protein, collagen peptide, and WPH) used in each test example was as follows.

- Enzyme-treated soy protein, 19.7%
- 10 · Collagen peptide, 10.4%
- WPH, 23.2%

[0072]

<Test Example 1>

The effect of pH on the jelly food was confirmed.

15 Jelly food was produced using the nutrients in Table 2 (excluding biotin and vitamin B1). The compositions and the results are shown in Table 3 (hereinafter, in each table, when the same raw materials as those in Table 1 were used, the raw materials are indicated by a circle symbol).

In Comparative Example 1-1, the pH was adjusted to 4.0 with phosphoric acid.
20 From Test Example 1, it was shown that gelation failure occurred in a case where the pH was low (in Comparative Example 1-1, a jelly food was almost in a liquid state, and the evaluation of the texture could not be obtained).

[0073]

[Table 3]

25

Table 3	Comparative Example 1-1	Example 1-1
Protein (soy protein) (unit: g)	5.8	5.8
Protein (collagen peptide) (unit: g)	6.8	6.8
Calcium A (tricalcium phosphate)	○	○
Potassium A (potassium lactate)	○	○
Magnesium A (magnesium oxide)	○	○
Mineral	9 other types	9 other types
Vitamin	11 types	11 types
Dietary fiber	○	○
pH	4.1	6.9
Gel strength (unit: g)	0	11
Gelation	2	5
Texture	-	5

[0074]

<Test Example 2>

The effect of the type and combination of minerals on the jelly food was confirmed. The results are shown in Table 4. From Test Example 2, it was shown that

5 when magnesium was contained, the gelation and the texture of the jelly were improved.

[0075]

[Table 4]

Table 4	Comparative Example 2-1	Comparative Example 2-2	Comparative Example 2-3	Example 2-1	Example 2-2	Example 2-3
Protein (soy protein) (unit: g)	5.8	5.8	5.8	5.8	5.8	5.8
Protein (collagen peptide) (unit: g)	6.8	6.8	6.8	6.8	6.8	6.8
Calcium A (tricalcium phosphate)	○		○	○		
Potassium A (potassium lactate)		○	○			○
Magnesium A (magnesium oxide)				○	○	○
Mineral	9 other types	9 other types	9 other types	9 other types	9 other types	9 other types
Vitamin	11 types	11 types	11 types	11 types	11 types	11 types
Dietary fiber	○	○	○	○	○	○
pH	6.5	6.4	6.7	6.6	6.6	6.6
Gel strength (unit: g)	24.5	24.0	26.5	39.5	43.0	27.0
Gelation	3	3	3	4	5	4
Texture	3	3	3	4	4	4

[0076]

<Test Example 3>

Regarding the type of mineral, calcium was changed to calcium lactate, potassium was changed to potassium chloride, and magnesium was changed to magnesium sulfate, and the effect on the jelly food was confirmed. The results are shown in Table 5. From Test Example 3, it was shown that even when calcium was changed to a water-soluble salt such as calcium lactate, potassium was changed to a water-soluble salt such as potassium chloride, and magnesium was changed to a water-soluble salt such as magnesium sulfate, a jelly food having favorable gelation and texture could be obtained.

[0077]

[Table 5]

Table 5	Example 3-1	Example 3-2	Example 3-3
Protein (soy protein) (unit: g)	5.8	5.8	5.8
Protein (collagen peptide) (unit: g)	6.8	6.8	6.8
Calcium A (tricalcium phosphate)		○	○
Calcium B (calcium lactate)	○		
Potassium A (potassium lactate)	○		○
Potassium B (potassium chloride)		○	
Magnesium A (magnesium oxide)	○	○	
Magnesium B (magnesium sulfate)			○
Mineral	9 other types	9 other types	9 other types
Vitamin	11 types	11 types	11 types
Dietary fiber	○	○	○
pH	6.5	6.7	5.4
Gel strength (unit: g)	28.5	26.5	30.5
Gelation	4	4	4
Texture	4	4	4

[0078]

<Test Example 4>

Tests were performed on the required amount of magnesium. The tests were performed by changing the magnesium content to one-third (21.7 mg/100 g of jelly food) of the formulation in Table 2 in Example 4-1 and 1.3 times (84.5 mg/100 g of jelly food) the formulation in Table 2 in Example 4-2. The results are as shown in Table 6. From the results, it was shown that a jelly food having favorable gelation and texture could be obtained even when the content of magnesium was set in a range of 21.7 to 84.5 mg per 100 g. In addition, from the results of Test Examples 2 and 4, it was considered that magnesium contributes to the gelation and texture improvement of the jelly food for the jelly having a high protein content and a neutral pH.

[0079]

[Table 6]

Table 6	Example 4-1	Example 4-2
Protein (soy protein) (unit: g)	5.8	5.8
Protein (collagen peptide) (unit: g)	6.8	6.8
Calcium A (tricalcium phosphate)	○	○
Potassium A (potassium lactate)	○	○
Magnesium A (magnesium oxide) (mg/100 g)	21.7	84.5
Mineral	9 other types	9 other types
Vitamin	11 types	11 types
Dietary fiber	○	○
pH	6.1	7.4
Gel strength (unit: g)	25.5	37.5
Gelation	5	5
Texture	3	4

[0080]

<Test Example 5>

The effect of the difference in the protein raw material on the jelly food was confirmed.

- 5 The results are as shown in Table 7. It was shown that the gelation and texture of the jelly were improved even when the type of protein was changed. It was shown that the gelation and texture of the jelly were improved even when the soy protein or the WPH alone was used.

[0081]

- 10 [Table 7]

Table 7	Example 5-1	Example 5-2	Example 5-3
Protein (soy protein) (unit: g)	5.8	12.6	
Protein (collagen peptide) (unit: g)			
Protein (WPH) (unit: g)	6.8		12.6
Calcium A (tricalcium phosphate)	○	○	○
Potassium A (potassium lactate)	○	○	○
Magnesium A (magnesium oxide)	○	○	○
Mineral	9 other types	9 other types	9 other types
Vitamin	11 types	11 types	11 types
Dietary fiber	○	○	○
pH	7.2	6.7	7.3
Gel strength (unit: g)	28.5	5.7	6.2
Gelation	5	4	4
Texture	4	5	5

INDUSTRIAL APPLICABILITY

[0082]

According to the present invention, it is possible to provide a novel jelly food.

CLAIMS

[Claim 1] A jelly food comprising:

a protein in an amount of 8% by mass or more; and

5 magnesium,

wherein a pH at a product temperature of 20°C is 5 to 8.

[Claim 2] The jelly food according to Claim 1,

wherein a content of the magnesium is 10 mg or more per 100 g of the food.

10

[Claim 3] The jelly food according to Claim 1,

wherein the magnesium is included as a sparingly soluble salt.

[Claim 4] The jelly food according to Claim 1,

15

wherein the protein is one or more selected from the group consisting of a soy protein, a whey protein, and a collagen peptide.

[Claim 5] The jelly food according to Claim 1,

wherein the protein is a product obtained by degradation treatment.

20

[Claim 6] The jelly food according to Claim 1,

wherein an amount of the protein having a molecular weight of 10,000 to 40,000 is 30% or less with respect to a total amount of the protein.

25

[Claim 7] The jelly food according to Claim 1,

wherein the jelly food comprises, in a packaged form including an amount corresponding to one serving, at least 11 or more types of vitamins, 12 or more types of minerals including the magnesium, and dietary fiber, and

contents of the 11 or more types of vitamins and the 12 or more types of

30

minerals including the magnesium in the amount corresponding to one serving each satisfy one-third of a required daily amount for an adult in “Dietary Reference Intakes for Japanese” issued by the Ministry of Health, Labour and Welfare of Japan.

[Claim 8] The jelly food according to Claim 1,
wherein the jelly food is a retort-heated product.

[Claim 9] The jelly food according to Claim 1,

5 wherein a gel strength measured by the following method at a product
temperature of 20°C is 5 to 6,000 g,
(method)

 using a rheometer, measurement is performed under conditions of a cylindrical
plunger having a diameter of 10 mm, a penetration speed of 60 mm/min, a penetration
10 depth of 15 mm, and a maximum load of 20 N.

[Claim 10] The jelly food according to Claim 1,

 wherein a content of a carbohydrate is 12 g or less per 100 g of the food, and
a content of a fat is 2 g or less per 100 g of the food.

15

[Claim 11] The jelly food according to Claim 1,

 wherein calories per 100 g of the food are 130 kcal or less.