

DESCRIPTION
PACKAGED SOFT FOOD

FIELD

5 [0001]

The present invention relates to a packaged soft food.

BACKGROUND

[0002]

10 In recent years, soft foods have been distributed as nursing care diets for elderly people who have difficulty with chewing and swallowing. The soft food is prepared by pureeing a solid food and solidifying and reshaping it into a desired shape. Such prepared food is soft and easy to swallow.

15 CITATION LIST

PATENT LITERATURE

[0003]

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20 SUMMARY

[0004]

25 Some of the above-mentioned soft food products are contained in a cup-shaped container together with a flavoring liquid and distributed in the form of a packaged soft food with the opening of the container covered by a lid. The soft food and flavoring liquid may be taken out of the container and placed into another container such as a

bowl for eating, or the container containing the soft food and the flavoring liquid may be used as plateware for eating.

[0005]

5 In a situation where the packaged soft food is introduced, a caregiver may need to assist a diner by scooping the soft food or the like with a spoon and bringing it into his/her mouth. In this case, the caregiver may feed the diner, for example, with a staple food such as
10 rice porridge and a main dish or side dish that contains soft foods and flavoring liquids in an alternating manner or in a combined manner.

[0006]

 With the former manner, one or more containers for the
15 main or side dish and a container for the staple food are required, which puts a considerable burden on the caregiver. With the latter manner, a container for mixing the main or side dish with the staple food is required, which also puts a considerable burden on the caregiver.

20 [0007]

 The object of the present invention is to offer a packaged soft food that can reduce a burden on assistance with meals.

[0008]

25 According to an aspect of the present invention, there is provided a packaged soft food comprising: a container body having an opening; a first food item contained in the

container body and composed of first soft food or of the first soft food and a first flavoring liquid; and a lid covering the opening, wherein a ratio $V1/V2$ of a volume $V1$ of the first food item to a capacity $V2$ of the container body is 0.7 or less.

[0009]

According to another aspect of the present invention, there is provided the packaged soft food according to the above aspect, wherein the ratio $V1/V2$ is 0.4 or higher.

[0010]

According to still another aspect of the present invention, there is provided the packaged soft food according to any one of the preceding aspects, wherein the first soft food has a hardness of 5×10^4 N/m² or lower.

[0011]

According to still another aspect of the present invention, there is provided the packaged soft food according to any one of the preceding aspects, wherein the first food item is composed of the first soft food and the first flavoring liquid, and the first flavoring liquid has a viscosity of 0.5 to 20.0 Pa·s.

[0012]

According to still another aspect of the present invention, there is provided the packaged soft food according to any one of the preceding aspects, wherein an indicator is provided on a sidewall portion of the container body in such a manner as to be positioned between

a top surface of the first food item and the opening if the packaged soft food is placed such that the opening is positioned above a bottom portion of the container body and also such that the bottom portion is horizontally laid.

5 [0013]

According to still another aspect of the present invention, there is provided the packaged soft food according to the above aspect, wherein the indicator includes a linear portion that extends in a direction
10 parallel to the bottom portion.

[0014]

According to still another aspect of the present invention, there is provided the packaged soft food according to any one of the preceding aspects, wherein an
15 indicator is provided on a sidewall portion of the container body to serve as a reference for an adding amount of a second food item at a time of adding the second food item into the container body containing the first food item.

20 [0015]

According to still another aspect of the present invention, there is provided a lookup-table-attached packaged soft food comprising: the packaged soft food according to the above aspect; and a lookup table
25 representing a relationship between a type of the second food item, the adding amount of the second food item indicated by the indicator, and a caloric amount or

ingredient amounts of the second food item added or a total value of the caloric amount or the ingredient amounts of the second food item and a caloric amount or ingredient amounts of the first food item.

5 [0016]

According to still another aspect of the present invention, there is provided a combination meal comprising: the packaged soft food according to any one of the preceding aspects; and a packaged food including a
10 container and a second food item contained in the container.

[0017]

According to still another aspect of the present invention, there is provided the combination meal according
15 to the above aspect, wherein the second food item is composed of second soft food having a hardness of 5×10^4 N/m² or lower, of a second flavoring liquid having a viscosity in a range of 0.5 to 10.0 Pa·s, or of the second soft food and the second flavoring liquid.

20 [0018]

According to still another aspect of the present invention, there is provided the combination meal according to any one of the preceding aspects, wherein the second food item is rice porridge.

25 [0019]

Alternatively, according to still another aspect of the present invention, there is provided the combination

meal according to any one of the preceding aspects, wherein the second food item includes tofu.

[0020]

According to still another aspect of the present invention, there is provided a lookup-table-attached combination meal comprising: the packaged soft food according to the above aspect; a packaged food including a container and the second food item contained in the container; and a lookup table representing a relationship between the amount of the second food item indicated by the indicator, and a caloric amount or ingredient amounts of the second food item added or a total value of the caloric amount or the ingredient amounts of the second food item and a caloric amount or ingredient amounts of the first food item.

[0021]

According to the present invention, a packaged soft food that can reduce a burden on assistance with meals is provided.

BRIEF DESCRIPTION OF THE DRAWINGS

[0022]

FIG. 1 is a cross-sectional view schematically showing a packaged soft food according to an embodiment of the present invention.

FIG. 2 is a top view schematically showing a container body containing the packaged soft food shown in FIG. 1.

FIG. 3 is a cross-sectional view of the container body

shown in FIG. 2, taken along line III-III.

FIG. 4 is a plan view showing an example of a packaged food that can be distributed in combination with the packaged soft food shown in FIG. 1.

5 FIG. 5 is a cross-sectional view schematically showing an exemplary usage of the packaged soft food shown in FIG. 1.

10 FIG. 6 is a cross-sectional view schematically showing another exemplary usage of the packaged soft food shown in FIG. 1.

FIG. 7 is a cross-sectional view schematically showing still another exemplary usage of the packaged soft food shown in FIG. 1.

DETAILED DESCRIPTION

15 [0023]

Hereinafter, embodiments of the present invention will be described with reference to the drawings. Elements having the same or similar functions will be denoted by the same reference numerals, and repetition of the description will be omitted.

[0024]

25 FIG. 1 is a cross-sectional view schematically showing a packaged soft food according to an embodiment of the present invention; FIG. 2 is a top view schematically showing a container body containing the packaged soft food shown in FIG. 1; and FIG. 3 is a cross-sectional view of the container body shown in FIG. 2, taken along line III-

III.

[0025]

A packaged soft food 1 shown in FIG. 1 includes a container body 11, a first food item 12, and a lid 13. In
5 FIG. 1, the packaged soft food 1 is placed in such a manner that the opening of the container body 11 is located above a bottom portion 111, which will be described later, and the bottom portion 111 is laid horizontally.

[0026]

10 The packaged soft food 1 is preferably a packaged food that does not require frozen storage, or more preferably a packaged food that is shelf-stable. At the time of consuming the first food item 12 in this packaged soft food 1, the first food item 12 contained in the container body
15 11 is heated, for example, in the microwave, in superheated steam, or in hot water. The packaged soft food 1 may be served without heating the first food item 12.

[0027]

As will be described in detail later, with regard to
20 the packaged soft food 1, the container body 11 can be used as plateware at the time of consuming the first food item 12. Furthermore, a second food different from the first food item 12 may be added into the container body 11 containing the first food item 12 in the packaged soft food
25 1.

[0028]

The container body 11 has an opening. Here, the

container body 11 has a shape of a cup. The container body 11 may have other shapes such as a shape of a bowl or a boat tray.

[0029]

5 The container body 11 may be a molded product. The container body 11 has, for example, a shape retaining property, with which the shape will be unchanged before and after introducing the first food item 12.

[0030]

10 The container body 11 is made of, for example, plastic. Alternatively, the container body 11 may be made of metal, glass, ceramic, or waterproofed paper. The container body 11 may include, on its inner surface, one or more layers of an inorganic material or an organic
15 material. The container body 11 may include, on its outer surface, a printing layer and a protective layer for protecting this printing layer. If the first food item 12 is to be microwaved in the container body 11, the container body 11 preferably does not include a metal layer.

20 [0031]

 In one example, the container body 11 is opaque. The container body 11 may include a transparent portion. If the container body 11 includes a transparent portion, the container body 11 may be provided with indicators 114a and
25 114b, which will be described later, on the outer surface of the container body 11 at a position where the transparent portion is provided.

[0032]

As shown in FIGS. 1 to 3, the container body 11 includes a bottom portion 111, a sidewall portion 112, and a flange portion 113.

5 [0033]

The bottom portion 111 has a circular shape with its central portion made to be convex toward the opening side of the container body 11. The central portion of the bottom portion 111 may not necessarily be made to be convex toward the opening side. Further, the bottom portion 111 may have any shape other than a circular shape, such as an elliptical shape, an oval shape, or a polygonal shape such as a square or a rectangle, when viewed in the thickness direction. If the bottom portion 111 has a polygonal shape as viewed in the thickness direction, each corner may be preferably rounded.

15 [0034]

The sidewall portion 112 extends upward from the edge of the bottom portion 111. The upper end of the sidewall portion 112 forms the opening of the container body 11. A space defined by the sidewall portion 112 and the bottom portion 111 increases in diameter from the bottom portion 111 toward the opening. This space may have a diameter substantially unchanged from the bottom portion 111 to the opening.

25 [0035]

The indicators 114a and 114b are provided on the

sidewall portion 112. The indicators 114a and 114b serve as markings for introducing the amount of the second food item into the container body 11 that contains the first food item 12.

5 [0036]

The indicators 114a and 114b are provided on the sidewall portion 112 in such a manner as to be positioned between the upper surface of the first food item 12 and the opening when the packaged soft food 1 is placed as shown in
10 FIG. 1. The indicators 114a and 114b are distanced from the top surface of the first food item 12 and from the opening, and they are also distanced from each other.

[0037]

Each of the indicators 114a and 114b is a linear
15 portion extending in a direction parallel to the bottom portion 111. In one example, the indicators 114a and 114b may be formed as boundary lines that are created, by discontinuously changing the inclination angle of the inner surface of the sidewall portion 112, between regions in
20 which the inclination angle is either unchanged or constantly changed. The indicators 114a and 114b may be grooves, linearly extending protrusions, or steps provided on the inner surface of the sidewall portion 112.
Alternatively, the indicators 114a and 114b may be printed
25 on the inner surface of the sidewall portion 112. If the sidewall portion 112 has visible-light transmissivity, the indicators 114a and 114b may be provided on the outer

surface of the sidewall portion 112.

[0038]

Each of the indicators 114a and 114b extends around the entire circumferential inner surface of the sidewall portion 112. Each of the indicators 114a and 114b may extend around only part of the circumferential inner surface of the sidewall portion 112, or may have a linear shape that includes broken lines.

[0039]

Each of the indicators 114a and 114b may have a shape other than a line. For instance, the indicators 114a and 114b may be hemispherical, pyramidal, conical, prismatic, or cylindrical recesses or protrusions. Alternatively, the indicators 114a and 114b may be formed of recesses or protrusions that represent characters or symbols.

[0040]

Alternatively, each of the indicators 114a and 114b may be a combination of two or more of the foregoing. For example, each of the indicators 114a and 114b may include a combination of a groove, a linear protrusion or a step, and recesses or protrusions representing characters or symbols.

[0041]

The sidewall portion 112 is provided with two indicators 114a and 114b; however, one of the indicators 114a and 114b may be omitted from the sidewall portion 112, or the sidewall portion 112 may be further provided with one or more indicators in addition to the indicators 114a

and 114b.

[0042]

The flange portion 113 extends outward from the upper end of the sidewall portion 112. The flange portion 113 has, in the vicinity of its outer edge portion, a step with which the height of the outer edge portion becomes lower than that of the remaining portion. The flange portion 113, however, may not be provided with a step.

[0043]

The flange portion 113 has a square shape with all of the corners rounded and an opening formed in the center. The flange portion 113, however, may have any other shape, for example, a circular shape with an opening formed at the center.

[0044]

If the container body 11 is designed to contain the first food item 12 for one serving, the capacity V2 of the container body 11 is preferably in a range of 170 to 250 milliliters.

[0045]

As will be described later, this container body 11 can be used as plateware. By taking such use into consideration, the ratio D/R of the depth D of the container body 11 to the opening diameter R of the container body 11 is preferably within the range of 0.25 to 0.8, and more preferably within the range of 0.35 to 0.56. With a smaller ratio D/R, scooping the first food item 12

and the second food item with a spoon becomes easier. A ratio D/R that is too small, however, may make it difficult to adjust with a high accuracy the amount of the second food item added using the indicators 114a and 114b.

5 [0046]

The opening diameter R of the container body 11 represents the diameter of a circle having the same area as that of the opening of the container body 11. The depth D of the container body 11 represents the maximum depth of
10 the container body 11, or in other words, the distance from the lowest region of the upper surface of the bottom portion 111 to the opening of the container body 11.

[0047]

The lid 13 is to cover the opening of the container
15 body 11. The lid 13 forms a container together with the container body 11.

[0048]

The lid 13 is a film adhered to the upper surface of the flange portion 113. This lid 13 includes, for example,
20 a base material made of polymer, paper, or a combination thereof, an adhesive layer for adhering the lid 13 to the upper surface of the flange portion 113, and a gas barrier layer interposed between the material and the layer. The lid 13 may also include a printing layer or a protective
25 layer on the upper surface thereof. In order to make the first food item 12 microwavable in the container that includes the container body 11 and the lid 13, it is

preferable that the lid 13 not include a metal layer.

[0049]

The lid 13 may not be a film adhered to the upper surface of the flange portion 113. For example, the lid 13
5 may close the opening of the container body 11 by snapping shut.

[0050]

The first food item 12 is contained in the container body 11. The first food item 12 contained in the container
10 body 11 is for one serving.

[0051]

The first food item 12 includes a first soft food 121 and a first flavoring liquid 122.

The first soft food 121 is, for example, a mousse-like
15 food. The first soft food 121 may be a protein containing liquid that is coagulated, such as pudding, through thermal denaturation of protein. Alternatively, the first soft food 121 may be, for example, jellies or almond jelly obtained by solidifying a liquid with a gelling agent.

20 [0052]

The mousse-like food is obtained by pureeing a solid food, mixing it with a coagulant or the like, and molding this mixture.

[0053]

25 The solid food may be an animal product, a plant product, or a combination of these. The solid food product may include meat, seafood, vegetables, mushrooms, seaweeds,

fruits, nuts, grains, or any two or more of these. The solid food may be an uncooked food product or a cooked food product. In the latter case, the solid food may further contain one or more of fats/oils and seasonings such as sugar and salt.

[0054]

The solid food is preferably pureed until the particle size becomes sufficiently small. With a smaller particle size, the smoothness of the first soft food 121 when put in the mouth increases. The particle size of the pureed food is preferably 2.0 millimeters or less, more preferably 0.5 millimeters or less, and even more preferably 0.1 millimeter or less. Here, the "particle diameter" is a value obtained through particle diameter distribution measurement by laser diffraction scattering.

[0055]

The coagulant is, for example, a protein that is thermally denatured and irreversibly solidified by heating. This protein is mixed with the above-mentioned pureed food, for example in the form of an aqueous solution. As the protein or its aqueous solution, egg white may be used, for example. The protein is added in such a manner that its concentration in the first soft food 121 becomes preferably within the range of 0.1 to 25% by mass, and more preferably within the range of 1 to 15% by mass.

[0056]

The mixture of the pureed food and the coagulant or

the like may be molded into a shape that is similar to the food before being pureed or a food having a taste that is to be reproduced by the first soft food 121. The mixture may be placed and heated into a mold. This heating is preferably performed at a temperature within the range of 50 to 130 °C, more preferably at a temperature within the range of 60 to 130 °C, and even more preferably at a temperature within the range of 60 to 130 °C. In this manner, thermal denaturation of the protein occurs, which coagulates the mixture.

[0057]

In one example, the first food item 12 may be a universal design food that is offered as a diet for those with dysphagia or mastication difficulty. Universal design foods are classified into four levels according to solidity and the like: "able to chew easily", "able to smash with gums", "able to smash with tongue", and "able to swallow without chewing". Foods at the level of "able to chew easily" are required to have a hardness of 5×10^5 N/m² or less, foods at the level of "able to smash with gums" are required to have a hardness of 5×10^4 N/m² or less, foods at the level of "able to smash with tongue" are required to have a hardness of 2×10^4 N/m² or less, and foods at the level of "able to swallow without chewing" are required to have a hardness of 5×10^3 N/m² or less.

[0058]

The first soft food 121 preferably has a hardness of

5×10^4 N/m² or less. The hardness of the first soft food 121 may be 5×10^3 N/m² or less.

[0059]

5 The first soft food 121 preferably has a hardness of 2×10^3 N/m² or more. If the first soft food 121 is too soft, it is difficult to maintain the shape of the first soft food 121. The hardness of the first soft food 121 may be 1×10^4 N/m² or more.

[0060]

10 The hardness of the soft food is measured with the method as described below.

As a measuring device, a device capable of measuring the compressive stress of a substance from its linear motion is used. The compressive stress is measured by
15 filling a 40-millimeter-diameter container with a sample to the height of 15 millimeters and compressing it by a 20-millimeter-diameter plunger. This measurement is conducted under a temperature of 20 ± 2 °C at a compression rate of 10 millimeters/sec until the clearance between the bottom of
20 the container and the plunger reaches 5 millimeters. For an amorphous sample or the like, the measurement may be conducted with a clearance determined to be 30% of the thickness of the sample. The measurement is repeated five times, and the average of three values excluding the
25 maximum value and the minimum value is adopted as a measurement value.

[0061]

The first flavoring liquid 122 is mixed with the first soft food 121. The first flavoring liquid 122 contains water and also contains a seasoning, an extract of an animal food material, or an extract of a plant food material, or a combination thereof. The first flavoring liquid 122 may be a solution, a dispersion liquid such as a sol, or a combination thereof.

[0062]

The first flavoring liquid 122 may further include a thickener. Examples of thickeners include, but are not limited to, guar gum, xanthan gum, tamarind gum, carrageenan, carboxymethyl cellulose, tara gum, locust bean gum, curdlan, sodium alginate, psyllium seed gum, gellan gum, gum arabic, karaya gum, chitin, chitosans, arabinogalactan, welan gum, sesbania gums, aloe vera extract, dammar resin, gum ghatti, elemi resin, dextran, oligo glucosamine, tororoaoi, microfibrillar cellulose, tragacanth gum, bacillus natto gum, fukuronori extract, furcellaran, cassia gum, macrohomopsis gum, pullulan, kidachi aloe extract, peach gum, aureobasidium culture solution, enzymatically hydrolyzed guar gum, rhamzan gum, glucosamine, levan, agrobacterium succinoglycan, yeast plasma membrane, linseed gum, artemisia seed gum, almond gum, sclero gum, or two or more of these.

[0063]

Preferably, the thickeners may be guar gum, xanthan gum, tamarind gum, carboxymethyl cellulose, tara gum,

locust bean gum, sodium alginate, psyllium seed gum, gum arabic, karaya gum, welan gum, tragacanth gum, bacillus natto gum, furcellaran, cassia gum, peach gum, enzymatically hydrolyzed guar gum, rhamsan gum, agrobacterium succinoglycan, or two or more of these.

5

[0064]

More preferably, the thickeners may be guar gum, xanthan gum, tamarind gum, carboxymethylcellulose, tara gum, locust bean gum, sodium alginate, psyllium seed gum, welan gum, tragacanth gum, rhamsan gum, agrobacterium succinoglycan, or two or more of these.

10

[0065]

As a thickener, it is preferable to use two or more kinds of thickeners having different properties in combination. For example, a thickener exhibiting an excellent thermal stability in terms of thickening performance may be combined with a thickener less likely to exhibit pseudoplastic properties.

15

[0066]

Those exhibiting an excellent heat stability with respect to thickening performance are less likely to be destroyed even under a temperature over 100 °C. Those exhibiting an excellent thermal stability regarding thickening performance therefore maintain high thickening performance even after undergoing a heating process in the production of the packaged soft food 1.

20

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[0067]

Here, the thermal stability regarding the thickening performance relates to a difference between the viscosity before heating and the viscosity after cooling from the heating to a room temperature. For instance, if retort sterilization is performed at 120 °C for 30 seconds in the production of the packaged soft food 1, this packaged soft food 1 can be considered to have an excellent thermal stability if the viscosity at room temperature before the retort sterilization equals to the viscosity at room temperature after the retort sterilization. On the other hand, if the viscosity at room temperature after the retort sterilization is lowered from the viscosity at room temperature before the retort sterilization, the thermal stability is low.

[0068]

A thickener that is less likely to exhibit pseudoplasticity experiences less of a change in structure or in molecular arrangement under an external force applied, and therefore a change in viscosity is less likely to occur. For example, in the case where the second food placed into the container body 11 containing the first food item 12 is rice porridge and water separation occurs in this porridge, a thickener that is less likely to exhibit pseudoplasticity will be quickly mixed with free water in comparison with a thickener that is likely to exhibit pseudoplasticity and has approximately the same level of viscosity in the measurement conducted by a rotational

viscometer.

[0069]

According to the above-described combination, the first flavoring liquid 122 exhibits a high viscosity during a transportation of the packaged soft food 1 or at the time of heating the first food item 12 for serving. The above-described combination is advantageous in preventing a low-viscosity liquid from being formed due to water separation when the second food is, for example, rice porridge.

[0070]

Those thickeners exhibiting excellent thermal stability with respect to thickening performance are preferably selected from xanthan gum, tara gum, locust bean gum, welan gum, enzymatically hydrolyzed guar gum, agrobacterium succinoglycan, or two or more of these.

[0071]

The thickeners that are less likely to exhibit pseudoplasticity are preferably selected from guar gum, tamarind gum, carboxymethyl cellulose, sodium alginate, psyllium seed gum, or two or more of these.

[0072]

The ratio of the amount of the thickener less likely to exhibit pseudoplastic properties to the total amount, which is the amount of the thickener exhibiting excellent thermal stability with respect to thickening performance and the thickener less likely to exhibit pseudoplastic properties, is preferably within the range of 5 to 50% by

mass, and more preferably within the range of 10 to 30% by mass. With this ratio increased, if the second food is rice porridge, the effect of suppressing the formation of a low-viscosity liquid that tends to occur due to the water separation can be enhanced. With the ratio increased, however, the viscosity of the first flavoring liquid 122 will considerably decrease when heating the first food item 12.

[0073]

10 In one example, the first flavoring liquid 122 includes xanthan gum and guar gum as thickeners. Further, in one example, the concentration of the thickeners in the first food item 12 is 0.16 to 1.16 % by mass.

[0074]

15 The first flavoring liquid 122 may further contain a gelling agent. The gelling agent is, for example, pectin, gelatin, agar, or any two or more of these. The concentration of the gelling agent in the first flavoring liquid 122 is preferably 0.2 % by mass or less, and more
20 preferably 0.1 % by mass or less.

[0075]

 The viscosity of the first flavoring liquid 122 is preferably within the range of 0.5 to 20.0 Pa·s, more preferably within the range of 0.5 to 10.0 Pa·s, and
25 further preferably within the range of 1.5 to 2.0 Pa·s. Solutions or sols at the above-mentioned levels of "able to smash with tongue" and "able to swallow without chewing"

are required to have a viscosity of 1500 mPa·s or higher. A sol at the "able to smash with tongue" level is required to have a hardness of 1×10^4 N/m² or less. A sol at the "able to swallow without chewing" level is required to have a hardness of 3×10^3 N/m² or less.

[0076]

With a first flavoring liquid 122 of a sufficiently high viscosity, the shaking of the first soft food 121 will be reduced at the time of transporting the packaged soft food 1 or the like. In addition, with such a first flavoring liquid 122 that has a sufficiently high viscosity, the movement of the first soft food 121 in the container body 11 will be reduced, as a result of which a contact of the first soft food 121 with the inner surface of the container or mutual contact of the ingredients of the first soft food 121 is less likely to occur. Thus, deformation of the first soft food 121 due to these factors can be suppressed.

[0077]

The viscosity of the flavoring liquid is expressed as a value in Pa·s, which is obtained by using a B-type rotational viscometer under a measurement temperature of 20 ± 2 °C, rotating the M3 rotor at 12 rpm, reading the value 2 minutes after this rotation, and multiplying the value by a corresponding coefficient.

[0078]

The ratio V_{1L}/V_{1S} of the volume V_{1L} of the first

flavoring liquid 122 to the volume V_{1S} of the first soft food 121 is preferably within the range of $1/4$ to 1 , and more preferably within the range of $2/5$ to $4/5$. The first flavoring liquid 122 smoothens the swallowing of the first soft food 121 and the second soft food. In addition, the first flavoring liquid 122 prevents the shape of the first soft food 121 from being deformed at the time of transporting the packaged soft food 1 or the like.

Furthermore, as will be described later, when the second food is rice porridge, the first flavoring liquid 122 containing a thickener will prevent the viscosity from decreasing due to water separation.

[0079]

The first food item 12 is, for example, a main dish or side dish. Examples of the main dish and side dish that may be reproduced by the first food item 12 include, but are not limited to, boiled food such as curry, stew, boiled vegetables, and sukiyaki; hamburger meat with a sauce; chicken with tomato sauce; and sautéed, stir-fried or steamed foods such as stir-fried meat and vegetables, boiled fish, and boiled vegetables combined with a sauce. The first food item 12 may be a dessert such as almond jelly.

[0080]

The ratio V_1/V_2 of the volume V_1 of the first food item 12 to the capacity V_2 of the container body 11 is 0.7 or less. The ratio V_1/V_2 is preferably 0.55 or less. If the

ratio $V1/V2$ is too large, a sufficient amount of the second food item cannot be added into the container body 11 containing the first food item 12.

[0081]

5 The ratio $V1/V2$ is preferably 0.4 or more, and more preferably 0.5 or more. If the ratio $V1/V2$ is too small, the first food item 12 tends to freely move in the container body 11 at the time of transporting the packaged soft food 1, as a result of which the shape of the first
10 soft food 121 tends to be deformed. Furthermore, if the ratio $V1/V2$ is too small, a large space may remain in the upper portion of the container body 11 even after the predetermined maximum amount of the second food item is added into the container body 11 containing the first food
15 item 12. For such a packaged soft food 1, a larger shelf space for displaying and storing will be needed.

[0082]

 If the first food item 12 is a main dish or a side dish, the second food item may be a staple food such as
20 rice porridge. With the packaged soft food 1 described above, a caregiver can add, for example, the second food item as a staple food into the container body 11 containing the first food item 12 as a main dish or side dish, and scoop with a spoon the main dish or side dish together with
25 the staple food. Thus, the packaged soft food 1 described above can reduce the burden on a caregiver who assists a person with difficulty in swallowing during a meal.

[0083]

The packaged soft food 1 can be distributed as it is. Alternatively, the packaged soft food 1 can be distributed in combination with a packaged food containing the second
5 food item, in other words, distributed as a combination meal including the packaged soft food 1 and a packaged food containing the second food item.

[0084]

A combination meal may include only one packaged soft
10 food 1 or a plurality of packaged soft foods 1. A combination meal may include only one packaged food containing the second food item, or a plurality of packaged foods. In the combination meal, the number of packaged soft foods 1 may be equal to or different from the number of
15 packaged foods containing the second food item.

[0085]

FIG. 4 is a plan view showing an example of a packaged food that can be distributed in combination with the packaged soft food shown in FIG. 1.

20 The packaged food 2 shown in FIG. 4 includes a container 21 and a second food item 22.

[0086]

The container 21 is a four-side sealed bag provided with a notch as an easy-to-open structure. The container 21
25 may be a bag such as a three-side sealed bag or a gusset bag. Alternatively, the container 21 may be a can or a bottle, or the container 21 may be a combination of a

container body and a lid each having the structure described above for the container body 11 and the lid 13, respectively.

[0087]

5 The second food item 22 is contained in the container 21. The container 21 contains one or more servings of the second food item 22. The container 21 may contain the second food item 22 for a plurality of servings or more.

[0088]

10 The second food item 22 may include the second soft food or the second flavoring liquid, or may include the second soft food and the second flavoring liquid. The second soft food preferably has the hardness as specified above with respect to the first soft food 121. The second
15 flavoring liquid preferably has a viscosity as defined above with respect to the first flavoring liquid 122.

[0089]

 If the first food item 12 is a main dish or a side dish, the second food item 22 may be a staple food such as
20 rice porridge.

[0090]

 The rice porridge is, for example, a quintuple-water rice porridge (zenngayu), which is 1 part by mass of rice cooked in 5 parts by mass of water; a septuple-water rice
25 porridge (nanabaigayu), which is 1 part by mass of rice cooked in 7 parts by mass of water; a decuple-water rice porridge (gobugayu), which is 1 part by mass of rice cooked

in 10 parts by mass of water; or a twentyfold-water rice porridge, which is 1 part by mass of rice cooked in 20 parts by mass of water. This ratio will be appropriately selected in accordance with the condition of the diner.

5 [0091]

The rice porridge may or may not contain salt. If the diner is hypertensive, the rice porridge will preferably be salt-free.

[0092]

10 The rice porridge may be a protein-intake controlled food. A lower intake of potassium, sodium, protein and phosphorus is recommended for renal patients. Rice porridge with a reduced protein content is suitable for such patients.

15 [0093]

If the first food item 12 is a main dish or a side dish, the second food item 22 may be tofu. A lower intake of carbohydrates is recommended for diabetic patients. Tofu is suitable for such patients.

20 [0094]

As mentioned earlier, the first food item 12 may be a dessert. If the first food item 12 is a dessert, the second food item 22 may be a sauce such as a fruit sauce or chocolate sauce.

25 [0095]

As described above, the second food item 22 that is to be combined with the first food item 12 can be selected

from a wide variety of foods. The type of second food item 22 can be selected according to the condition of the diner. That is, in accordance with the condition of the diner, it is possible to specify, for example, rice porridge or tofu, and
5 in the case of rice porridge, to determine what ratio of water to add with reference to the amount of rice, whether or not to add salt, and whether or not to control a protein content.

[0096]

10 Furthermore, the amount of the second food item 22 to be added into the container body 11 containing the first food item 12 can also be determined in accordance with the condition of the diner. For example, the amount of the second food item 22 to be added can be determined based on
15 an intake of calories or the amount of any specific ingredient specified for the diner. The indicators 114a and 114b facilitate the adding of the thus-determined amount of the second food item 22.

[0097]

20 FIG. 5 is a cross-sectional view schematically showing an exemplary usage of the packaged soft food shown in FIG. 1. FIG. 6 is a cross-sectional view schematically showing another exemplary usage of the packaged soft food shown in FIG. 1. FIG. 7 is a cross-sectional view schematically
25 showing still another exemplary usage of the packaged soft food shown in FIG. 1.

[0098]

In FIG. 5, the second food item 22 is placed into the container body 11 containing the first food item 12 up to the position of the opening of the container body 11. In FIG. 6, the second food item 22 is placed into the container body 11 containing the first food item 12 up to the position of the indicator 114b. In FIG. 7, the second food item 22 is placed into the container body 11 containing the first food item 12 up to the position of the indicator 114a. The amount of the second food item 22 to be added into the container body 11 containing the first food item 12 is adjustable to multiple levels by referring to the indicator 114a and 114b and the like.

[0099]

For the adjustment of the amount of the second food item 22 to be added with reference to the indicators 114a and 114b, a lookup table may be used, as described below.

[0100]

For instance, a lookup table may be prepared in advance, which presents the relationship between the types of the second food item 22, the added amounts of the second food item 22 indicated by the indicators 114a and 114b, and the calories and ingredient amounts of the second food item 22 to be added. Next, the calories or ingredient amounts of the second food item 22 to be added are calculated based on the intake of calories or ingredient amounts determined for the diner and the calories or ingredient amounts of the first food item 12 in accordance with the condition of the

diner. The type of the second food item 22 determined based on the condition of the diner and the calculated calories or ingredient amounts are looked up on the lookup table to determine which indicator is to be used for an adding amount.

5

[0101]

Alternatively, a lookup table may be prepared in advance, which presents the relationship among the types of the second food item 22, the added amounts of the second food item 22 indicated by the indicators 114a and 114b, and the total value of the calories or ingredient amounts of the second food item 22 and the calories or ingredient amounts of the first food item 12. Next, an intake of calories or ingredient amounts specified for the diner and the type of the second food item 22 determined based on the condition of the diner are looked up on this lookup table to determine which indicator is to be used for an adding amount.

10

15

[0102]

The packaged soft food 1 may be distributed in combination with the above lookup table. That is, the packaged soft food 1 can be distributed in the form of a packaged soft food that includes the packaged soft food 1 and a lookup table.

20

[0103]

25

A lookup-table-attached packaged soft food may include, for example, the lookup table in the form of a

printing layer provided on the container body 11 or the lid 13, or in the form of a printing layer provided on a package for packaging the packaged soft food 1.

Alternatively, the lookup-table-attached packaged soft food
5 may include the lookup table in the form of a card or booklet on which the lookup table is contained.

[0104]

Similarly, the combination meal including the packaged soft food 1 and the packaged food 2 can be distributed in
10 combination with the above lookup table. That is, the combination meal can be distributed in the form of these foods and the lookup table. In this case, since the type of the second food item 22 contained in the packaged food 2 is already identified, the lookup table will be sufficient if
15 the relationship between the adding amount of the second food item 22 as indicated by the indicators 114a and 114b and the calories or ingredient amounts of the second food item 22 added is indicated, or the relationship between the adding amount of the second food item 22 as indicated by
20 the indicators 114a and 114b and the total value of the calories or ingredient amounts of the second food item 22 and the calories or ingredient amounts of the first food item 12 is presented.

[0105]

25 The lookup-table-attached combination meal may include the lookup table, for example, in the form of a printing layer provided on the container body 11, the lid 13, or the

container 21, or in the form of a printing layer provided on a package that packages at least one of the packaged soft food 1 and the packaged food 2. Alternatively, the lookup-table-attached combination meal may include the
5 lookup table in the form of a card or booklet on which the lookup table is contained.

[0106]

As described above, the container body 11 containing the first food item 12 does not contain the second food
10 item 22 at the time of distribution. Thus, the type and amount of the second food item 22 can be selected in accordance with the condition of the diner.

[0107]

The second food item 22 can be added into the
15 container body 11 that contains the first food item 12, which can reduce the burden of assistance at the time of meal.

[0108]

Further, as described above, the indicators 114a and
20 114b facilitate the adjustment of the amount of the second food item 22 added. In this respect as well, the burden of assistance at a meal can be reduced.

[0109]

The first flavoring liquid 122 that includes a
25 thickener can reduce the risk of aspiration associated with free water, as described below. Upon heating the second food item 22, steam is generated, which may condense to

form free water. This free water increases the risk of aspiration. Even with the formation of free water, serving of a lowered viscosity liquid can be avoided by placing the second food item 22 into the container body 11 and mixing it with the first flavoring liquid 122 containing a thickener.

[0110]

If the second food item 22 is rice porridge, the first flavoring liquid 122 containing a thickener can reduce the risk of aspiration, as described below.

[0111]

When the rice porridge is eaten with a spoon, alpha amylase in saliva enters the rice porridge by way of the spoon. The alpha amylase in the rice porridge causes amylolysis, as a result of which water separation occurs.

[0112]

For a person with dysphagia, it often takes a long time to finish one meal. For this reason, alpha amylase may enter the rice porridge that the dysphagic person is having, which may form a large amount of free water. The low viscosity free water increases the risk of aspiration.

[0113]

The thickener suppresses water separation or a decrease in viscosity associated with the water separation. The results of a test conducted to this effect are indicated in the table below.

[0114]

	Immediately before eating			60 minutes after start of eating		
	Viscosity (mPa·s)		Temperature (°C)	Viscosity (mPa·s)		Temperature (°C)
	Average	Range		Average	Range	
Commercially available rice porridge	1388	1100-1850	53-63	20.2	2.45-55.2	26-28
Regular rice porridge	2067	1460-2450		41.3	30.6-54.9	
Thickened rice porridge	1917	1711-5038		881.3	491-1220	

[0115]

The regular rice porridge shown in the above table was prepared by the following method.

First, a half cup of white rice is measured and
5 rinsed. Next, the rice, which has been drained, is placed
into a pot with 900 milliliters of water and cooked over
medium heat. When it comes to a boil, the mixture is
lightly stirred. Immediately thereafter, the heat is
reduced to a simmer and the pot is covered with a small gap
10 left. The mixture continues to be heated for 30 to 40
minutes over a low heat, and then two pinches of salt are
added and stirred.

[0116]

The thickened rice porridge in the above table was
15 prepared with the method described above for the regular
rice porridge, except that a thickener was added when
cooking. As the thickener, xanthan gum was adopted. This
thickener was added in such a manner that the concentration
in the mixture of the rice, water, and thickener was 1% by
20 mass.

[0117]

In the above table, the viscosity and temperature
immediately before eating and the viscosity and temperature
60 minutes after the start of eating are shown for each
25 rice porridge item. For the measurement of the viscosity, a
tuning fork vibro viscometer SV-10 (manufactured by A&D
Company, Limited) was used. The obtained data was processed

by RsVisco Ver. 1.11 attached to this viscometer.

[0118]

As shown in the above table, the viscosity in both the commercially available rice porridge and the regular rice porridge significantly drops after 60 minutes from the start of eating as compared with the viscosity immediately before eating. In contrast, in the thickened rice porridge, the viscosity after 60 minutes from the start of eating is lower than the viscosity immediately before eating but still maintains a high value.

[0119]

As described above, the thickener suppresses a decrease in the viscosity associated with water separation. Thus, even if the second food item 22 is a rice porridge, a decrease in viscosity due to water separation can be suppressed by mixing the second food item 22 placed into the container body 11 with the first flavoring liquid 122 containing the thickener.

[0120]

Furthermore, even if such mixing is not performed, a decrease in viscosity due to water separation can still be suppressed, as described below.

[0121]

With the second food item 22 placed into the container body 11 containing the first food item 12 as shown in FIG. 6 or the like, when scooping the first soft food 121 together with the second food item 22 with a spoon, the

bowl of the spoon first passes through the layer of the second food item 22, and then enters the layer of the first food item 12. When the spoon bowl passes through the layer of the second food item 22, part of the alpha amylase attached to the spoon enters the second food item 22.

5

[0122]

The portion of the second food item 22 to which the alpha amylase has been transferred from the inner surface of the spoon bowl is immediately scooped with the spoon. Therefore, the alpha amylase transferred from the inner surface of the spoon bowl to the second food item 22 will not remain in the container body 11.

10

[0123]

The portion of the second food item 22 to which alpha amylase has been transferred from the outer surface of the spoon bowl, however, will not be immediately scooped with the spoon. The first flavoring liquid 122 and the second food item 22 quickly move to the dent portion formed in the layer of the first food item 12 when scooping the first soft food 121 together with the second food item 22 with the spoon. As a result, the alpha amylase transferred from the outer surface of the spoon bowl to the second food item 22 will be in contact with the thickener contained in the first flavoring liquid 122.

15

20

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[0124]

Thus, even if the second food item 22 is rice porridge, it is possible to make it difficult for the

viscosity to decrease due to water separation.

REFERENCE SIGNS LIST

[0125]

- 1 Packaged soft food
- 5 2 Packaged food
- 11 Container body
- 12 First food item
- 13 Lid
- 21 Container
- 10 22 Second food item
- 111 Bottom portion
- 112 Sidewall portion
- 113 Flange portion
- 114a Indicator
- 15 114b Indicator
- 121 First soft food
- 122 First flavoring liquid

CLAIMS

1. A packaged soft food comprising:
a container body having an opening;
a first food item contained in the container body and
5 composed of first soft food or of the first soft food and a
first flavoring liquid; and
a lid covering the opening,
wherein a ratio $V1/V2$ of a volume $V1$ of the first food
item to a capacity $V2$ of the container body is 0.7 or less.
- 10 2. The packaged soft food according to claim 1,
wherein the ratio $V1/V2$ is 0.4 or higher.
3. The packaged soft food according to claim 1,
wherein the first soft food has a hardness of 5×10^4 N/m² or
lower.
- 15 4. The packaged soft food according to claim 1,
wherein the first food item is composed of the first soft
food and the first flavoring liquid, and the first
flavoring liquid has a viscosity of 0.5 to 20.0 Pa·s.
- 20 5. The packaged soft food according to claim 1,
wherein an indicator is provided on a sidewall portion of
the container body in such a manner as to be positioned
between a top surface of the first food item and the
opening if the packaged soft food is placed such that the
opening is positioned above a bottom portion of the
25 container body and also such that the bottom portion is
horizontally laid.
6. The packaged soft food according to claim 5,

wherein the indicator includes a linear portion that extends in a direction parallel to the bottom portion.

7. The packaged soft food according to claim 1, wherein an indicator is provided on a sidewall portion of the container body to serve as a reference for an adding amount of a second food item at a time of adding the second food item into the container body containing the first food item.

8. A lookup-table-attached packaged soft food comprising:

the packaged soft food according to claim 7; and
a lookup table representing a relationship between a type of the second food item, the adding amount of the second food item indicated by the indicator, and a caloric amount or ingredient amounts of the second food item added or a total value of the caloric amount or the ingredient amounts of the second food item and a caloric amount or ingredient amounts of the first food item.

9. A combination meal comprising:
the packaged soft food according to any one of claims 1 to 7; and

a packaged food including a container and a second food item contained in the container.

10. The combination meal according to claim 9, wherein the second food item is composed of second soft food having a hardness of 5×10^4 N/m² or lower, of a second flavoring liquid having a viscosity in a range of 0.5 to

10.0 Pa's, or of the second soft food and the second
flavoring liquid.

11. The combination meal according to claim 9, wherein
the second food item is rice porridge.

5 12. The combination meal according to claim 9, wherein
the second food item includes tofu.

13. A lookup-table-attached combination meal
comprising:

the packaged soft food according to claim 7;

10 a packaged food including a container and the second
food item contained in the container; and

15 a lookup table representing a relationship between the
amount of the second food item indicated by the indicator,
and a caloric amount or ingredient amounts of the second
food item added or a total value of the caloric amount or
the ingredient amounts of the second food item and a
caloric amount or ingredient amounts of the first food
item.