

Emulsified Liquid-form Sesame Containing Seasoning, and a Method for Augmenting the Sesame Flavor of the Same

Technical Field

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This invention refers to an emulsified liquid-form sesame-containing seasoning, and to a method for augmenting the sesame flavor of the same.

Technical Background

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There has been more concern about health issues in recent years. The number of people who prefer to eat better food for their health, as much as possible, is steadily increasing. A typical example of this healthier food includes sesame. Sesame contains good flavor and much nutrition and has been used in various seasonings since a long time ago. Of such seasonings, a market for an emulsified liquid-form sesame-containing seasoning paste or ground sesame or the like (i.e. for use in sauces on “shabu-shabu”--thin slices of meat parboiled in hot soup--or on broiled meat or used as salad dressing or the like) is expanding, and various types of sesame-containing seasoning products are now being sold.

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When eating emulsified liquid-form seasoning, it is possible to taste a mild spicy flavor of which sesame or roasted sesame has particularly. The sesame flavor or its roasted taste can be augmented at some level merely by increasing the amount of the sesame. However, increasing the amount of the sesame paste or ground sesame deteriorates the smoothness of the sesame flavor, thus causing a rough flavored taste. Therefore, the sesame flavor becomes unbalanced, thus worsened and thus unfavorable in quality. Also, since sesame contains much oil and fat, an increase in the amount of sesame results in an excessive intake of oil and fat.

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As a conventional method for augmenting the sesame flavor or roasted taste, particularly, without increasing the amount of the sesame, it is suggested for example to add a spice such as ginger, garlic or the like to the emulsified liquid-form seasoning (see Patent Document 1). As a different art than the conventional one, it is suggested to add a slight amount of sesame-like flavor augmenting-agent to the emulsified liquid-form seasoning (see Patent

Documents 2, 3 and 4). As a further method than that of the conventional one, it has already been publicly suggested for example to produce an emulsified liquid-form sesame-containing ground-roasted seasoning and a gum substance, egg yolk, edible oil and fat and a high-intensity sweetener to control the viscosity at a predetermined value. The conventional art as shown in Patent Document 5 (see Patent Document 5) describes how to adjust the grinding-level of the sesame and how drastically to decrease the egg-yolk content that emulsifies and disperses the edible oil and fat. Thus, a small amount of egg yolk and a specified thickening agent are used to disperse uniformly the edible oil and fat.

Prior art Documents

Patent Documents

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Patent Document 1: Japanese-published, unexamined Patent Application No. 2012-147747.

Patent Document 2: Japanese-published, unexamined Patent Application No. 2010-148410.

Patent Document 3: Japanese-published, unexamined Patent Application No.

2010-148411.

Patent Document 4: Japanese-published, unexamined Patent Application No.

2010-148412.

Patent Document 5: Japanese-published, unexamined Patent Application No.

2012-135284.

Summary of the invention

Problems to be resolved by the invention

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However, it was impossible to augment the sesame flavor or roasted taste sufficiently by the method of adding spices or a sesame-like flavor-augmenting agent, and it was difficult to improve the total flavor balance. The method of adding a sesame-like flavor-augmenting agent was sometimes costly. Also, it was impossible to augment fully the sesame flavor or the roasted taste, even by the method of containing the ground-roasted sesame, the gum substance, the egg yolk, the edible oil and fat and the high-intensity sweetener to adjust the predetermined viscosity level. Thus, there was room left for improvement of the method.

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This invention was achieved in light of the foregoing problems with the aim of proving an emulsified liquid-form sesame-containing seasoning of which the sesame flavor and roasted taste and mildness are augmented, and of which the total flavor balance is good without having to increase the amount of the sesame. Another aim was to provide a method for steadily increasing the sesame flavor of the emulsified liquid-form sesame-containing seasoning without having to increase the amount of the sesame.

Means for resolving the problems

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The inventors of this invention repeatedly reviewed the issues to be resolved and paid attention especially to the acetic acid and salt content of the sesame, as well as to the edible oil and fat, the acetic acid and salt and the like contained in the emulsified liquid-form seasoning. They also paid attention to the degree of acid and to the pH level and arrived at the idea of standardizing the values of the sesame content. The inventors realized too that if the predetermined amount of processed egg yolk, high-intensity sweetener and

yeast-extract are mixed without having to increase the amount of sesame, that the sesame flavor and roasted taste and mildness will be enhanced, thus realizing an emulsified liquid-form sesame-containing seasoning with a totally good balanced flavor. The inventors enthusiastically then did more research and development based on the above-referenced facts and finalized the invention as described below.

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Means (1) to (6) for resolving the above problems are described hereinafter.

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(1) The first aspect of this invention refers to an emulsified liquid-form sesame-containing seasoning, characterized in comprising sesame, edible oil and fat, acetic acid, salt and processed egg yolk, of which the acetic acid content is 0.4% by mass or more and 1.1% by mass or less, of which the salt content is 3.2% by mass or more and 6.1% mass or less, of which the acidity is set at 0.45% by mass or more and 1.30% by mass or less, of which the pH value is set at 3.9 or more and 4.5 or less, of which the egg yolk content is 0.80% by mass or more, of which the high-intensity sweetener content is

0.005% by mass or more and 0.04% by mass or less, and of which the yeast-extract content is 0.10% by mass or more and 0.40% by mass or less.

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(2) The second aspect of this invention refers to an emulsified liquid-form sesame-containing seasoning according to the first aspect, characterized in that the viscosity, measured by a B-type viscometer at room temperature, is 400mPa·s or more and 2,000mPa·s or less.

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(3) The third aspect of this invention refers to an emulsified liquid-form sesame-containing seasoning, according to the first or second aspect of this invention, characterized in that the high-intensity sweetener is sucralose.

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(4) The fourth aspect of this invention refers to an emulsified liquid-form sesame-containing seasoning, according to any one of the first to third aspects of this invention, characterized in that the sesame is roasted sesame.

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- (5) The fifth aspect of this invention refers to an emulsified liquid-form sesame-containing seasoning, according to any one of the first to fourth aspects of this invention, characterized in that the emulsified liquid-form sesame-containing seasoning is gravy, seasoning, sauce or the like.

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- (6) The sixth aspect of this invention refers to a method for augmenting the sesame flavor of the emulsified liquid-form sesame-containing seasoning including the edible oil and fat, acetic acid, salt and processed egg yolk, characterized in comprising the emulsifying steps of the acetic acid content being set at 0.4% by mass or more and 1.1% by mass or less, of the salt content being set at 3.2% by mass or more and 6.1% by mass or less, thus being able to set the acidity at 0.45% by mass or more and 1.30% by mass or less, of the pH value being set at 3.9 or more and 4.5 or less, of adding the egg yolk content of 0.80% by mass or more, of the high-intensity sweetener content being set at 0.005% by mass or more and 0.04% by mass or less, and of the yeast-extract content being set at 0.10% by mass or more and 0.40%

by mass or less.

Effect of the invention

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As described above, the first to fifth aspects of this invention allow for augmenting the sesame flavor and the roasted taste and mildness without having to increase the amount of the sesame, thus providing an emulsified liquid-form sesame-containing seasoning having a good balanced flavor on the whole. The sixth aspect of this invention allows for providing a method for steadily augmenting the sesame flavor of the emulsified liquid-form sesame-containing seasoning without having to increase the amount of the sesame.

Best mode for carrying out the invention

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Hereinafter, the emulsified liquid-form sesame-containing seasoning and the method for augmenting the sesame flavor of the emulsified liquid-form sesame-containing seasoning are described.

The emulsified liquid-form sesame-containing seasoning of this invention

means a liquid-form seasoning containing at least sesame, edible oil and fat, acetic acid and salt, which ingredients are equally emulsified and dispersed in the aqueous phase.

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Of this invention, the sesame (generically, *Sesamum Indicum* L.) includes but is not limited to white sesame, black sesame, golden sesame, cha (tea) sesame or any combination of those of an arbitrary ratio. Also, the sesame to be used includes unground sesame seed and ground sesame seed. The method for obtaining the ground sesame includes but is not limited to, for example, the preferred process of grinding the sesame seed using a food-processor, a grindstone, a milder, a ball-mill, a pin-mill or a bead-mill or the like. The sesame used can include sesame seeds with or without hulls. Ground sesame seeds can include fresh-ground sesame seeds not having been heat-processed and, for example, can include roasted-ground sesame seeds (i.e. roasted ground-up sesame seeds). Using the latter is advantageous in easily applying the roasted taste to the liquid-form seasoning, even if the amount of the sesame is comparatively small. The roasted-ground sesame seeds can be obtained in the usual manner by roasting and grinding them. Specifically, sesame seeds

with hulls are to be roasted preferably in a roasting oven by direct heat or by far-infrared heat or the like. Then the seeds are to be ground by the above-referenced grinding process. The content of the ground sesame-seeds of the liquid-form seasoning should be, but is not limited to, 1.0% by mass or more and 20% by mass or less, preferably 2.0% by mass or more and 15% by mass or less.

0019

The edible oil and fat of this invention includes, but is not limited to, various edible oils and fats that are often used in conventional emulsified liquid-form seasoning. Specifically, such oils and fats include plant-derived oils such as soybean oil, canola oil, safflower oil, corn oil, sunflower oil, rice oil, cotton-seed oil, palm oil, olive oil, coconut oil, peanut oil, sesame oil or the like or includes animal-derived fats and oil such as lard, beef fat, chicken fat, mutton suet, whale oil or the like that can be used without having to be distilled or chemically treated or enzyme-treated. The aforementioned edible oils and fats can be used separately or in combination of two types or more. Also, the edible oil and fat to be used in the liquid-form seasoning should be, but is not limited to, for example, of 1% by mass or more and 50% by mass or less, preferably 5%

by mass or more and 40% by mass or less.

0020

The acetic acid of this invention is mainly derived from edible vinegar that includes but is not limited to, for example, grain vinegar, rice vinegar, black-rice vinegar, apple-cider vinegar, fermented (alcohol) vinegar produced by distilled alcohol, and synthetic vinegar or the like. These edible vinegars can be used separately or in combination of two or more. Of the selected vinegar, the acetic acid used in the liquid-form seasoning is to be set at 0.4% by mass or more and 1.1% by mass or less, preferably at 0.5% by mass or more and 1.0% by mass or less. The above ranges of the acetic acid should be preconditioned to achieve the desired sesame flavor and roasted taste and mildness. Hence, if the content of the acetic acid is not enough, it makes it impossible to achieve the appropriate acid taste or bactericidal effect of the liquid-form seasoning. Besides, the acidity might then be lower than the preferable ranges of this invention, so that the pH value might then be higher than the preferable ranges of this invention. Yet, if there is too much acetic acid, then not only is an excessive acid taste added to the liquid-form seasoning, but the acidity is higher than the preferable ranges of this invention. Thus, the pH value might

then be lower than the preferable ranges of this invention.

0021

The acidity of this invention is set at 0.45% by mass or more and 1.30% by mass or less, preferably at 0.50% by mass or more and 1.20% by mass or less. The pH value is set at 3.9 or more and 4.5 or less, preferably at 4.0 or more and 4.4 or less, since the above ranges of the acidity and pH values should be preconditioned to achieve the desired sesame flavor and roasted taste and mildness. The degree of acidity can be measured by neutralization-titration using sodium hydroxide, and then calculated by converting the organic-acid content of the seasoning into the acetic-acid content.

0022

The salt used in this invention is mainly derived from common salt (i.e. salt used in soy sauce or the like). The salt content is set at 3.2% by mass or more and 6.1% by mass or less, preferably at 3.3% by mass or more and 5.6% by mass or less, since the above ranges of the salt content should be preconditioned to achieve the desired sesame flavor and roasted taste and mildness.

0023

Of this invention, the emulsified liquid-form sesame-containing seasoning contains sesame, edible oil and fat, acetic acid, salt, processed egg yoke, high-intensity sweetener and yeast-extract.

0024

The processed egg yolk used in this invention means an egg yolk of which some processing is done to the fresh egg yolk obtained from a hen's egg. Specifically, the fresh egg yolk has been processed by any one or more ways: by filtering, drying, sterilizing, freezing or enzymatic-treated with a protein (degradative enzyme) or the like, or by reducing the sugar by using yeast or the like, or by reducing the cholesterol or the like. Such a processed egg yolk acts as an emulsifying agent in the liquid-form seasoning. Salt, sugar or the like may be added to the liquid-form seasoning to stabilize the processed egg yolk. Thus, it is necessary to set an appropriate range of the egg-yolk content. In other words, the egg-yolk content of this invention should be set at 0.8% by mass or more, preferably at 0.80% by mass or more and 2.2% by mass or less, more preferably at 1.2% by mass or more and 2.2% by mass or less, since the above ranges of the egg-yolk content should be preconditioned to achieve the desired sesame flavor

and roasted taste and mildness together with the other conditions (i.e. the predetermined amounts of high-intensity sweetener and yeast-extract). Hence, if the egg-yolk content is not enough, the liquid-form seasoning may not be fully emulsified so that the sesame flavor and roasted taste and mildness may not be fully achieved. Yet, if the egg-yolk content is too much, the egg-yolk flavor of the liquid-form seasoning will be too strong, thus destroying the total balanced flavor of the seasoning.

0025

The high-intensity sweetener used in this invention means a sweetener with a high degree of sweetness, specifically a sweetener that is excessively sweeter (i.e. over 100 times) than sugar. Such a high-intensity sweetener includes but is not limited to sucralose (degree of sweetness: 600 times as sweet as sugar), stevia (degree of sweetness: 300 times), acesulfame K (200 times), thaumatin (2,500 times), glycyrrhiza glabra licorice-root extract (250 times), neotame (9,000 times) or the like. The degree of sweetness is defined as the intensity of sweetness per one-gram of sweetener to one-gram of sugar. The above high-intensity sweeteners can be used separately or in combination of two or more types.

0026

The high-intensity sweetener content is set at 0.005% by mass or more and 0.04% by mass or less, preferably at 0.01% by mass or more and 0.03% by mass or less, since the above ranges of the high-intensity sweetener content should be preconditioned to achieve the desired sesame flavor and roasted taste and mildness, together with the other conditions (i.e. the predetermined amount of the processed egg yolk and yeast-extract). Hence, if the amount of high-intensity sweetener is not enough, it is difficult then to augment fully the sesame flavor and roasted taste and mildness. Yet, if the amount of high-intensity sweetener is too much, then the sweetness of the liquid-form seasoning becomes excessive, thus likely destroying the total balanced flavor of the seasoning. The preferred high-intensity sweetener of this invention is sucralose, which steadily achieves the desired sesame flavor and roasted taste and mildness.

0027

Of this invention, the yeast-extract means an extract obtained by autolyzing the active component of the yeast or by treating it with an enzyme or with a hot

liquid or the like. The main components contained in the extract are amino acid, nucleic-acid-related substances, minerals and vitamins or the like. The yeast-extract content should be set at 0.10% by mass or more and 0.40% by mass or less, since the above ranges of the yeast-extract should be preconditioned to achieve the desired sesame flavor and roasted taste and mildness, together with other the conditions (i.e. the predetermined amounts of the processed egg yolk and high-intensity sweetener).

0028

Regarding the emulsified liquid-form sesame-containing seasoning of this invention, the preferred viscosity, to be measured by a B-type viscometer (rotor No. 3; No. of rotations: 30rpm) at room temperature, is 400mPa·s or more and 2,000mPa·s or less, more preferably 600mPa·s or more and 1,800mPa·s or less, most preferably 700mPa·s or more and 1,600mPa·s or less. The above ranges of viscosity should achieve the desired sesame flavor and roasted taste and mildness.

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The emulsified liquid-form sesame-containing seasoning of this invention

preferably includes soy sauce, “miso” (fermented soybean paste), “dashi” soup-extract (broth), sugar, citrus, seasoning materials, a thickening agent and a fragrance or the like. Soy sauce includes, for example, thick soy sauce, thin soy sauce, “tamari” soy sauce (thick-and-deep-taste soy sauce), “saishikomi” soy sauce (two-step brewed soy sauce) and white soy sauce or the like. “Miso” (fermented soy-bean paste) includes for example “shiro miso” (white fermented soy-bean paste), “aka miso” (red fermented soy-bean paste), “mugi miso” (fermented barley-paste), “Sendai miso,” “Haccho miso” and “kome miso” (fermented rice-paste) or the like. “Dashi” soup-extract (broth) includes, for example, liquid (“umami”—savory taste) extracted from meats, sea foods, vegetables, mushrooms and seaweed or the like but preferably a liquid extracted from dried fish-flakes or the like. Sugar includes, for example, fructose/glucose liquid sugar, granulated sugar, superfine sugar, soft-brown sugar, “turbinado” sugar, white-coarse sugar, medium-coarse sugar, and glutinous starch-syrup or the like. Citrus includes, for example, “yuzu” (citrus “junos”), “sudachi” (citrus “sudachi”), lemon, “mikan” (a Japanese orange: citrus “unshiu”) and “kabosu” (citrus “sphaerocarpa”) or the like. Seasoning materials include, for example, glutamic sodium and inosinic-acid sodium or the like. The thickening agent is a polysaccharide thickener, including, for

example, “guar” gum, “xanthane” gum, locust-bean gum, “tamarind-seed” gum, “gellan” gum, gum Arabic, “monatou” gum, and gum “tragacanth” or the like.

Fragrances include, for example, a flavoring material such as a sesame flavoring to augment the sesame smell or fragrance so as to add the citrus smell and which can be variously used according to need. In using a sesame flavoring, the sesame flavor and roasted taste and mildness are augmented with an expectant synergetic effect by the use of the processed egg yolk and high-intensity sweetener and yeast-extract.

0030

Hereinafter, tests to realize more embodiments of the emulsified liquid-form sesame-containing seasoning are described.

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(1) Test 1 (to determine the acetic acid content, acidity and pH value)

0032

In this test, the emulsified liquid-form sesame-containing seasoning (sesame-containing emulsified sauce) was prepared as described below

according to the blending quantity as shown in Chart 1. Firstly, water, soy sauce, umami-seasoning (flavor-enhancer), sugar, vinegar, salt, a thickening agent, processed egg yolk, edible oil and fat and an acidulant were put into the stirring-tank to stir, combine, thicken and emulsify them. Then the ground-up sesame seeds (grounded-up roasted sesame seeds) were poured into the stirring tank to prepare the emulsified sesame-containing seasoning. By this test, multiple samples (the five samples of 1A to 1E) were obtained by changing the blending quantity of the vinegar and the acidulant, thus making it possible to realize the various instances of the acetic-acid content, the acidity and the pH values. The processed egg yolk used in this test was a powder-processed egg yolk. The egg-yolk content should be calculated at 200% by mass of the processed egg yolk.

0033

For more details, Test Example 1A specifies that the blending quantity of the vinegar should be 2.04% by mass, and that the acidulant should be 0% by mass. Test Example 1B specifies that the blending quantity of the vinegar should be 2.72% by mass, and that the acidulant should be 0% by mass. Test Example 1C specifies that the blending quantity of the vinegar should be 5.0% by mass, and

that of the acidulant should be 0% by mass. Test Example 1D specifies that the blending quantity of the vinegar should be 7.5% by mass, and that the acidulant should be 0% by mass. Test Example 1F specifies that the blending quantity of the vinegar should be 7.5% by mass, and that the acidulant should be 0.4% by mass.

0034

The publicly known analysis was done on all five samples to investigate each value of the acetic acid content (% by mass), of the acidity (%), of the salt content (% by mass) and of the pH value. Regarding each sample, the viscosity ($\text{mPa}\cdot\text{s}$) was also measured by a B-type viscometer at 20 degrees temperature Celsius. The result is shown below in Chart 1.

0035

As shown in Chart 1 in the order of 1A to 1E, the acetic acid content in each case was 0.31% by mass, 0.40% by mass, 0.74% by mass, 1.10% by mass and 1.10% by mass respectively. It was recognized that the acidity increases as long as the vinegar and acidulant contents are increased. On the other hand, in each case the amount of salt was 5.0% by mass and the viscosity was $1,300\text{mPa}\cdot\text{s}$.

0036

Next, an organoleptic test was done on the above five samples for evaluation. Specifically, five examiners did an organoleptic test to evaluate the roasted taste and sesame flavor and mildness of each sample that had just been prepared. The absolute evaluations were done based on the four ratings of ◎ (Very preferable), ○ (Preferable), △ (Not so preferable) and × (Not preferable). The results of the evaluation are shown in Chart 1.

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As shown in Chart 1 regarding the roasted taste, Test Example 1C and 1D earned the rating of Preferable (○). Regarding the sesame flavor, the four Test Examples of 1A, 1B, 1C and 1D earned the rating of Preferable (○). Regarding the mildness, the two Test Samples of 1B and 1C earned the rating of Preferable (○). As described above, the total evaluation was found to be Preferable (i.e. ◎ or ○) for Test Examples 1B, 1C and 1D. In other words, the above total evaluation proved that the acetic acid content should be 0.4% by mass or more and 1.1% by mass or less, that the acidity should be 0.45% by mass or more and 1.30% by mass or less, and that the pH value should be 3.9 or

more and 4.5 or less to improve the sesame flavor and roasted taste and mildness.

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Chart 1

	Test Example	Test 1				
		1A	1B	1C	1D	1E
Blending quantity	Water	+	+	+	+	+
	Soy sauce	100.0	100.0	100.0	100.0	100.0
	Umami-seasoning	10.0	10.0	10.0	10.0	10.0
	Sugar	100.0	100.0	100.0	100.0	100.0
	Ground-up sesame	100.0	100.0	100.0	100.0	100.0
	Vinegar	20.4	27.2	50.0	75.0	75.0
	Salt	35.7	35.7	35.7	35.7	35.7
	Thickening agent	3.3	3.3	3.3	3.3	3.3
	Processed egg yolk	5.0	5.0	5.0	5.0	5.0
	Edible oil and fat	200.0	200.0	200.0	200.0	200.0
	Acidulant	0.0	0.0	0.0	2.0	4.0
	Sucralose	—	—	—	—	—
	Yeast extract	—	—	—	—	—
	Dried bonito extract	—	—	—	—	—
Total blending quantity		1000	1000	1000	1000	1000
Analysis	Acetic acid (% by mass)	0.31	0.40	0.74	1.10	1.10
	Acidity (%)	0.36	0.45	0.79	1.30	1.50
	pH	4.6	4.5	4.3	3.9	3.8

value	Salt content (% by mass)	5.0	5.0	5.0	5.0	5.0
	Viscosity(mPa·s)	1300	1300	1300	1300	1300
Evaluation	Roasted taste	△	△	○	○	△
	Sesame flavor	○	○	○	○	△
	Mildness	△	○	○	△	×
	Comprehensive evaluation	△	○	◎	○	×

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(2) Test 2 (to determine the salt content)

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On the basis of the procedures of the aforementioned Test 1 and of the blending quantity of Chart 2, the emulsified liquid-form sesame-containing seasoning (sesame-containing emulsified sauce) was prepared. By this test, multiple samples (the five samples of 2A to 2E) were obtained by changing the blending quantity of the salt content, thus making it possible to realize the various instances of the salt content. For more details, Test Example 2A specifies that the blending quantity of the salt is 1.51% by mass. Test Example 2B specifies that the blending quantity of the salt is 1.72% by mass. Test Example 2C specifies that the blending quantity of the salt is 3.57% by mass. Test Example 2D specifies that the blending quantity of the salt is 4.71% by mass. Test

Example 1E specifies that the blending quantity of the salt is 5.23% by mass.

0041

A similar analysis to Test 1 was done on the above-referenced five samples. The results are shown in Chart 2. The acetic acid content in each case was 0.74% by mass. The acidity in each case was 0.79%. Of Test Examples 2A to 2D, the pH value was 4.3. Of Test Example 2E, it was 4.2. Of Test Examples 2A to 2E, the salt content was 3.0% by mass, 3.2% by mass, 5.0% by mass, 6.1% by mass and 6.6% by mass respectively. Of Text Examples 2A and 2B, the viscosity was 1,400mPa·s. Of Text Examples 2C to 2E, it was 1,300mPa·s.

0042

A similar organoleptic test to Test 1 was done on the above-referenced five samples. The results are shown in Chart 2. As shown in Chart 2, of the four Test Examples 2B to 2E, the roasted taste was found to be Preferable (○). Of the three Test Samples 2B to 2D, the sesame flavor was found to be Preferable (○). Of the three Test Samples 2A to 2C, the mildness was found to be Preferable (○). As a result, the total evaluation of Test Examples 2B, 2C and 2D was found to be Preferable (i.e. ◎ or ○), thus proving that the salt content

should be 3.2% by mass or more and 6.1% by mass or less to augment the sesame flavor and roasted taste and mildness.

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Chart 2

	Test Example	Test 2				
		2A	2B	2C	2D	2E
Blending quantity	Water	+	+	+	+	+
	Soy sauce	100.0	100.0	100.0	100.0	100.0
	Umami-seasoning	10.0	10.0	10.0	10.0	10.0
	Sugar	100.0	100.0	100.0	100.0	100.0
	Ground-up sesame	100.0	100.0	100.0	100.0	100.0
	Vinegar	50.0	50.0	50.0	50.0	50.0
	Salt	15.1	17.2	35.7	47.1	52.3
	Thickening agent	3.3	3.3	3.3	3.3	3.3
	Processed egg yolk	5.0	5.0	5.0	5.0	5.0
	Edible oil and fat	200.0	200.0	200.0	200.0	200.0
	Acidulant	—	—	—	—	—
	Sucralose	—	—	—	—	—
	Yeast extract	—	—	—	—	—
	Dried bonito extract	—	—	—	—	—
Total blending quantity		1000	1000	1000	1000	1000
Analysis	Acetic acid (% by mass)	0.74	0.74	0.74	0.74	0.74
	Acidity (%)	0.79	0.79	0.79	0.79	0.79
	pH	4.3	4.3	4.3	4.3	4.2

value	Salt content (% by mass)	3.0	3.2	5.0	6.1	6.6
	Viscosity (mPa·s)	1400	1400	1300	1300	1300
Evaluation	Roasted taste	△	○	○	○	○
	Sesame flavor	△	○	○	○	△
	Mildness	○	○	○	△	×
	Comprehensive evaluation	△	◎	◎	○	×

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(3) Test 3 (to determine the viscosity)

0045

On the basis of the procedures of the aforementioned Test 1 and of the blending quantity of Chart 3, the emulsified liquid-form sesame-containing seasoning (sesame-containing emulsified sauce) was prepared. By this test, multiple samples (the six samples of 3A to 3F) were obtained by changing the blending quantity of the salt content, thus making it possible to realize the various instances of viscosity. For more details, Test Example 3A specifies that the blending quantity of the thickening agent should be 0.08% by mass. Test Example 3B specifies that the blending quantity of the thickening agent should be 0.12% by mass. Test Example 3C specifies that the blending quantity of the thickening agent should be 0.26% by mass. Test Example 3D specifies that the

blending quantity of the thickening agent should be 0.33% by mass. Test Example 3E specifies that the blending quantity of the thickening agent should be 0.44% by mass. Test Example 3F specifies that the blending quantity of the thickening agent should be 0.46% by mass.

0046

A similar analysis to Test 1 was done on the above-referenced six samples. The results are shown in Chart 3. In each case, the acetic acid content was 0.74% by mass. In each case, the acidity was 0.79% by mass. In each case, the pH value was 4.3. In each case, the salt content was 5.0% by mass. Of Test Examples 3A to 3F, the viscosity was 200mPa·s, 400mPa·s, 1,100mPa·s, 1,300mPa·s, 2,000mPa·s and 2,500mPa·s respectively.

0047

A similar organoleptic test to Test 1 was done on the above-referenced six samples. The results are shown in Chart 3. As shown in Chart 3, of the five Test Examples 3A to 3E, the roasted taste was found to be Preferable (○). Of the three Test Samples 3B to 3D, the sesame flavor was found to be Preferable (○). Of the four Test Samples 2C to 2F, the mildness was found to be

Preferable (○). As a result, the total evaluation of Test Examples 3B, 3C, 3D and 3E was found to be Preferable (i.e. ◎ or ○), thus proving that the viscosity should be 400mPa·s or more and 2,000mPa·s or less to augment the sesame flavor and roasted taste and mildness.

0048

Chart 3

	Test Example	Test 3					
		3A	3B	3C	3D	3E	3F
Blending quantity	Water	+	+	+	+	+	+
	Soy sauce	100.0	100.0	100.0	100.0	100.0	100.0
	Umami-seasoning	10.0	10.0	10.0	10.0	10.0	10.0
	Sugar	100.0	100.0	100.0	100.0	100.0	100.0
	Ground-up sesame	100.0	100.0	100.0	100.0	100.0	100.0
	Vinegar	50.0	50.0	50.0	50.0	50.0	50.0
	Salt	35.7	35.7	35.7	35.7	35.7	35.7
	Thickening agent	0.8	1.2	2.6	3.3	4.4	4.6
	Processed egg yolk	5.0	5.0	5.0	5.0	5.0	5.0
	Edible oil and fat	200.0	200.0	200.0	200.0	200.0	200.0
	Acidulant	—	—	—	—	—	—
	Sucralose	—	—	—	—	—	—
	Yeast extract	—	—	—	—	—	—
	Dried bonito extract	—	—	—	—	—	—
Total blending quantity		1000	1000	1000	1000	1000	1000

Analysis value	Acetic acid (% by mass)	0.74	0.74	0.74	0.74	0.74	0.74
	Acidity (%)	0.79	0.79	0.79	0.79	0.79	0.79
	pH	4.3	4.3	4.3	4.3	4.3	4.3
	Salt content (% by mass)	5.0	5.0	5.0	5.0	5.0	5.0
	Viscosity(mPa·s)	200	400	1100	1300	2000	2500
Evaluation	Roasted taste	○	○	○	○	○	△
	Sesame flavor	△	○	○	○	△	△
	Mildness	△	△	○	○	○	○
	Comprehensive evaluation	△	○	◎	◎	○	△

0049

(4) Test 4 (to determine the content of the edible oil and fat)

0050

On the basis of the procedures of the aforementioned Test 1 and of the blending-quantity of Chart 4, the emulsified liquid-form sesame-containing seasoning (sesame-containing emulsified sauce) was prepared. By this test, multiple samples (the three samples of 4A to 4C) were obtained by changing the blending quantities of the edible oil and fat and thickening agent, thus making it possible to realize the various contents of the edible oil and fat. For more details, Test Example 4A specifies that the blending quantities of the edible oil

and fat and thickening agent are 5.0% by mass and 0.51% by mass respectively. Test Example 4B specifies that the blending quantities of the edible oil and fat and thickening agent are 20.0% by mass and 0.33% by mass respectively. Test Example 4C specifies that the blending quantities of the edible oil and fat and thickening agent are 40.0% by mass and 0.10% by mass respectively.

0051

A similar analysis to Test 1 was done on the above-referenced three samples. The results are shown in Chart 4. In each case, the acetic acid content was 0.74% by mass. In each case, the acidity was 0.79% by mass. In each case, the pH value was 4.3. In each case, the salt content was 5.0% by mass. Of Test Examples 4A, 4B and 4C, the viscosity was 1,400mPa·s, 1,300mPa·s and 1,900mPa·s respectively.

0052

A similar organoleptic test to Test 1 was done on the above-referenced three samples. The results are shown in Chart 4. As shown in Chart 4, of the three Test Examples 4A to 4C, the sesame flavor and roasted taste was found to be Preferable (○), and there was no outstanding difference. Of the two Test

Samples 4A and 4B, the mildness was found to be Preferable (○). As a result, the total evaluation of Test Examples 4A, 4B and 4C was found to be good (i.e. ◎ or ○), thus recognizing that the blending quantities of the edible oil and fat should be 5.0% by mass or more and 40.0% by mass or less to augment the sesame flavor and roasted taste and mildness.

0053

Chart 4

	Test Example	Test 4		
		4A	4B	4C
Blending quantity	Water	+	+	+
	Soy sauce	100.0	100.0	100.0
	Umami-seasoning	10.0	10.0	10.0
	Sugar	100.0	100.0	100.0
	Ground-up sesame	100.0	100.0	100.0
	Vinegar	50.0	50.0	50.0
	Salt	35.7	35.7	35.7
	Thickening agent	5.1	3.3	1.0
	Processed egg yolk	5.0	5.0	5.0
	Edible oil and fat	50.0	200.0	400.0
	Acidulant	—	—	—
	Sucralose	—	—	—
	Yeast extract	—	—	—
	Dried bonito extract	—	—	—

Total blending quantity		1000	1000	1000
Analysis value	Acetic acid (% by mass)	0.74	0.74	0.74
	Acidity (%)	0.79	0.79	0.79
	pH	4.3	4.3	4.3
	Salt content (% by mass)	5.0	5.0	5.0
	Viscosity (mPa·s)	1400	1300	1900
Evaluation	Roasted taste	○	○	○
	Sesame flavor	○	○	○
	Mildness	△	○	○
	Comprehensive evaluation	○	◎	◎

0054

(5) Test 5 (to determine the content of the processed egg yolk)

0055

On the basis of the procedures of the aforementioned Test 1 and of the blending quantity of Chart 5, the sesame-containing emulsified liquid-form seasoning (sesame-containing emulsified sauce) was prepared. By this test, multiple samples (the five samples of 5A to 5E) were obtained by changing the blending quantities of the processed egg yolk and thickening agent, thus making it possible to realize the various contents of the processed egg yolk. For more details, Test Example 5A specifies that the blending quantities of the processed

egg yolk and thickening agent are 0.3% and 0.33% by mass respectively. Test Example 5B specifies that the blending quantities of the processed egg yolk and thickening agent are 0.4% and 0.33% by mass respectively. Test Example 5C specifies that the blending quantities of the processed egg yolk and thickening agent are 0.6% and 0.32% by mass respectively. Test Example 5D specifies that the blending quantities of the processed egg yolk and thickening agent are 1.1% and 0.30% by mass respectively. Test Example 5E specifies that the blending quantities of the processed egg yolk and thickening agent are 1.3% and 0.30% by mass respectively.

0056

A similar analysis to Test 1 was done on the above-referenced five samples. The results are shown in Chart 5. In each case, the acetic acid content was 0.74% by mass. In each case, the acidity was 0.79% by mass. In each case, the pH value was 4.3. Of Test Examples 5A to 5D, the salt content was 5.0% by mass. Of Test Example 5E, it was 5.1% by mass. Of Test Examples 4A to 5E, the viscosity was 1,200mPa · s, 1,300mPa · s, 1,400mPa · s, 1,400mPa · s and 1,500mPa · s respectively.

0057

A similar organoleptic test to Test 1 was done on the above-referenced five samples. However, besides the evaluations of ◎ (Very preferable), ○ (Preferable), △ (Not so preferable) and × (Not preferable), other comparative evaluation levels, based on the evaluation of ◎ (Very preferable), are stipulated as ◎ whenever the level is almost the same as ◎, as ◎2 whenever the level is slightly better than ◎, as ◎3 whenever the level is better than ◎, as ◎4 whenever the level is much better than ◎, or as ◎5 whenever the level is extremely better than ◎. The results are shown in Chart 5.

0058

As shown in Chart 5, of the four Test Examples 5A to 5D, the roasted taste was evaluated as ○ (Preferable). Thus, it was recognized that the roasted taste was not augmented compared to the results of the above Tests 1 to 4. Of Test Examples 5B, 5C and 5D, the sesame flavor was evaluated as ○ (Preferable). Of the Text Examples 5C and 5D, the mildness was evaluated as ◎ (Very preferable). Of Test Examples 5B and 5E, the mildness was evaluated as ○ (Preferable). As a result, the total evaluation of Test Examples 5B, 5C and 5D was ◎ (Very preferable) or better. Especially, the total evaluation of Text

Examples 5C and 5D was better than ©2, thus exceeding the level ©(Very preferable) of the above Tests 1 to 4. In other words, the above total evaluations proved that adding processed egg yolk is effective in augmenting the sesame flavor and roasted taste and mildness, and that the processed egg-yolk content preferably should be 0.4% by mass or more and 1.1% by mass or less, more preferably 0.6% by mass or more and 1.1% by mass or less. Also, since the processed egg yolk used in Test 5 can be calculated as 200% of the egg-yolk content per the mass of the processed egg yolk, it was proved that the egg-yolk content of the liquid-form seasoning should be i.e. 0.8% by mass or more and 2.2% by mass or less or 1.2% by mass or more and 2.2% by mass or less.

0059

Chart 5

	Test Example	Test 5				
		5A	5B	5C	5D	5E
Blending quantity	Water	+	+	+	+	+
	Soy sauce	100.0	100.0	100.0	100.0	100.0
	Umami-seasoning	10.0	10.0	10.0	10.0	10.0
	Sugar	100.0	100.0	100.0	100.0	100.0
	Ground-up sesame	100.0	100.0	100.0	100.0	100.0
	Vinegar	50.0	50.0	50.0	50.0	50.0
	Salt	35.7	35.7	35.7	35.7	35.7

	Thickening agent	3.3	3.3	3.2	3.0	3.0
	Processed egg yolk	3.0	4.0	6.0	11.0	13.0
	Edible oil and fat	200.0	200.0	200.0	200.0	200.0
	Acidulant	—	—	—	—	—
	Sucralose	—	—	—	—	—
	Yeast extract	—	—	—	—	—
	Dried bonito extract	—	—	—	—	—
Total blending quantity		1000	1000	1000	1000	1000
Analysis value	Acetic acid (% by mass)	0.74	0.74	0.74	0.74	0.74
	Acidity (%)	0.79	0.79	0.79	0.79	0.79
	pH	4.3	4.3	4.3	4.3	4.3
	Salt content (% by mass)	5.0	5.0	5.0	5.0	5.1
	Viscosity (mPa·s)	1200	1300	1400	1400	1500
Evaluation	Roasted taste	○	○	○	○	△
	Sesame flavor	△	○	○	○	△
	Mildness	△	○	◎	◎	○
	Comprehensive evaluation	△	◎	◎2	◎2	△

0060

(6)Test 6 (an additional test on the high-intensity sweetener and yeast-extract)

0061

On the basis of the procedures of the aforementioned Test 1 and of the blending

quantity of Chart 5, the emulsified liquid-form sesame-containing seasoning (sesame-containing emulsified sauce) was prepared. By this test, the processed egg-yolk content fixed as 0.6% by mass was added in combination with a kind of high-intensity sweetener such as sucralose and yeast-extract (or dried “bonito” extract) that were accordingly mixed, thus obtaining the multiple samples (the eight samples of 6A to 6H). For more details, Test Examples 6A, 6B, 6C and 6D specify that the blending quantities of the sucralose is 0.005% by mass, 0.01% by mass, 0.02% by mass and 0.04% by mass respectively, excluding the yeast-extract. Test Examples 6E, 6F and 6G specify that the blending quantities of the sucralose is 0.02% by mass and that of the yeast-extract is 0.1% by mass, 0.2% by mass, and 0.4% by mass respectively. Text Example 6H specifies that the blending quantities of the sucralose is 0.02% by mass, and that the yeast-extract is replaced by the dried “bonito” extract, which is 0.2% by mass.

0062

A similar analysis to Test 1 was done on the above-referenced eight samples (6A to 6H). The results are shown in Chart 6. In each case, the acetic acid content was 0.74% by mass. In each case, the acidity was 0.79% by mass. In

each case, the pH value was 4.3. In each case, the salt content was 5.0% by mass. In each case, the viscosity was 1,200mPa·s.

0063

A similar organoleptic test to Test 1 was done on the above-referenced eight samples. Being the same as the above Test 4, the other evaluation levels of ◎2, ◎3, ◎4 and ◎5 were added here.

0064

As shown in Chart 6, of the seven Test Samples 6A to 6C and 6E to 6H, the roasted taste was evaluated as ◎(Very preferable). Of Test Sample 6D, it was evaluated as ○(Preferable). Therefore, it was recognized that it was possible to augment the roasted taste, which had not been achieved just by adding the processed egg yolk. Of Test Samples 6A to 6H, the sesame flavor was evaluated as ◎(Very preferable). Of Test Samples 6A to 6H, the mildness too was evaluated as ◎(Very preferable).

0065

As a result, it was recognized that the total evaluation of Test Samples 6A to

6H exceeded the evaluation level ◎(Very preferable) of the above Test 5. Among other results, as shown in Test Samples 6E, 6F and 6G, adding the predetermined amount of processed egg yolk, sucralose and yeast-extract makes it possible to achieve the best evaluation level ◎5. However, adding the predetermined amount of processed egg yolk, sucralose and dried-bonito extract, or just adding the predetermined amount of processed egg yolk and sucralose did not make it possible to exceed the evaluation ◎5. Therefore, it was proved effectively that the processed egg yolk of 0.4% by mass or more should be added along with the sucralose of 0.005% by mass or more and 0.04% by mass or less and along with the yeast-extract of 0.10% by mass or more and 0.40% by mass or less to augment surely the sesame flavor and roasted taste and mildness. Regarding Test Samples 6E, 6F and 6G, not only was the sesame flavor and roasted taste and mildness augmented, but the total balance of flavor was made excellent as well.

0066

Chart 6

	Test Example	Test 6							
		6A	6B	6C	6D	6E	6F	6G	6H
	Water	+	+	+	+	+	+	+	+
	Soy sauce	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Blending quantity	Umami-seasoning	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
	Sugar	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Ground-up sesame	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Vinegar	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0
	Salt	35.7	35.7	35.7	35.7	35.7	35.7	35.7	35.7
	Thickening agent	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
	Processed egg yolk	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
	Edible oil and fat	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0
	Acidulant	—	—	—	—	—	—	—	—
	Sucralose	0.05	0.1	0.2	0.4	0.2	0.2	0.2	0.2
	Yeast extract	—	—	—	—	1.0	2.0	4.0	—
	Dried bonito extract	—	—	—	—	—	—	—	2.0
Total blending quantity		1000	1000	1000	1000	1000	1000	1000	1000
Analysis value	Acetic acid (% by mass)	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
	Acidity (%)	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
	pH	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
	Salt content (% by mass)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
	Viscosity (mPa·s)	1200	1200	1200	1200	1200	1200	1200	1200
Evaluation	Roasted taste	◎	◎	◎	○	◎	◎	◎	◎
	Sesame flavor	◎	◎	◎	◎	◎	◎	◎	◎
	Mildness	◎	◎	◎	◎	◎	◎	◎	◎
	Comprehensive evaluation	◎4	◎4	◎4	◎3	◎5	◎5	◎5	◎4

(4) Brief overview

0067

As described above, the embodiment of this invention provides an emulsified liquid-form sesame-containing seasoning of which the sesame flavor and roasted taste and mildness are augmented, and that the total balance of flavor

is made good without having to increase the amount of sesame. Also, the embodiment of this invention provides a method for increasing steadily the sesame flavor of the emulsified liquid-form sesame-containing seasoning without having to increase the amount of sesame.

0068

The embodiments of this invention can be modified as long as they are not deviated from the main subject of this invention. As described above, for example, the emulsified liquid-form sesame-containing seasoning is embodied in this invention. However, an emulsified liquid-form sesame-containing dressing, a “ponzu” vinegar seasoning (citrus-seasoned soy sauce & dressing), a sauce or a soup or the like can also be embodied in this invention.

CLAIMS

1. An emulsified liquid-form sesame-containing seasoning, characterized in comprising sesame, edible oil and fat, acetic acid, salt and processed egg yolk, of which the acetic acid content is 0.4% by mass or more and 1.1% by mass or less, of which the salt content is 3.2% by mass or more and 6.1% mass or less, of which the acidity is set at 0.45% by mass or more and 1.30% by mass or less, of which the pH value is set at 3.9 or more and 4.5 or less, of which the egg yolk content is 0.80% by mass or more, of which the high-intensity sweetener content is 0.005% by mass or more and 0.04% by mass or less, and of which the yeast-extract content is 0.10% by mass or more and 0.40% by mass or less.
2. An emulsified liquid-form sesame-containing seasoning according to Claim 1, characterized in that the viscosity, measured by a B-type viscometer at room temperature, is 400mPa·s or more and 2,000mPa·s or less.
3. An emulsified liquid-form sesame-containing seasoning according to Claim 1 or Claim 2, characterized in that the high-intensity sweetener is sucralose.
4. An emulsified liquid-form sesame-containing seasoning according to any one of Claims 1 to 3, characterized in that the sesame is roasted

sesame.

5. An emulsified liquid-form sesame-containing seasoning according to any one of Claims 1 to 4, characterized in that the emulsified liquid-form sesame-containing seasoning is gravy, seasoning, sauce or the like.
6. A method for augmenting the sesame flavor of the emulsified liquid-form sesame-containing seasoning including the edible oil and fat, acetic acid, salt and processed egg yolk, characterized in comprising the emulsifying steps of the acetic acid content being set at 0.4% by mass or more and 1.1% by mass or less, of the salt content being set at 3.2% by mass or more and 6.1% by mass or less, thus being able to set the acidity at 0.45% by mass or more and 1.30% by mass or less, of the pH value being set at 3.9 or more and 4.5 or less, of adding the egg yolk content of 0.80% by mass or more, of the high-intensity sweetener content being set at 0.005% by mass or more and 0.04% by mass or less, and of the yeast-extract content being set at 0.10% by mass or more and 0.40% by mass or less.