Title: METHOD OF MAKING A BLACK-GINSENG AND A CONDENSED BLACK-GINSENG AND A BLACK-GINSENG PRESERVED IN HONEY

Abstract: Disclosed are methods for manufacturing black ginseng, black ginseng extracts, and honey-soaked black ginseng confectionary, featuring conducting nine rounds of a maturing process subsequent to a steaming process, without a drying process therebetween. The black ginseng products can be commercially favorable commodities competing with conventional ginseng and red ginseng products, and have an excellent taste and flavor for persons of all ages all over the world, in addition to being healthful for the body.
Description

METHODS OF MAKING A BLACK-GINSENG AND A CONDENSED BLACK-GINSENG AND A BLACK-GINSENG PRESERVED IN HONEY

Technical Field

[1] The present invention relates to the manufacture of black ginseng, a black ginseng extract and a honey-soaked black ginseng confectionary from raw fresh ginseng. Black ginseng is manufactured by conducting a cleaning process, a primary steaming process, a primary maturing process, a secondary steaming process, a secondary steaming process, a form fixing process, a tertiary ~ nonary steaming and tertiary ~ nonary maturing process, and a drying process, in that order. The black ginseng extract is manufactured by conducting a cleaning process, a primary steaming process, a primary maturing process, a secondary steaming process, a form fixing process, tertiary ~ nonary steaming and tertiary ~ nonary maturing processes, an extracting process, a filtering process, a concentrating process, a purifying process, and a concentrating process in that order. The honey-soaked black ginseng confectionary is manufactured by conducting a cleaning process, a surface dehydrating and skin peeling process, a neat arranging process, a honey soaking process, a primary steaming process, a primary maturing process, a honey soaking process, a secondary steaming process, a secondary maturing process, a honey soaking process, a form fixing process, tertiary ~ nonary steaming and tertiary ~ nonary maturing processes, a primary drying process, a pruning process, a secondary drying process and a packaging process.

Background Art

[2] Generally, red ginseng is prepared from fresh ginseng through washing, sorting and trimming, steaming, drying, selecting, inspecting and packaging, in that order. In almost all cases, the most important processes for the preparation of red ginseng, namely steaming and drying, are performed once.

[3] For the preparation of sugar-soaked ginseng confectionary, a typical method comprises washing ginseng to remove foreign matter therefrom, peeling the ginseng, steaming the ginseng, soaking the ginseng with sugar, removing excess sugar, drying the ginseng in forced air, and packaging it.

[4] As for black ginseng, the preparation thereof is largely dependent on steaming and drying processes. However, the large number of rounds of these processes causes ginseng ingredients to undergo pyrolysis or other chemical changes leading to carbonization. In addition, when it is exposed to low temperatures for a long period of time in the manufacturing processes thereof, the ginseng, having a high water content,
is prone to deteriorate or lose effective ingredients as a result of germinal activity. Where black ginseng is prepared without the separation of the root body from the root hairs, a significant difference occurs in the rate and extent of drying between the root body and the root hairs. For example, if the root body of ginseng is dried to a water content of 14% or lower, the root hairs become too dry. On the other hand, if a drying process is performed on the basis of the water content of root hairs, the root body contains too much water.

Conventional methods of preparing sugar-soaked ginseng confectionary are quite standardized, resulting in uniform tastes and flavors.

Disclosure of Invention
Technical Problem

Accordingly, the present invention has been made keeping in mind the above problems occurring in the prior art, and an object of the present invention is to provide methods for manufacturing black ginseng products, including black ginseng itself, black ginseng extracts and a honey-soaked black ginseng confectionary, which can be commercially valuable commodities competing with conventional ginseng and red ginseng products, are healthful for the body, and have an excellent taste and flavor for persons of all ages all over the world.

It is another object of the present invention to provide methods for manufacturing black ginseng products, including black ginseng itself, black ginseng extracts and a honey-soaked black ginseng confectionary, by which the black ginseng can contain effective saponin ingredients without loss thereof attributable to carbonization, retain the original form of the starting fresh ginseng material, increase in value, and have water uniformly distributed throughout the root body and hairs.

It is a further object of the present invention to provide a method of manufacturing a black ginseng extract containing an effective saponin components in an amount of 80 mg/g ~ 300 mg/g.

It is a still further object of the present invention to provide a method of manufacturing a honey-soaked black ginseng confectionary which retains the effective ingredients of the starting material and has characteristic excellent taste and flavor.

Technical Solution

In accordance with an aspect of the present invention, there is provided a method for manufacturing black ginseng from fresh ginseng, comprising: cleaning raw fresh ginseng with water carefully, so as not to injure the integrity and ingredients of the fresh ginseng; primarily steaming the cleaned ginseng at 88 ~ 96°C for 2.5 ~ 4 hours with the ginseng's own water in a steaming chamber with alcohol provided into the chamber; primarily maturing the ginseng at 35°C or lower for 24 ~ 72 hours in a
maturing chamber with no additional provision of water to the chamber in such a manner that the water content of the ginseng is not decreased below 20%; secondarily steaming the primarily matured ginseng at 65 ~ 75°C for 1.5 ~ 2.5 hours in a steaming chamber with the provision of alcohol into the chamber; secondarily maturing the secondarily steamed ginseng at 35°C or less for 24 hours in a maturing chamber in such a manner that external water is added to the chamber to maintain the water content of the ginseng at 20% or higher; fixing the form of the secondarily matured ginseng by wrapping the secondarily matured ginseng with linen cloth or tying the secondarily matured ginseng with silk thread; further steaming and maturing the ginseng seven times in the same manner as in the secondary steaming step and the secondary maturing step, respectively, to finish a nonary steaming step and a nonary maturing step; and drying the nonarily matured ginseng in the sun in such a manner that the ginseng has a water content of 14%.

[11] In this method, the primarily steaming step is conducted in the steaming chamber, the steaming chamber being maintained at a pressure of 0 kg/cm3 ~ 1 kg/cm2 and being changed in temperature from 88 ~ 96°C within 2.5 ~ 4 hours depending on the thickness of the ginseng.

[12] Provided that it is 100% pure, the alcohol is provided in an amount of 5 ~ 10 % into the steaming chamber in all nine rounds of steaming.

[13] Preferably, each maturing step from the primarily maturing step to the nonarily maturing step is conducted immediately after the corresponding steaming step so as to prevent the loss of effective saponin ingredients attributable to carbonization, which may occur during the steaming steps.

[14] In accordance with another aspect of the present invention, there is provided a method for manufacturing a black ginseng extract, comprising: cleaning raw fresh ginseng with water carefully so as not to injure the integrity and ingredients of the fresh ginseng; primarily steaming the cleaned ginseng at 88 ~ 96°C for 2.5 ~ 4 hours with the ginseng’s own water in a steaming chamber with alcohol provided into the chamber; primarily maturing the ginseng at 35°C or lower for 24 ~ 72 hours in a maturing chamber with no additional provision of water to the chamber in such a manner that the water content of the ginseng is not decreased to less than 20%; secondarily steaming the primarily matured ginseng at 65 ~ 75°C for 1.5 ~ 2.5 hours in a steaming chamber with the provision of alcohol into the chamber; secondarily maturing the secondarily steamed ginseng at 35°C or less for 24 hours in a maturing chamber in such a manner that external water is added to the chamber to maintain the water content of the ginseng at 20% or higher; fixing the form of the secondarily matured ginseng by wrapping the secondarily matured ginseng with linen cloth or tying the secondarily matured ginseng with silk thread; further steaming and maturing
the ginseng seven times in the same manner as in the secondarily steaming step and the secondarily maturing step, respectively, to finish nine rounds of steaming and maturing in total; immersing the ginseng three times in 70% alcohol at 75°C or less to give a rough extract including effective saponin ingredients; filtering the rough extract through a microfilter to remove impurities other than effective saponin ingredients to give a filtrate; concentrating the filtrate in a concentrator which is evacuated so that the evaporation point of the solvent used in the extracting step is kept at 45°C or less, the concentrator being heated at 75°C or less; dissolving the concentrate in 70% alcohol and removing impurities from the solution through precipitation; and concentrating the solution to the extent that its solid content increases to 60% or higher.

In accordance with a further aspect of the present invention, there is provided a method for manufacturing a black ginseng extract, comprising: immersing the black ginseng prepared according to the method three times in 70% alcohol at 75°C or less to give a rough extract including effective saponin ingredients; filtering the rough extract through a microfilter to remove impurities other than effective saponin ingredients to give a filtrate; concentrating the filtrate in a concentrator which is evacuated so that the evaporation point of the solvent used in the extracting step is maintained at 45°C or less, the concentrator being heated at 75°C or less; dissolving the concentrate in 70% alcohol and removing impurities from the solution through precipitation; and concentrating the solution to the extent that the solid content thereof increases to 60% or higher.

Preferably, the black ginseng extract contains effective saponin ingredients including ginsenoside Rg1, ginsenoside Rg2, ginsenoside Rg3, ginsenoside Rd, ginsenoside Re, ginsenoside Rf, ginsenoside Rb1, ginsenoside Rb2, and ginsenoside Rc in an amount of 80 mg/g ~ 300 mg/g.

The black ginseng is in the form of whole fresh ginseng, in the form of a root body devoid of root hairs, or in the form of root hairs removed from the root body thereof.

In accordance with a still further aspect of the present invention, there is provided a method for manufacturing honey-soaked ginseng confectionary, comprising: cleaning raw fresh ginseng with water to remove impurities from the surface thereof carefully so as not to injure the integrity and ingredients of the fresh ginseng selecting whole fresh ginseng and dehydrating the surface of the selected ginseng cutting the ginseng into pieces, peeling the ginseng or destroying the surface of the ginseng neatly arranging the ginseng pieces or the whole ginseng on a sieve soaking the ginseng in honey; primarily steaming the honey-coated ginseng at 88 ~ 96°C for 2.5 ~ 4 hours with the water contained therein; primarily maturing the primarily steamed ginseng in a maturing chamber at a temperature less than 35°C for 8 hours; soaking the primarily matured ginseng in honey; secondarily steaming the soaked ginseng at 65 ~ 75°C for
1.5 ~ 2.5 hours; secondarily maturing the secondarily steamed ginseng in a maturing chamber at a temperature less than 35°C for 8 hours; further soaking, steaming and maturing the ginseng seven times in the same manner as in the above soaking step, the secondary steaming step and the secondary maturing step, respectively, to finish nine rounds of steaming and maturing in total; semi-drying the nonarily matured ginseng pruning the semi-dried ginseng drying the pruned ginseng to the extent that the water content of the ginseng meets a predetermined standard; packaging the dried ginseng into vacuum packs; and sterilizing the ginseng in vacuum packs through thermal exposure at 90°C for 30 min.

In this method, no external water is added in any of the eight rounds from the secondary steaming step to the nonary steaming step.

Advantageous Effects

The black ginseng products, including black ginseng itself, black ginseng extracts and honey-soaked black ginseng confectionary, manufactured according to the methods of the present invention can be a commodity competing with conventional ginseng and red ginseng products, and has an excellent taste and flavor for persons of all ages all over the world, in addition to being is healthful for the body.

Also, the natural maturation, instead of drying, subsequent to the steaming processes, allows the ginseng material to retain a constant level of water therein, thereby preventing the loss of effective saponin ingredients attributable to carbonization which may occur during the steaming process. According to the present invention, whole black ginseng can be obtained. Further, the provision of alcohol during the steaming processes results in an increase in the value of the final product. Sun drying guarantees the uniform distribution of water throughout the root body and hairs of the black ginseng.

The black ginseng extract manufactured according to the method of the present invention contains effective saponin components in an amount of 80 mg/g ~ 300 mg/g.

In the honey-soaked black ginseng confectionary, the effective ingredients of the starting material are retained because, after being applied to the black ginseng, honey is completely absorbed into the body of the black ginseng during the steaming process. Also, the repetition of the steaming process in a suitable condition confers the honey-soaked black ginseng confectionary with characteristic and excellent tastes and flavors.

Best Mode for Carrying Out the Invention

Black ginseng is prepared according to the processes described below.

1. First process: Material Cleaning

Intact fresh ginseng is carefully cleaned with water lest the integrity and ingredients thereof be lost. Foreign matters should be removed from the surface of fresh ginseng
using clean water. However, if fresh ginseng is cleaned too much, it is likely to be damaged, resulting in the loss of effective ingredients and degradation in quality.

After washing, the ginseng roots are sorted according to material statuses, including quality and thickness, because optimal processing conditions, including time periods and temperatures, may change with the quality and status of the material to be treated. Fundamentally, ginseng roots are processed whole: if this is unsuitable, ginseng roots may be divided into bodies and hairs, which are then processed separately.

2. Second Process: Primary Steaming

After the completion of the first process, the material is steamed with its own water content at 88-96 °C for 2.5-4 hours in a steam chamber while alcohol is fed into the steam chamber.

According to the present invention, nine rounds of steaming processes are performed for the preparation of black ginseng. In this primary steaming process, additional water is not supplied, but the water retained by the fresh ginseng is used. The water content of fresh ginseng is usually about 70%. If water is externally supplied to the steaming chamber, the resulting excessive water is condensed in the material, and extracts ingredients from the material.

In addition, the steaming time and temperature may be changed within the ranges of 2.5-4 hours and 88-96 °C, depending on the thickness of the material. During steaming, the steam chamber is closed, and the pressure therein is maintained at 0 - 1 kg/cm3 in order to maximize thermal efficiency and prevent the loss of water at such a high temperature.

In every round of steaming, alcohol is supplied into the steaming chamber in order to prevent degradation attributable to germs throughout the entire procedure and maximize the quality of the material. As a result, the black ginseng prepared according to the method of the present invention exhibits characteristic deep tastes and flavors which cannot be obtained from fresh ginseng, white ginseng or red ginseng.

Preferably, the alcohol is ethanol. When it is 100% pure, ethanol is supplied in an amount of 5-10 % by weight based on the weight of the material.

3. Third Process: Primary Maturing

After completion of the second process, the material is not dried, but is allowed to undergo maturation in a maturation chamber without the supply of additional water. For natural maturation, the material is left at 35°C or lower for 24-72 hours in order that its water content is not decreased below 20%.


While external water and alcohol are supplied into the steaming chamber, the primarily matured material is steamed at 65-75 °C for 1.5-2.5 hours in the steaming chamber. When it is 100% pure, the alcohol is preferably supplied in an amount of
5-10% by weight based on the weight of the material.

This process is quite different from the second process. Whereas the primary steaming is performed using the water retained by the material, external water is supplied into the chamber from the secondary steaming process. Because the primarily matured material has low water content, if it is heated without the supply of external water, it is not steamed, but is likely to dry out and thus undergo carbonization, incurring ingredient loss and degradation of quality.

The term "carbonization", as used herein, means the decomposition or chemical change of ginseng components into carbons.

5. Fifth Process: Secondary Maturing

Even if it differs from one material to another, the water content is measured to amount to about 40% in the body and about 30% in root hairs. The ginseng material is allowed to mature at 35°C or lower for about 24 hours in a maturation chamber in order that the water content is not decreased to less than 20%. If the roots become too dry at the edges, additional moisture can be provided to the chamber.

6. Sixth Process: Form Fixing

In order to maintain the neat arrangement thereof, the material is wrapped with linen cloth or tied up with silk thread. The linen cloth or silk thread is removed after the final maturing and drying process.

A lot of manual treatment is required to increase the value of the final product. After undergoing the maturation process, the material is much lower in water content than fresh ginseng. Also, the material has a smooth texture so that it can be easily arranged into a neat form.

7. Seventh Process: Tertiary ~ Nonary Steaming and Tertiary ~ Nonary Maturing

After completion of the sixth process, the material is steamed and matured seven times more in the same manner as in the secondary steaming process and the secondary maturing process, respectively.

8. Eighth Process: Drying

After the nonary maturing process, the material is dried under the sun so that its water content is maintained at 14% or less. This drying process is very important. Even a slight mistake in this drying process results in a great loss of labor, time and money.

After the nine rounds of steaming and maturing processes, the water content of the material (root body and root hairs) is near the criterion of 14%. Therefore, after the nonary maturing process, the drying process is preferably conducted by sun drying.

When sun drying is employed, it takes a long time to dry the material to the desired level of water content, but as long as care is taken to prevent carbonization attributable to excessive drying, the repetition of a process of absorbing air and water into the material and releasing it from the material makes it possible to safely maintain the
material at a desired water content level.

[51] Sun drying is a natural drying process that uses sun and air. In contrast, fire drying is an artificial drying process that uses a dryer based on heat and forced air.

[52] After completion of the eighth process, the black ginseng thus produced is unwrapped or untied and selected according to the purpose thereof. If it is measured to have a water content higher than the criterion, the black ginseng is returned to the drying process. Following the selection, the resulting products are inspected and sanitarily packaged according to product form and quality.

[53] Upon packaging, the products thus obtained are classified according to quality state. For example, the products are classified into black ginseng, neat black ginseng and black ginseng rootlet.

[54] As used herein, the term "black ginseng" is intended to refer to whole black ginseng, the term "neat black ginseng" to a black ginseng root from which root hairs have been removed, and the term "black ginseng rootlet" to hairs or rootlets of black ginseng, which have been removed from main roots.

[55] The black ginseng thus produced exhibits unique and deep tastes and flavors characteristic to the black ginseng, which cannot be obtained from fresh ginseng, white ginseng or red ginseng.

[56] From the black ginseng thus obtained, a black ginseng extract can be prepared.

[57] The black ginseng extract according to the present invention is prepared as follows. The material which has undergone the seventh process, that is, the nine rounds of steaming and maturing processes, is utilized.

[58] 8. Eighth Process: Extracting

[59] Effective saponin ingredients are extracted from the black ginseng using a 70% alcohol solution. The extraction is repeated three times at 75°C or lower.


[61] The extract is filtered through a microfilter to remove matter other than effective saponin ingredients.


[63] The filtrate is concentrated using a concentrator which is evacuated so that the evaporation point of the solvent used in the extracting process is kept at 45°C or less while being heated at 75°C or less.

[64] This temperature condition is specified to prevent the thermal degradation of the effective saponin ingredients and preserve the taste and flavor ingredients retained by the extract.


[66] Using a precipitation method, impurities are removed from a solution of the concentrate in a 70% alcohol solution.
12. Twelfth Process: Concentrating

After the removal of impurities, the solution is concentrated to the extent that its solid content increases to 60% or higher. The resulting concentrate is used as an extract.

The concentration of the solution is performed in a concentrator which is evacuated so that the evaporation point of the solvent used in the extracting process is kept at 45°C or less while being heated at 75°C or less. This temperature condition is set forth to prevent the thermal degradation of the effective saponin ingredients and preserve the taste and flavor ingredients retained by the extract.

The black ginseng extract thus produced retains the taste and flavor characteristic of black ginseng, and contains effective saponin in an amount of 80 mg/g ~ 300 mg/g.

The black ginseng extract is inspected according to a standard testing method in an authorized facility, and is sanitarily packaged into predetermined units.

As described above, the black ginseng material which has undergone the procedure from the first to the seventh process can be used to prepare the black ginseng extract according to the present invention, and this extraction procedure utilizing the black ginseng material after the seventh process has fewer steps than the _de novo_ procedure which starts with fresh ginseng, increasing process efficiency.

Alternatively, the black ginseng material obtained after the eighth process of drying may be used to prepare a black ginseng extract. That is, the material which has undergone the nonary steaming process and the nonary maturing process and then the eighth process of drying is subjected to extraction, filtration, concentration, purification and concentration, in that order, as in the foregoing.

The extraction, filtration, concentration, purification and concentration processes are performed in the same manner as in the above method of preparing black ginseng extract.

In detail, the alternative extraction method for the preparation of black ginseng extract is performed as follows.


After the thirteenth process, the black ginseng extract is inspected according to a standard testing method in an authorized facility, and is sanitarily packaged into predetermined units.
The black ginseng extract prepared according to the method of the present invention was found to contain all of the effective saponin ingredients of red ginseng given in Table 1, below, as the result of analysis by an authorized organization.

Table 1

<table>
<thead>
<tr>
<th>Gensenoside-Rf</th>
<th>Gensenoside-Re</th>
<th>Gensenoside-Rd</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gensenoside-Rc</td>
<td>Gensenoside-Rb2</td>
<td>Gensenoside-Rb1</td>
</tr>
</tbody>
</table>

In the black ginseng extract prepared according to the present invention, the effective saponin ingredients including ginsenoside RgI, ginsenoside Rg2, ginsenoside Rg3, ginsenoside Rd, ginsenoside Re, ginsenoside Rf, ginsenoside RbI, ginsenoside Rb2, and ginsenoside Rc are present in an amount of 80 mg/g ~ 300 mg/g.

Also, the black ginseng may be used to prepare honey-soaked black ginseng confectionary as follows.

1. First process: Cleaning

Fresh ginseng is used as a material. Because it is the major determinant of the quality of the final product, the material must be strictly selected from among good kinds of ginseng, exclusive of the following defective kinds of ginseng.

Yellow ginseng refers to ginseng whose surface is not neat due to a problematic growth procedure, and shows a significantly rough reddish yellow color. The surface of the ginseng appears normal in surface color, but is found to be roughly pockmarked and have injured inner surfaces when scrutinized.

Rotten ginseng looks normal, but is flabby and has black scars at the edges of the core. It smells rotten. Tousled ginseng refers to deformed ginseng which has too short a root body and too many root hairs.

Dormant ginseng has no normal rhizomes and stems because its leaves have fallen early, or because new annual leaves have not yet sprouted. In such ginseng, there are no substantial amounts of effective ingredients and cell tissues. Thus, dormant ginseng does not provide effective ingredients when used in the preparation of black ginseng extracts.

The material is cleaned to remove impurities from the surface thereof, with caution not to harm the integrity thereof.

After being selected from among the cleaned fresh ginseng, the material in whole form is dried to the extent that moisture is eliminated from the surface thereof.

Selection with the naked eye is easier after the ginseng is cleaned than before. The cleaned ginseng is inspected for defects and sorted into those which are to be processed in their integrity and divided parts.

2. Second Process: Surface Dehydration
There are many reasons for dehydrating the surface of the selected materials. For example, the materials cannot be preserved for a long period of time unless their surface is dry: otherwise, they are prone to spoil. The water on material surfaces acts as an impediment to subsequent processes. Also, when the material is soaked in honey, the water on the surface thins the honey, decreasing the efficacy of the process.

3. Third Process: Material Cutting and Peeling

In this process, the material is peeled and/or cut into pieces having a desired size. Alternatively, the bark may be destroyed.

The material, having a dry surface, may be cut into pieces which are formed into honey-soaked ginseng confectionary, or may be used together with the preparation of honey-soaked ginseng confectionary. In the latter case, because the skin of the ginseng plays a role of inhibiting the takeup of honey or sugar by the ginseng, it must be peeled off from the material or destroyed so as to make it easy to introduce honey or sugar into the body of the ginseng.

4. Fourth Process: Neatly Arranging on Sieve

Pieces of the material are arranged neatly on a sieve.

This process of neatly arranging the material pieces is indispensable in order to increase the efficacy of the method and the value of the final products.

5. Fifth Process: Honey Soaking

The materials are soaked in honey. Conventionally, the ginseng materials are soaked in honey, followed by boiling the honey to absorb honey into the body of the ginseng. However, boiling causes the effective ingredients of ginseng to be released externally, so that the final product is degraded. In the present invention, the ginseng material is merely soaked in honey, without heating.

6. Sixth Process: Primary Steaming

The material, uniformly coated with honey, is steamed at 88 ~ 96°C for 2.5 ~ 4 hours using the water retained by the material.

7. Seventh Process: Primary Maturing

In a maturation chamber, the primarily steamed material is primarily matured at 35°C or lower for 8 hours.

8. Eighth Process: Honey Soaking

The primarily matured material is soaked in honey.


The material having undergone the eighth process is steamed at 65 ~ 75°C for 1.5 ~ 2.5 hours with no provision of additional water.

10. Tenth Process: Secondary Maturing

The secondarily steamed material is matured at a temperature lower than 35°C for 8 hours.

After being soaked in honey again, the material is subjected to seven additional steaming and maturing processes in the same manner as in the secondary steaming process and the secondary maturing process, respectively.

The steps from the secondary steaming process to the nonary steaming process are performed with no provision of additional water.

12. Twelfth Process: Primary Drying

After the eleventh process, the material is partially dried.

13. Thirteenth Process: Material Pruning

The semi-dried material obtained after the twelfth process is pruned. This process aims to increase the commercial value of the products.


Following the thirteenth process, the material is dried to the extent that the water content meets the standard.

15. Fifteenth Process: Packaging

The secondarily dried materials are packaged into vacuum packs.

16. Sixteenth Process: Sterilizing

The materials packaged in vacuum packs are thermally exposed at 90°C for 30 min. The black ginseng thus produced is found to have a delicate taste and flavor with a smooth and chewy texture.

Although the preferred embodiments of the present invention have been disclosed for illustrative purposes, those skilled in the art will appreciate that various modifications, additions and substitutions are possible, without departing from the scope and spirit of the invention as disclosed in the accompanying claims.
Claims

[1] A method for preparing black ginseng from fresh ginseng, comprising:
cleaning raw fresh ginseng with water carefully, so as not to injure the integrity
and ingredients of the fresh ginseng;
primarily steaming the cleaned ginseng at 88 ~ 96°C for 2.5 ~ 4 hours with the
ginseng's own water in a steaming chamber with alcohol provided to the
chamber;
primarily maturing the ginseng at 35°C or lower for 24 ~ 72 hours in a maturing
chamber with no additional provision of water to the chamber in a manner such
that the water content of the ginseng is not decreased below 20%;
secondarily steaming the primarily matured ginseng at 65 ~ 75°C for 1.5 ~ 2.5
hours in a steaming chamber with the provision of alcohol into the chamber;
secondarily maturing the secondarily steamed ginseng at 35°C or less for 24
hours in a maturing chamber in such a manner that external water is added to the
chamber to maintain the water content of the ginseng at 20% or higher;
fixing a form of the secondarily matured ginseng by wrapping the secondarily
matured ginseng with linen cloth or tying the secondarily matured ginseng with
silk thread;
further steaming and maturing the ginseng seven times in the same manners as in
the secondary steaming step and the secondary maturing step, respectively, to
finish a nonarily steaming step and a nonarily maturing step; and
drying the nonarily matured ginseng in the sun in such a manner that the ginseng
has a water content of 14%.

[2] The method as set forth in claim 1, wherein the primary steaming step is
conducted in the steaming chamber, said steaming chamber being maintained at
a pressure of 0 kg/cm³ ~ 1 kg/cm², and being changed in temperature from 88 ~
96°C within 2.5 ~ 4 hours depending on the thickness of the ginseng.

[3] The method as set forth in claim 1, wherein, provided that it is 100% pure, the
alcohol is provided in an amount of 5 ~ 10% into the steaming chamber in all of
the nine rounds of the steaming.

[4] The method as set forth in claim 1, wherein each of the primary maturing step to
the nonary maturing step is conducted immediately after the corresponding
steaming step so as to prevent the loss of effective saponin ingredients attributable to carbonization, which may occur during the steaming steps.

[5] A method for preparing a black ginseng extract, comprising:
cleaning raw fresh ginseng with water carefully so as not to injure the integrity
and ingredients of the fresh ginseng;
primarily steaming the cleaned ginseng at 88 ~ 96°C for 2.5 - 4 hours with the ginseng's own water in a steaming chamber, with alcohol provided into the chamber;
primarily maturing the ginseng at 35°C or lower for 24 ~ 72 hours in a maturing chamber with no additional provision of water to the chamber in a manner such that the water content of the ginseng is not decreased to less than 20%;
secondarily steaming the primarily matured ginseng at 65 ~ 75°C for 1.5 ~ 2.5 hours in a steaming chamber with the provision of alcohol into the chamber;
secondarily maturing the secondarily steamed ginseng at 35°C or less for 24 hours in a maturing chamber in such a manner that external water is added to the chamber to maintain the water content of the ginseng at 20% or higher;
fixing a form of the secondarily matured ginseng by wrapping the secondarily matured ginseng with linen cloth or tying the secondarily matured ginseng with silk thread;
further steaming and maturing the ginseng seven times in the same manner as in the secondary steaming step and the secondary maturing step, respectively, to finish nine rounds of steaming and maturing in total;
immersing the ginseng three times in 70% alcohol at 75°C or less to give a rough extract including effective saponin ingredients;
filtering the rough extract through a microfilter to remove impurities other than effective saponin ingredients, to give a filtrate;
concentrating the filtrate in a concentrator which is evacuated so that an evaporation point of a solvent used in the extracting step is kept at 45°C or less, the concentrator being heated to 75°C or less;
dissolving the concentrate in 70% alcohol and removing impurities from the solution through precipitation; and
concentrating the solution to an extent that its solid content increases to 60% or higher.

A method for preparing a black ginseng extract, comprising:
immersing the black ginseng prepared according to the method of claim 1 three times in 70% alcohol at 75°C or less to give a rough extract including effective saponin ingredients;
filtering the rough extract through a microfilter to remove impurities other than effective saponin ingredients to give a filtrate;
concentrating the filtrate in a concentrator which is evacuated so that the evaporation point of a solvent used in the extracting step is maintained at 45°C or less, the concentrator being heated to 75°C or less;
dissolving the concentrate in 70% alcohol and removing impurities from the
solution through precipitation; and
concentrating the solution to the extent that its solid content increases to 60% or
higher.

[7] The method as set forth in claim 5 or 6, wherein the black ginseng extract
contains effective saponin ingredients including ginsenoside RgI, ginsenoside
Rg2, ginsenoside Rg3, ginsenoside Rd, ginsenoside Re, ginsenoside Rf,
ginsenoside RbI, ginsenoside Rb2, and ginsenoside Rc in an amount of 80 mg/g
~ 300 mg/g.

[8] The method as set forth in claim 1, wherein the black ginseng is in a whole form
of fresh ginseng, in a form of a root body devoid of root hairs, or in a form of
root hairs removed from the root body thereof.

[9] A method for preparing honey-soaked ginseng confectionary, comprising:
selecting fresh ginseng in whole form and dehydrating the surface of the selected
ginseng;
cutting the ginseng into pieces, peeling the ginseng, or destroying the surface of
the ginseng;
neatly arranging the ginseng pieces or the whole ginseng in their integrity on a
sieve;
soaking the ginseng in honey;
primarily steaming the honey-coated ginseng at 88 ~ 96°C for 2.5 ~ 4 hours with
the water contained therein;
primarily maturing the primarily steamed ginseng in a maturing chamber at a
temperature less than 35°C for 8 hours;
soaking the primarily matured ginseng in honey;
secondarily steaming the soaked ginseng at 65 ~ 75°C for 1.5 ~ 2.5 hours;
secondarily maturing the secondarily steamed ginseng in a maturing chamber at a
temperature less than 35°C for 8 hours;
further soaking, steaming and maturing the ginseng seven times in the same
manner as in the above soaking step, the secondary steaming step and the
secondary maturing step, respectively, to finish nine rounds of steaming and
maturing in total;
semi-drying the nonarily matured ginseng;
pruning the semi-dried ginseng;
drying the pruned ginseng to the extent that the water content of the ginseng
meets a predetermined standard;
packaging the dried ginseng into vacuum packs; and
sterilizing the ginseng in vacuum packs by thermal exposure at 90°C for 30 min.

[10]  The method as set forth in claim 9, wherein no external water is added in any of
the eight rounds of the secondary steaming step to the nonary steaming step.
INTERNATIONAL SEARCH REPORT

A. CLASSIFICATION OF SUBJECT MATTER

A23L 1/212(2006.01)i

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 A23L 1/212, 2/38

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean Utility models and applications for Utility models since 1975

Japanese Utility models and applications for Utility models since 1975

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKIPASS, Delphion, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

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<th>Relevant to claim No</th>
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<td>A</td>
<td>KR 10-0543862 B (BLACK GINSENG KOREA Co., Ltd) 23 January 2006 see abstract</td>
<td>1-10</td>
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<td>A</td>
<td>KR 10-2003-0005089 A (KIM HANG JONG) 15 January 2003 see abstract</td>
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* Special categories of cited documents

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"&" document member of the same patent family

Date of the actual completion of the international search

10 SEPTEMBER 2007 (10.09.2007)

Date of mailing of the international search report

10 SEPTEMBER 2007 (10.09.2007)

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