A method of brewing a litchi (lychee) nutritious wine comprises (i) selection and processing of raw materials: clean fresh litchi and dry in air, peel off the skin, denucleate the litchi and cut up pulp; husk selected walnut and remove the impurities; remove impurities of sesame and sorghum; (2) fermentation: mix the processed sorghum, litchi, sesame and walnut prepared in step (1); place them into a fermentation cylinder and mix them with notopterygium; ferment the mixture at a temperature of 20-35°C for 60-80 days; after the fermentation process, remove the wine tears; (3) ageing: place the brewed wine in step (2) into a ceramic wine reservoir and age the mixture at a temperature of 10-15°C for 6-12 months; (4) blending: blend the aged brewed wine from step (3) with a base liquor in appropriate proportions; (5) filtering and filling: degemining the blended wine with a millipore filtration (pore size of the membrane being 0.10-0.22μm); conducting the filling process in an aseptic environment to obtain the nutritive litchi wine. Preferably the base liquor is a distilled base liquor made up of rice, sticky rice, corn, wheat and sorghum, wherein the volume ratio of the ageing brewed wine and base liquor is preferably 1:4-7:3. Preferably the mass percent of the raw materials are 40-70% sorghum, 20-40% litchi, 5-10% sesame and 5-10% walnut. Preferably the notopterygium accounts for 4-8% of the total mass of raw materials.
A Kind of Litchi Nutritive Wine and Its Brewing Method

Field of Technology

The invention relates to the technical field of brewing fermented alcoholic drink mixed with fruit juice, especially a kind of litchi nutritive wine and its brewing method.

Background Technology

Litchi is one of the “Four Most Delicious fruits”. Its pulp tastes fresh and sweet. Litchi, being rich of sugar, protein, multivitamin, fat, citric acid, pectin, phosphorus and iron, can replenish energy, soothe the nerves and brain, promote the secretion of saliva or body fluid and stimulate appetite, resolve toxin and disperse swelling as well as stop bleeding and relieve pain. However, litchi is not suitable for long-term storage. If one eats too much litchi at one time or eat litchi too often, he/she may suffer from great internal heat. The development of a product that can not only improve the additional value of litchi but also absorb the nutrition in litchi while avoiding internal heat will surely generate enormous economic benefit and social benefit.

The method of making wine with litchi to improve litchi’s additional value has a great development space. At present, the common litchi wine is made by soaking method or fermentation method. In the former method, litchi wine is made by soaking the litchi pulp in pure base liquor, or sometimes, soaking the litchi juice in base liquor with other Chinese herbal medicinal ingredients, such as ginseng, angelica sinensis, virgin soil and poria cocos in an air tight environment. While in the latter one, direct litchi juice fermentation method can be adopted, that is, to squeeze juice from litchi pulp and ferment the juice without adding carbohydrate during the fermentation; in some case, carbohydrate like chitosan is added into
litchi juice before fermentation process. No matter which method is adopted, alcoholic strength of the finished litchi wine all have a low alcoholic strength (10-20%). The method of squeezing juice from litchi pulp and fermenting the juice cannot maintain as much effective nutrition in litchi pulp as possible, while litchi wine made by blending litchi juice with strong/mild flavor base liquor is not full-bodied and not that fruity.

Content of the Invention

The invention aims to propose a kind of litchi nutritive wine and its brewing method to address the deficiency and shortage of current technology in brewing litchi wine.

Technical solution of the Invention is as follows:

The brewing method of a kind of litchi nutritive wine. The steps are as follows:

(1) Selection and processing of raw materials

Clean the fresh litchi picked from orchard and dry them in the air; peel off the skin, denucleate the litchi and cut up the pulp; husk selected walnut and remove the impurities; remove impurities of sesame and sorghum; get the raw materials prepared for production.

(2) Fermentation

Mix the processed sorghum, litchi, sesame and walnut in (1) evenly; put them into a fermentation cylinder and mix them with notopterygium; put the mixture at a temperature of 20-35°C for a 60-80 days' fermentation; after the fermentation, remove the wine tears, and what we get is brewed wine;

(3) Ageing

Put the brewed wine we get in Step (2) into a ceramic wine reservoir; ageing it at a temperature of 10-15°C for 6-12 months and get the ageing brewed wine;

(4) Blending

Blend the ageing brewed wine in Step (3) with base liquor;

(5) Filtering and filling: degemming the blended wine with a millipore filtration (the
pore size of membrane being 0.10–0.22μm); conducting the filling process in an aseptic environment and get the finished wine.

Fresh litchi should be red litchi while the sesame being white sesame and sorghum being red sorghum.

According to the brewing method described, in Step (2), mass percent of the raw materials are: 40–70% sorghum, 20–40% litchi, 5–10% sesame and 5–10% walnut.

According to the brewing method described, in Step (2), the notopterygium used accounts for 4–8% of the total mass of the raw materials.

According to the brewing method described, in Step (4), base liquor refers to solid distilled base liquor made up of rice, sticky rice, corn, wheat and sorghum and brewed by traditional means; volume ratio of the ageing brewed wine and base liquor is 1:4–7:3.

Litchi nutritive wine made according to the described brewing method.

The alcoholic strength of the litchi nutritive wine is 16–52% V/V.

The litchi nutritive wine can be blended with water, ice and coke in any proportion.

The Invention uses no food additives during the whole production process. Litchi wine is made through natural fermentation. Comparing with the spirits made through fermentation of pure grain, the litchi nutritive wine made in the invention has more organic content and richer nutrition. Besides, it has the flavor of natural litchi - sweet and fresh, moist but not excitant - and is a kind of green organic nutritive wine. The litchi nutritive wine is in the color of straw yellow or light yellow and green and looks glittering and translucent. It has a strong flavor and dense body and has its own characteristics.

Specific implementation

Detailed description is given through the following specific implementation case.

Case 1

(1) Selection and processing of raw materials
Clean the fresh litchi picked from orchard and dry them in the air; peel off the skin, denucleate the litchi and cut up the pulp; husk selected walnut and remove the impurities; remove impurities of sesame and sorghum; get the raw materials prepared for production.

(2) Fermentation

Mix the processed sorghum, litchi, white sesame and walnut in (1) evenly (70% sorghum, 20% litchi, 5% sesame and 5% walnut); put them into a fermentation cylinder and mix them with notopterygium, which accounts for 8% of the total mass of the raw materials; put the mixture at a temperature of 20-35°C for 80 days’ fermentation; after the fermentation, remove the wine tears, and what we get is brewed wine;

(3) Ageing

Put the brewed wine we get in Step (2) into a ceramic wine reservoir; ageing it at a temperature of 10~15°C for 6 months and get the ageing brewed wine;

(4) Blending

Blend the ageing brewed wine in Step (3) with solid distilled base liquor made up of rice, sticky rice, corn, wheat and sorghum through traditional method. Volume ratio of the ageing brewed wine and base liquor is 7:3.

(5) Filtering and filling: degemming the blended wine with a millipore filtration (the pore size of membrane being 0.10~0.22μm); conducting the filling process in an aseptic environment and get the finished wine.

Product index of the finished wine: the alcoholic strength of the litchi nutritive wine is 16.8% (V/V).

Case 2

(1) Selection and processing of raw materials

Clean the fresh litchi picked from orchard and dry them in the air; peel off the skin, denucleate the litchi and cut up the pulp; husk selected walnut and remove the impurities; remove impurities of sesame and sorghum; get the raw materials prepared for production.
(2) Fermentation

Mix the processed sorghum, litchi, white sesame and walnut in (1) evenly (60% sorghum, 30% litchi, 5% sesame and 5% walnut); put them into a fermentation cylinder and mix them with notopterygium, which accounts for 6.5% of the total mass of the raw materials; put the mixture at a temperature of 20-35°C for 80 days’ fermentation; after the fermentation, remove the wine tears, and what we get is brewed wine;

(3) Ageing

Put the brewed wine we get in Step (2) into a ceramic wine reservoir; ageing it at a temperature of 10–15°C for 6 months and get the ageing brewed wine;

(4) Blending

Blend the ageing brewed wine in Step (3) with solid distilled base liquor made up of rice, sticky rice, corn, wheat and sorghum through traditional method. Volume ratio of the ageing brewed wine and base liquor is 3:2.

(5) Filtering and filling: degemring the blended wine with a millipore filtration (the pore size of membrane being 0.10–0.22μm); conducting the filling process in an aseptic environment and get the finished wine.

Product index of the finished wine: the alcoholic strength of the litchi nutritive wine is 22% (V/V).

Case 3

(1) Selection and processing of raw materials

Clean the fresh litchi picked from orchard and dry them in the air; peel off the skin, denuclidean the litchi and cut up the pulp; husk selected walnut and remove the impurities; remove impurities of sesame and sorghum; get the raw materials prepared for production.

(2) Fermentation

Mix the processed sorghum, litchi, white sesame and walnut in (1) evenly (54% sorghum, 30% litchi, 8% sesame and 8% walnut); put them into a fermentation cylinder and mix them
with notopterygium, which accounts for 6% of the total mass of the raw materials; put the mixture at a temperature of 20-35°C for 70 days’ fermentation; after the fermentation, remove the wine tears, and what we get is brewed wine;

(3) Ageing

Put the brewed wine we get in Step (2) into a ceramic wine reservoir; ageing it at a temperature of 10–15°C for 8 months and get the ageing brewed wine;

(4) Blending

Blend the ageing brewed wine in Step (3) with solid distilled base liquor made up of rice, sticky rice, corn, wheat and sorghum through traditional method. Volume ratio of the ageing brewed wine and base liquor is 23:27.

(5) Filtering and filling: degerming the blended wine with a millipore filtration (the pore size of membrane being 0.10–0.22μm); conducting the filling process in an aseptic environment and get the finished wine.

Product index of the finished wine: the alcoholic strength of the litchi nutritive wine is 38% (V/V).

Case 4

(1) Selection and processing of raw materials

Clean the fresh litchi picked from orchard and dry them in the air; peel off the skin, denuclease the litchi and cut up the pulp; husk selected walnut and remove the impurities; remove impurities of sesame and sorghum; get the raw materials prepared for production.

(2) Fermentation

Mix the processed sorghum, litchi, white sesame and walnut in (1) evenly (40% sorghum, 40% litchi, 10% sesame and 10% walnut); put them into a fermentation cylinder and mix them with notopterygium, which accounts for 5% of the total mass of the raw materials; put the mixture at a temperature of 20-35°C for 70 days’ fermentation; after the fermentation, remove the wine tears, and what we get is brewed wine;
(3) Ageing

Put the brewed wine we get in Step (2) into a ceramic wine reservoir; ageing it at a temperature of 10~15°C for 10 months and get the ageing brewed wine;

(4) Blending

Blend the ageing brewed wine in Step (3) with solid distilled base liquor made up of rice, sticky rice, corn, wheat and sorghum through traditional method. Volume ratio of the ageing brewed wine and base liquor is 2:3.

(5) Filtering and filling: degerming the blended wine with a millipore filtration (the pore size of membrane being 0.10~0.22μm); conducting the filling process in an aseptic environment and get the finished wine.

Product index of the finished wine: the alcoholic strength of the litchi nutritive wine is 45% (V/V).

Case 5

(1) Selection and processing of raw materials

Clean the fresh litchi picked from orchard and dry them in the air; peel off the skin, denucleate the litchi and cut up the pulp; husk selected walnut and remove the impurities; remove impurities of sesame and sorghum; get the raw materials prepared for production.

(2) Fermentation

Mix the processed sorghum, litchi, white sesame and walnut in (1) evenly (40% sorghum, 40% litchi, 10% sesame and 10% walnut); put them into a fermentation cylinder and mix them with notopterygium, which accounts for 5% of the total mass of the raw materials; put the mixture at a temperature of 20-35°C for 70 days' fermentation; after the fermentation, remove the wine tears, and what we get is brewed wine;

(3) Ageing

Put the brewed wine we get in Step (2) into a ceramic wine reservoir; ageing it at a temperature of 10~15°C for 10 months and get the ageing brewed wine;
（4）Blending

Blend the ageing brewed wine in Step (3) with solid distilled base liquor made up of rice, sticky rice, corn, wheat and sorghum through traditional method. Volume ratio of the ageing brewed wine and base liquor is 7:18.

（5）Filtering and filling: degerming the blended wine with a millipore filtration (the pore size of membrane being 0.10~0.22μm); conducting the filling process in an aseptic environment and get the finished wine.

Product index of the finished wine: the alcoholic strength of the litchi nutritive wine is 52% （V/V）.

It should be understood that, ordinary technician in this field can make improvement or modification on the basis of the above description, and all the improvement and modification should all be subject to the protection of the Claim of Right of the Invention.
Claim of Right

1. The brewing method of a kind of litchi nutritive wine. The characteristics and steps are as follows:

   (1) Selection and processing of raw materials

   Clean the fresh litchi picked from orchard and dry them in the air; peel off the skin, denucleate the litchi and cut up the pulp; husk selected walnut and remove the impurities; remove impurities of sesame and sorghum; get the raw materials prepared for production.

   (2) Fermentation

   Mix the processed sorghum, litchi, sesame and walnut in (1) evenly; put them into a fermentation cylinder and mix them with notopterygium; put the mixture at a temperature of 20-35°C for a 60-80 days' fermentation; after the fermentation process, remove the wine tears, and what we get is brewed wine;

   (3) Ageing

   Put the brewed wine we get in Step (2) into a ceramic wine reservoir; ageing it at a temperature of 10~15°C for 6-12 months and get the ageing brewed wine;

   (4) Blending

   Blend the ageing brewed wine get in Step (3) with base liquor in appropriate proportions;

   (5) Filtering and filling: degemng the blended wine with a millipore filtration (the pore size of membrane being 0.10~0.22μm); conducting the filling process in an aseptic environment and get the finished wine.

2. According to the brewing method described in Article 1 of the Claim of Right, its characteristic is that, the fresh litchi should be red litchi while the sesame being white sesame and sorghum being red sorghum.

3. According to the brewing method described in Article 1 of the Claim of Right, its characteristic is that, in Step (2), mass percent of the raw materials are: 40-70% sorghum,
20-40% litchi, 5-10% sesame and 5-10% walnut.

4. According to the brewing method described in Article 1 of the Claim of Right, its characteristic is that, in Step (2), the notopterygium used accounts for 4-8% of the total mass of the raw materials.

5. According to the brewing method described in Article 1 of the Claim of Right, its characteristic is that, in Step (4), base liquor refers to solid distilled base liquor made up of rice, sticky rice, corn, wheat and sorghum and brewed by traditional means; volume ratio of the ageing brewed wine and base liquor is 1:4–7:3.

6. Litchi nutritive wine made according to the brewing method described in Article 1-5 in the Claim of Right.

7. According to the litchi nutritive wine described in Article 6 of the Claim of Right, its characteristic is that, the alcoholic strength of the litchi nutritive wine is 16~52% V/V.

8. According to the litchi nutritive wine described in Article 6 of the Claim of Right, its characteristic is that, the litchi nutritive wine can be blended with water, ice and coke in any proportion.
Patents Act 1977: Search Report under Section 17

Documents considered to be relevant:

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<th>Category</th>
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Categories:

X  Document indicating lack of novelty or inventive step
Y  Document indicating lack of inventive step if combined with one or more other documents of same category.
&  Member of the same patent family
A  Document indicating technological background and/or state of the art.
P  Document published on or after the declared priority date but before the filing date of this invention.
E  Patent document published on or after, but with priority date earlier than, the filing date of this application.

Field of Search:

Search of GB, EP, WO & US patent documents classified in the following areas of the UKC^X :
Worldwide search of patent documents classified in the following areas of the IPC
A61K; A61P; C12G

The following online and other databases have been used in the preparation of this search report
EPODOC, WPI, TCM, XPTK

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