

A METHOD FOR PREPARING AN INFUSED PALM OLEIN

Field Of The Invention

The present invention refers to a method for preparing an infused palm olein.

BACKGROUND OF THE INVENTION

- 5 Local Malaysian herbs and spices are commonly used as enrichment to foods, particularly as a flavor and aroma additives during foods preparation and consumption. Chili (or capsicum) and garlic spices are popular as such an enhancement, and natural odor element like diallyl disulfide (sulphur compound) from garlic is responsible for the smell and taste of garlic; allicin from garlic and capsaicin from chili are commonly contribute the "hot" sensation.
- 10 The present invention makes use of palm olein as a solvent for flavor extraction and accomplished without the use of toxic solvent. The name, palm olein as such could be applied to RBD palm olein, red palm olein and palm olein blended vegetable oils. Palm olein especially red palm olein has an exceptionally high level of phytonutrients such as carotenes, tocotrienols, squalene and others. However, so far there are no infused palm olein products in the market.
- 15 Therefore, the object of the invention is to provide a novel and lower price infused palm olein products compared to the current infused oil products imported mostly from the Western countries.

SUMMARY OF THE INVENTION

Accordingly, the present invention provides a method for preparing an infused palm olein, the method includes the steps of (a) heating and stirring spice and herbs with palm olein at a predetermined temperature wherein the palm olein to spice or herbs at a predetermined ratio and for a predetermined period of time, (b) cooling and stirring a mixture obtained from step (a) at a predetermined temperature in a tank, (c) separating an infused palm olein containing cooked spice and herbs obtained from step (b) using a predetermined separation technique at a predetermined temperature, (d) blending the infused palm olein with another type of an infused palm olein and (e) recovering and storing the infused palm olein.

10 The present invention consists of several novel features and a combination of parts hereinafter fully described and illustrated in the accompanying description and drawing, it being understood that various changes in the details may be made without departing from the scope of the invention or sacrificing any of the advantages of the present invention.

BRIEF DESCRIPTION OF THE ACCOMPANYING DRAWING

FIG. 1 shows a process flow chart of infused palm olein according to the preferred embodiment of the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

The present invention refers to a method for preparing an infused palm olein. Hereinafter, this specification will describe the present invention according to the preferred embodiments of the present invention. However, it is to be understood that limiting the description to the preferred embodiments of the invention is merely to facilitate discussion of the present invention and it is envisioned that those skilled in the art may devise various modifications and equivalents without departing from the scope of the appended claims.

The present invention refers to a method for preparing an infused palm olein by extraction of natural flavor elements from local Malaysian herbs and spices with edible palm olein used as a menstruum.

Malaysian herbs such as curry leaves (*Murraya koenigii*), turmeric (*Curcuma longa*) and kaffir lime leaves (*Citrus hystic*) and Malaysian spices for example chili, garlic, cinnamon, mustard seed and black pepper are often used as flavorings in Malaysian food. The products produced will be called as infused palm olein.

More particularly, this invention related to process of producing extracts of natural essential oil and flavor from local Malaysian herbs and spices such as capsaicin from chillies, curcumin from gingers, lycopene from tomatoes and others from peppers, lemon grass, onion, garlic etc. Palm olein is used as a solvent in this process.

In a preferred embodiment of the present invention, the present invention relates to a method for preparing an infused palm olein, wherein the method includes the steps of heating and stirring spice and herbs with palm olein at a predetermined temperature. Example (1) of infused palm olein with chili: Through heating process, the cell membrane of the seeds ruptured, permanent spores generated and thus releasing of the desired flavors, aroma, color, pungency and phytochemicals, which may act as antioxidants or pro-oxidants being facilitated. The process is simple, economical and environmental friendly and could be applied to any Malaysian herbs and spice ingredients.

With the infusion of essential oils from chillies, garlic and other herbs, we are able to extend the nutritional benefits of the oil. We have demonstrated in our laboratory antioxidant, anticancer and anti inflammation properties for some mix phytonutrients. The infused palm olein with the essential oil and/or herbs will allow for more functional application for the oil. The oil can be used in many culinary applications e.g. as a
 5 condiment in the preparation of noodles, baking, marinating meat, "sambals", curries, salad, satay and light frying as well as sauce base.

Accordingly, one of the objects of the present invention is the provision of a process which will produce a high quality of flavor elements extract which claims to maintain the nutritional value of the food, enhance the keeping quality of food products, increase their shelf life and retain the natural flavor of the spice
 10 and/or herbs.

Another objects of this invention process is a process for the fortification of palm olein with natural flavor to provide a flavored infused palm olein with local Malaysian herbs and spice which there is a high retention of natural flavor of the spice and/or herbs.

An additional object is to provide a method of producing infused palm olein without the use of solvents
 15 extraction, steam distillation and high vacuum technique, which the ealier is known to cause oxidation, contamination of the spice and/or herbs and the latter techniques required high maintenance cost.

A further object is the production of an infused palm olein with local Malaysian spice and/or herbs which is free from contamination, enriched with phytonutrients, simple, convenient and suitable for use in or as any food products.

20 Various other and ancillary objects and advantages of the present invention will become obvious from the following description and explanation of the invention given in connection with the accompanying drawing (1).

Current extraction technology utilizes solvents extraction, steam distillation and high vacuum technique. The use of the above technologies is expensive and will destroy the antioxidants and active ingredients in

the oil and herbs. Solvent extraction method will also leave organic residue in the product which is not suitable for human consumption.

FIG. 1 shows the preferred method for preparing the infused red palm oil. The red palm oil to herbs/spice ration is preferred and adjusted as 10:1. The descriptions are as below:

- 5 The process start with cutting and blending (2) of Malaysian spice and herbs at (1) into predetermined sizes to prepare the raw materials for mixing into fresh edible palm olein (3) which are fed into a heat extractor at (4) with agitator at 90°C. The contact time is variable depending on the type of spice and herbs. For example, for chilli and garlic extraction, the optimum contact time is between 20-50 min. A batch infusion process is preferred to obtain various flavoured infused palm olein. The second phase
- 10 continued from the start up phase in which the mixture of herbs and spices heated with palm olein will be supplied as a product (5). The second phase start with cooling and stirring at ambient temperature. The infused palm olein spice / herbs mixture is separated by the use of membrane filtration technique as in (6) into a liquid flavoured infused palm olein. The temperature is controlled to not exceed 30°C. Centrifugation is necessary to further separate the infused palm olein and fine herbs/ spice particles at
- 15 3500 rpm for 20 min at ambient temperature to remove all solids. A clear liquid flavoured infused palm olein shown as (9) was then obtained from centrifugation. The extracted solid herbs and spices (8) from membrane filtration technique were collected as a secondary product and suggested to further investigate for potential application and food products. The separated fine solid herbs and spices as in (10) obtained from the process of centrifugation will be discarded. Different type of infused palm olein will be blended
- 20 for different food usage and preference. The infused oil will be recovered and stored immediately using common industrial bottling method. The infused oil is recommended to keep in cool and dry place to avoid exposure of sunlight.

The present process is applicable to extract natural flavour and phytonutrients from Malaysian herbs and spices, e.g., diallyl disulfide (sulphur compound) from garlic is responsible for the smell and taste of garlic;

25 alliin from garlic and capsaicin from chili that are commonly contribute the "hot" sensation. The final flavoured infused oil products also be adapted to produce an individual or blend of various type of its own

e.g., garlic infused palm olein could be blended with chili infused palm olein or black pepper infused palm olein blended with garlic infused palm olein in a predetermined ratios according to consumers preference.

The flavoured infused oil extracted from Malaysian spice and herbs with palm olein, preferably red palm olein, super olein IV 64 and or other palm olein and or blended with any vegetable oils may be used. The

- 5 oil should exist in a liquid state at ambient temperature in the potential users countries. A preferred palm olein is red palm olein, but super olein and other palm olein and or blended with any other vegetable oil can also be used.

As an example for this method, the dry chili spice is blended with the palm olein in a preferred ration of 10:1. The contact time is predetermined, however, for chili extraction; the optimum contact time is 50 min.

- 10 The initial heating and stirring takes place at 90°C. Temperature above 90°C should be avoided to prevent oxidation and disruption of the phytonutrients and flavours elements.

Following the heating and extraction process, the mixture is separated by membrane filtration and centrifugation techniques. Membrane filtration technique is by use of an cellulose membrane filter with pore size of 0.45 μm to remove the solids. However, other cellulose membrane filter with bigger pore size

- 15 can also be used. Further separation of fine particles/solids from the separation of liquid flavoured infused palm olein is by the use of a centrifuge and spinning is set at 3500 rpm for 20 min at ambient temperature.

The extracted spice and herbs solids by membrane filtration technique are then recovered and keep as secondary products. The secondary products will be kept for potential applications in other food products.

- 20 The invention has enhanced the value of the red palm oil with single or mix of natural flavor and essential oils from herbs, spices, vegetable and/or fruits. It should be noted that the phytonutrients content of the product and its active ingredient (predominantly antioxidant) is beneficial to health. The product will be the first infused oil manufactured in Malaysia.

The advantage of this invention is environmental friendly, simple and economy with which no solvents is
25 involved in the process and all ingredients are available from local market. With the infusion of essential

oils from chilies and other herbs, the present invention has proven that it is possible to extend the nutritional benefits of the oil. The present inventions has demonstrated the antioxidant, anticancer and anti inflammation properties for some mixed phytonutrients. The infused palm olein with the essential oil/herbs will allow for more application for the oil. The oil can be used in many culinary applications e.g. as a condiment in the preparation of noodles, marinating meat, "sambals", curries, salad and light frying. Chili spice as an example is popular as an enhancement to food as a flavor or coloring additives. The present invention makes use of the palm olein as a solvent for spice extraction by low heat without destroying the phytonutrients contents. It greatly simplifies the extraction process, makes more economical and environmental friendly use of spice ingredients and produces a colored edible oil extract with spice or herbs flavor.

EXAMPLE

The present invention for preparing an infused palm olein with local Malaysian spice and/or herbs for obtaining improved spice and/or herbs flavor extract. The blending of extracted herbs and spices are encouraged to meet consumer's needs, preference and acceptability. Consumer's acceptability studies of infused palm olein with local Malaysian spice and/or herbs are very important for the introduction of these products to the market to select more appreciate flavored oil by consumers.

Accordingly, the present invention provides a method for preparing an infused palm olein, wherein the method includes the steps of (a) heating and stirring spice and herbs with palm olein at 90°C wherein the palm olein to spice or herbs at 10:1 ratio for 20min(garlic extraction process) and 50min(chili extraction process) and varied depending on the selected type of herbs and spices, (b) cooling and stirring a mixture obtained from step (a) at room temperature in a tank, (c) separating an infused palm olein containing cooked spice and herbs obtained from step (b) using a membrane filtration and centrifugation separation techniques at room temperature, (d) blending the infused palm olein with chili spice to the other type of an infused palm olein with garlic spice in an preferred example of 7:3 ratio as well as other rations and (e) recovering and storing the infused palm olein in cool and dry place.

Palm olein especially red palm olein has an exceptionally high level of phytonutrients such as carotenes, tocotrienols, squalene and others. With the infusion of essential oils from chillies and other herbs, we are able to extend the nutritional benefits of the oil. We have demonstrated in our laboratory antioxidant, anticancer and anti inflammation properties for some mix phytonutrients. The infused red oil with the essential oil/herbs will allow for more application for the oil. The oil can be used in many culinary applications e.g. as a condiment in the preparation of noodles, marinating meat, "sambals", curries, salad and light frying.

The invention has enhanced the value of the palm olein with single or mix of natural flavour and essential oils from herbs, spices, vegetable and/or fruits. It should be noted that the phytonutrients content of the product and its active ingredient (predominantly antioxidant) is beneficial to health. The product will be the first infused oil manufactured in Malaysia.

The advantage of this invention is environmental friendly, simple and economical with which no solvents is involved in the process and all ingredients are available from local market.

Claims:

1. A method for preparing an infused palm olein, the method includes the steps of:

(a) heating and stirring spice and herbs with palm olein at a predetermined temperature wherein the palm olein to spice or herbs at a predetermined ratio and for a predetermined period of time;

5 (b) cooling and stirring a mixture obtained from step (a) at a predetermined temperature in a tank;

(c) separating an infused palm olein containing cooked spice and herbs obtained from step (b) using a predetermined separation technique at a predetermined temperature;

(d) blending the infused palm olein with another type of an infused palm olein; and

(e) recovering and storing the infused palm olein.

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2. The method as claimed in claim 1, wherein the predetermined temperature in step (a) is below 90°C and the predetermined ratio between the palm olein to spice or herbs is 10:1.

3. The method as claimed in claim 1, wherein the predetermined temperature in step (b) is ambient
15 temperature and the tank is a water jacketed tank.

4. The method as claimed in claim 1, wherein the predetermined separation technique used in step (c) is a pressurized separation technique and the predetermined temperature is below 90°C.

20 5. The method as claimed in claim 1, wherein the infused oil is recovered and stored in step (e) using a common industrial bottling method e.g. vacuum bottling method.