

METHOD FOR PROVIDING A COCOA REPLACER BASED ON A MATERIAL SELECTED FROM ROASTED WHEAT, ROASTED AND/OR MALTED BARLEY

This disclosure relates to a cocoa replacer and to a method of making such a replacer.

5 Cocoa is a desirable flavour in many comestible products. However, cocoa beans are a commodity whose price varies considerably, and in times of shortage, it can become relatively expensive, which cost has to be passed on to the consumer. It is therefore desirable that a flavour material that can at least partially replace genuine cocoa can be found. Such materials are already well known. Examples of suitable materials that can at least partially
10 replace cocoa include roasted wheat, malted and/or roasted barley and carob powder. While these have been used extensively and quite successfully commercially, they have certain drawbacks. One of these is the difficulty of achieving the appropriate dark colour. A greater problem is the aftertaste associated with many of these materials. For example, black malted barley, one of the more popular cocoa replacers, exhibits characteristic strong off-
15 tastes (described variously as "smoky" and "ashy"), plus a lack of the desired bitterness and astringency necessary for a good cocoa flavour.

It has now been found that it is possible to treat these cocoa replacers in such a way that these undesirable characteristics can be considerably reduced. There is therefore provided a
20 method of providing a cocoa replacer based on a material selected from roasted wheat, roasted and/or malted barley, comprising the steps of

- (a) addition of the roasted wheat, roasted and/or malted barley to water at an initial temperature of at least 65°C in an evaporation vessel;
 - (b) maintaining the initial temperature for at least 30 minutes;
 - 25 (c) adding cold water; and
 - (d) immediately spray-drying the solution to give the cocoa replacer;
- the water in step (a) comprising from 12-22% of the total weight of roasted wheat, roasted and/or malted barley and water, and the water in step (c) comprising from 25-40% of the water in step (a).

30 There is also provided a cocoa replacer with reduced off-taste, preparable by the method as hereinabove described.

Cocoa replacers based on roasted wheat, malted and/or roasted barley and carob powder (hereinafter "the raw materials") are well-known and readily-available items of commerce, and any such material can be used in the process.

- 5 It is important that the initial mixing in water be performed in an evaporation vessel, that is, a vessel that permit evaporations. This is typically an open vessel or a closed vessel under vacuum. Both are well known to the art. The water used is ordinary tap water. The quantity of water used is from 12-22% of the total weight of roasted wheat, roasted and/or malted barley and water. In a particular embodiment, it is from 14-18%, more particularly from 15-10 17%.

In the process, the water is initially heated to at least 65°C. The temperature can be up to 95°C, and in a particular embodiment it is in the region of 90°C. It is maintained at this temperature during and after the addition of the raw materials. It is natural that the 15 temperature will fall to under the initial heating temperature when the raw materials are added, but this is not critical, so long as the temperature is returned to at least that initial temperature as soon as possible. This temperature is maintained for 20 to 70 minutes, particularly 30 minutes. Further water is then added, the quantity of this water being from 25 to 40% of the quantity of water in step (a), particularly from 25 to 35%, more 20 particularly from 28-32%. This complete mixture is then spray-dried, using conventional methods and equipment.

When this last-named water addition (step (d)) is made, it is also possible to add at this point at least one further flavour ingredient, to give a desired flavour, in addition to the 25 cocoa flavour. The desired flavours include chocolate, cocoa, vanilla, nuts and umami. The skilled flavourist can regulate the nature and proportion of such ingredients to create the nature and extent of the additional flavour. Such flavours are well known to and widely used by the art, and typical specific (and non-limiting) examples include pyrazines, phenyl ethyl esters, phenyl ethyl alcohols, phenyl ethyl aldehydes, pentanal, isopentanal and 30 vanillin.

The resulting cocoa replacer has an agreeably dark colour and can be used to replace real cocoa at a proportion of up to 70% but particularly between 5 and 50%, more particularly

Claims:

1. A method of providing a cocoa replacer based on a material selected from roasted wheat, roasted and/or malted barley, comprising the steps of
 - 5 (a) addition of the roasted wheat, roasted and/or malted barley to water at an initial temperature of at least 65°C in an evaporation vessel;
 - (b) maintaining the initial temperature for at least 30 minutes;
 - (c) adding cold water; and
 - (d) immediately spray-drying the solution to give the cocoa replacer;
- 10 the water in step (a) comprising from 12-22% of the total weight of roasted wheat, roasted and/or malted barley and water, and the water in step (c) comprising from 25-40% of the water in step (a).
2. A method according to claim 1, in which the quantity of water in step (a) is from 14-18%, more particularly from 15-17%, by weight of the total weight of roasted wheat, roasted and/or malted barley and water.
- 15 3. A method according to claim 1, in which the quantity of water in step (c) is from 25-35%, more particularly from 28-32%, by weight of the water of step (a).
- 20 4. A method according to claim 1, in which the evaporation vessel is an open vessel.
5. A method according to claim 1, in which the evaporation vessel is a closed vessel with vacuum.
- 25 6. A method according to claim 1, in which there is added at step (d) at least one further flavour ingredient.
7. A cocoa replacer with reduced off-taste, preparable by the method according to claim 1.
- 30

METHOD FOR PROVIDING A COCOA REPLACER BASED ON A MATERIAL SELECTED FROM ROASTED WHEAT, ROASTED AND/OR MALTED BARLEY

This disclosure relates to a cocoa replacer and to a method of making such a replacer.

5

Cocoa is a desirable flavour in many comestible products. However, cocoa beans are a commodity whose price varies considerably, and in times of shortage, it can become relatively expensive, which cost has to be passed on to the consumer. It is therefore desirable that a flavour material that can at least partially replace genuine cocoa can be found. Such materials are already well known.

- 10 Examples of suitable materials that can at least partially replace cocoa include roasted wheat, malted and/or roasted barley and carob powder. Cocoa imitations and extenders have been disclosed in, for example, WO 80/02636, GB2031705 and DD245355, and by C. Andres in "Food Processing" (September 1978), 74-75. The last-named is commercially available as VBR (ex Viobin USA).

15

While these have been used extensively and quite successfully commercially, they have certain drawbacks. One of these is the difficulty of achieving the appropriate dark colour. A greater problem is the aftertaste associated with many of these materials. For example, black malted barley, one of the more popular cocoa replacers, exhibits characteristic strong off-tastes (described

- 20 variously as "smoky" and "ashy"), plus a lack of the desired bitterness and astringency necessary for a good cocoa flavour.

It has now been found that it is possible to treat these cocoa replacers in such a way that these undesirable characteristics can be considerably reduced. There is therefore provided a method of

- 25 providing a cocoa replacer based on a material selected from roasted wheat, roasted and/or malted barley, comprising the steps of

(a) addition of the roasted wheat, roasted and/or malted barley to water at an initial temperature of at least 65°C in an evaporation vessel;

(b) maintaining the initial temperature for at least 30 minutes;

- 30 (c) adding cold water; and

(d) immediately spray-drying the solution to give the cocoa replacer;

the roasted wheat, roasted and/or malted barley in step (a) comprising from 12-22% of the total weight of roasted wheat, roasted and/or malted barley and water, and the water in step (c) comprising from 25-40% of the water in step (a).

35

There is also provided a cocoa replacer with reduced off-taste, preparable by the method as hereinabove described.

Cocoa replacers based on roasted wheat, malted and/or roasted barley and carob powder (hereinafter "the raw materials") are well-known and readily-available items of commerce, and any such material can be used in the process.

5

It is important that the initial mixing in water be performed in an evaporation vessel, that is, a vessel that permit evaporations. This is typically an open vessel or a closed vessel under vacuum. Both are well known to the art. The water used is ordinary tap water. The quantity of the roasted wheat, roasted and/or malted barley used is from 12-22% of the total weight
10 of roasted wheat, roasted and/or malted barley and water. In a particular embodiment, it is from 14-18%, more particularly from 15-17%.

In the process, the water is initially heated to at least 65°C. The temperature can be up to 95°C, and in a particular embodiment it is in the region of 90°C. It is maintained at this
15 temperature during and after the addition of the raw materials. It is natural that the temperature will fall to under the initial heating temperature when the raw materials are added, but this is not critical, so long as the temperature is returned to at least that initial temperature as soon as possible. This temperature is maintained for 20 to 70 minutes, particularly 30 minutes. Further water is then added, the quantity of this water being from
20 25 to 40% of the quantity of water in step (a), particularly from 25 to 35%, more particularly from 28-32%. This complete mixture is then spray-dried, using conventional methods and equipment.

When this last-named water addition (step (d)) is made, it is also possible to add at this
25 point at least one further flavour ingredient, to give a desired flavour, in addition to the cocoa flavour. The desired flavours include chocolate, cocoa, vanilla, nuts and umami. The skilled flavourist can regulate the nature and proportion of such ingredients to create the nature and extent of the additional flavour. Such flavours are well known to and widely used by the art, and typical specific (and non-limiting) examples include pyrazines, phenyl
30 ethyl esters, phenyl ethyl alcohols, phenyl ethyl aldehydes, pentanal, isopentanal and vanillin.

The resulting cocoa replacer has an agreeably dark colour and can be used to replace real cocoa at a proportion of up to 70% but particularly between 5 and 50%, more particularly

Claims:

1. A method of providing a cocoa replacer based on a material selected from roasted wheat, roasted and/or malted barley, comprising the steps of
 - 5 (a) addition of the roasted wheat, roasted and/or malted barley to water at an initial temperature of at least 65°C in an evaporation vessel;
 - (b) maintaining the initial temperature for at least 30 minutes;
 - (c) adding cold water; and
 - (d) immediately spray-drying the solution to give the cocoa replacer;
- 10 the roasted wheat, roasted and/or malted barley in step (a) comprising from 12-22% of the total weight of roasted wheat, roasted and/or malted barley and water, and the water in step (c) comprising from 25-40% of the water in step (a).
2. A method according to claim 1, in which the quantity of roasted wheat, roasted
 - 15 and/or malted barley in step (a) is from 14-18%, more particularly from 15-17%, by weight of the total weight of roasted wheat, roasted and/or malted barley and water.
3. A method according to claim 1, in which the quantity of water in step (c) is from 25-
 - 20 35%, more particularly from 28-32%, by weight of the water of step (a).
4. A method according to claim 1, in which the evaporation vessel is an open vessel.
5. A method according to claim 1, in which the evaporation vessel is a closed vessel
 - 25 with vacuum.
6. A method according to claim 1, in which there is added at step (d) at least one
 - 30 further flavour ingredient.
7. A cocoa replacer with reduced off-taste, preparable by the method according to claim 1.