Claims

1. A process for providing a modified liquid oat base, the process comprising:

a) mixing an oat material with a first liquefying endo alpha-amylase and incubate at a temperature in the range 65-80°C at which the first liquefying alpha-amylase has amylase activity, thereby providing a first modified oat composition;
b) adjusting the temperature of the first oat composition of step a);
c) adding a second maltogenic saccharifying alpha-amylase and an endoprotease to the first modified oat composition of step b), and incubate at a temperature in the range 50-65°C, at which the second maltogenic saccharifying alpha-amylase and the endoprotease have amylase activity and endoprotease activity, respectively, thereby providing a second modified oat composition; and
d) adjusting the temperature of the second composition of step c) to inactivate the enzymes and pasteurize, such as at a temperature of at least 85°C; and
e) providing a modified liquid oat base.

2. The process according to claim 1, wherein

- step a) is performed for a period of at least 10 minutes; and/or
- step c) is performed for a period of at least 10 minutes; and/or
- step a) is performed for a period in the range 10-120 minutes, such as in the range 15-90 minutes, preferably in the range 15-60 minutes; and/or
- step c) is performed for a period in the range 10-120 minutes, such as in the range 15-90 minutes, preferably in the range 15-60 minutes.

3. The process according to any of the preceding claims, the process comprising:

a) mixing an oat material with a first liquefying endo alpha-amylase and incubate at a temperature in the range 65-80°C at which the first liquefying alpha-amylase has amylase activity for a period of at least 10 minutes, thereby providing a first modified oat composition;
b) adjusting the temperature of the first oat composition of step a);
c) adding a second maltogenic saccharifying alpha-amylase and an endoprotease to the first modified oat composition of step b), and incubate at a temperature in

the range 50-65°C, at which the second maltogenic saccharifying alpha-amylase and the endoprotease have amylase activity and endoprotease activity, respectively, for a period of at least 10 minutes, thereby providing a second modified oat composition; and

d) adjusting the temperature of the second composition of step c) to inactivate the enzymes and pasteurize, such as at a temperature of at least 85°C; and
e) providing a modified liquid oat base.

4. The process according to any of the preceding claims, wherein the first alpha-amylase, the second alpha-amylase and the endoprotease are not produced in a genetically modified organism (GMO).

5. The process according to any of the preceding claims, wherein the process is for providing a modified liquid oat base having increased stability in hot acidic beverages, such as coffee.

6. The process according to any of the preceding claims, wherein

- in step a) the first liquefying alpha-amylase is BAN, preferably BAN 480L; and/or
- in step c) the maltogenic saccharifying alpha-amalyse is Fungamyl 800L; and/or
- in step c) the endoprotease is a metalloendoprotease, such as Neutrase.

7. The process according to any of the preceding claims, wherein

- the first endo alpha-amylase is BAN 480L;
- the second alpha-amylase is Fungamyl; and
- the endoprotease is a metalloendoprotease, preferably Neutrase.

8. The process according to any of the preceding claims,

- wherein step a) is performed at a temperature in the range 65-77°C, such as 67-75°C, such as 69-74°C, preferably such as around 72°C; and/or

- wherein in step b) the temperature is adjusted to a temperature in the range 45-65°C, such as 55-63°C, such 56-60°C, preferably such as around 58°C; and/or
- wherein step c) is performed at a temperature in the range 55-63°C, such 56-60°C, preferably such as around 58°C and/or
- wherein in step d) the temperature is adjusted to at least 90°C for at least 60 seconds, such as 95°C for 60-360 seconds such as 60-180 seconds, such as 60-120 seconds, preferably to at least 95°C for at least 60 seconds.

9. The process according to any of the preceding claims, wherein the provided oat base in step e)

- is suitable for use in hot acidic beverages, preferably when the modified oat base is mixed in cold in the hot acidic beverage; and/or
- is for use in hot acidic beverages; and/or
- is stable in a hot acidic beverage such as coffee; and/or
- does not change the bitterness of the hot acidic beverage.

10. The process according to any of the preceding claims,

- wherein said process does not comprise the addition of exogenous beta-amylase, and/or exogenous protein-deamidase, and/or exogenous glutaminase and/or transglutaminase; and/or
- wherein said process is free from genetically modified enzymes and/or enzymes produced in a genetically modified organism (GMO).

11. A modified oat base obtained/obtainable by a process according to any of the preceding claims.

12. A modified liquid oat base comprising

- a first inactivated liquefying alpha-amylase, such as BAN;
- a second inactivated maltogenic saccharifying alpha-amylase, such as Fungamyl; and

- an inactivated metalloendoprotease, preferably Neutrase.

13. A food ingredient comprising the modified oat base according to any of claims 11-12.

14. A food product comprising the food ingredient according to claim 13, the food product being a coffee beverage

15. Use of the food ingredient according claim 13 in a hot acidic beverage, such as in coffee.