CLAIMS

1. A process for producing a flavoured milk product comprising the steps of:

(a) providing a milk source;

(b) fermenting the milk source using at least one microorganism, to produce a fermented milk source having an acidic pH; wherein the at least one microorganism is a Lactococcus bacterium; and

(c) increasing the pH of the fermented milk source using ammonia, wherein the ammonia reacts with the fermented milk source to produce 2,3,5,6-tetramethyl pyrazine, thereby producing a flavoured milk product wherein the ammonia in step (c) is produced by adding urease to the fermented milk source, and/or wherein step (c) comprises adding ammonia or an ammonium salt to the fermented milk source.

2. A process according to Claim 1, wherein the pH in step (c) is increased to about 6 to about 8.0.

3. A process according to Claim 1 or Claim 2, wherein the step (c) further comprises subjecting the fermented milk source to heat treatment.

4. A process according to Claim 3, wherein said heat treatment comprises at least one of: Ultra High Temperature (UHT) processing, spray drying, roller drying, vacuum belt drying, continuous drying or batch drying, preferably UHT processing or spray drying.

5. A process according to any one of the preceding claims, wherein said *Lactococcus* bacterium is a *Lactococcus lactis* bacterium, a *Lactococcus lactis subsp. lactis* bacterium, or a *Lactococcus lactis* subsp. *lactis* biovar. *diacetylactis* bacterium.

6. A process according to any one of the preceding claims, wherein the lactic acid bacterium is selected from the bacteria deposited at the Collection Nationale de Cultures de Microorganismes under the following accession numbers: CNCM I-1962, CNCM I-2116, CNCM I-4404 and CNCM I-4405; preferably CNCM I-1962, CNCM I-4404 and CNCM I-4405.

7. A process according to any one of the preceding claim, wherein the 2,3,5,6-tetramethyl pyrazine is present at a concentration of at least about 1 parts-per-million (ppm), preferably at least about 5 ppm, more preferably at least about 10 ppm, most preferably at least about 25 ppm, and particularly at least about 50 ppm.

8. A process according to any one of the preceding claims, wherein the milk source in step (a) is an amino acid supplemented milk source.

9. A process according to Claim 8, wherein said amino acid supplemented milk source comprises one or more amino acids selected from the group consisting of: L-phenylalanine, L-leucine, L-isoleucine and L-valine.

10. A process according to Claim 8 or Claim 9, wherein the amino acid supplemented milk source is fermented using the bacterium deposited at the Collection Nationale de Cultures de Microorganismes under the accession number CNCM I-1962.

11. A process according to Claim 10, wherein the flavoured milk product further comprises 5-methyl-2-phenyl-2Z-hexenal, preferably at a concentration of: greater than 1 ppm, about 1-1000 ppm, about 5-500 ppm, about 10-200 ppm, about 10-100 ppm, about 20 to about 100 ppm or about 20-50 ppm.

12. A process according to any one of Claims 8 to 11, wherein the amino acid supplemented milk source is fermented using the bacteria deposited at the Institut Pasteur Collection Nationale de Cultures de Microorganismes under the following accession numbers: CNCM I-1962 and CNCM I-2116, together or sequentially.

5

13. A process according to Claim 12, wherein the flavoured milk product further comprises 2-phenylbutenal, preferably at a concentration of greater than 0.1ppm, about 0.2-100 ppm, about 0.5-50 ppm, about 1-50 ppm, about 1-20 ppm, or about 10-20 ppm.

14. A process according to any one of Claims 8 to 13, wherein the amino acid supplemented milk source in step (a) is prepared by hydrolysis of milk proteins in a milk source thereby providing an amino acid supplemented milk source.

15. A process according to claim 14, wherein said hydrolysis of milk proteins in a milk source is performed by adding at least one protease to said milk source.

16. A process according to claim 14 or 15, wherein said at least one protease is derived from *Aspergillus oryzae*, or from *A. oryzae* strain *ATCC 42149/RIB 40* (yellow koji mould).

17. A process for preparing a food product containing a flavoured milk product, comprising the steps of:

(a) preparing a flavoured milk product by a process according to any one of Claims 1 to 16, and

(b) adding the flavoured milk product:

(i) to a food product, or

(ii) to a food to form a food product.

18. A process according to any preceding claim wherein the milk product has a chocolate flavour.

19. A flavoured milk product comprising 2,3,5,6-tetramethyl pyrazine at a concentration of at least about 10 parts-per-million (ppm), preferably at least about 20 ppm, more preferably at least about 30 ppm, most preferably at least about 40 ppm, and particularly at least about 50 ppm,

wherein the flavoured milk product has a chocolate flavour, and further wherein the flavoured milk product is free of chocolate, chocolate products, cocoa or added chocolate flavourings.

20. A flavoured milk product according to Claim 19 further comprising 5-methyl-2-phenyl-2Z-hexenal, preferably in an amount of greater than about 5 ppm, about 1-1000 ppm, about 5-

500 ppm, about 10-200 ppm, about 10-100 ppm, about 20 to about 100 ppm or about 20-50 ppm.

21. A food product containing a flavoured milk product according to Claim 19 or Claim 20.

22. Use of ammonia or an ammonium salt for enhancing the flavour of a fermented milk product by increasing the concentration of 2,3,5,6-tetramethyl pyrazine in a fermented milk product.

23. Use of a urease for enhancing the flavour of a milk product, by increasing the concentration of 2,3,5,6-tetramethyl pyrazine in a fermented milk product.