

Claims

1. A method of producing a malt and/or cereal based beverage, said method comprising the steps of
- 5 i) providing an aqueous extract of malt and/or cereal kernels
- ii) providing a *Dekkera* yeast strain, wherein said yeast strain is not capable of converting more than 25% of p-coumaric acid into 4-ethylphenol when incubated in an aqueous solution comprising p-coumaric acid
- 10 iii) fermenting said aqueous extract with said yeast thereby obtaining said malt and/or cereal based beverage.
2. The method according to claim 1, wherein said yeast strain is not capable of converting more than 25%, such as not more than 20%, such as not more than 15%, such as not
- 15 more than 10%, such as not more than 5%, such as not more than 1% of the p-coumaric acid present in the aqueous solution into 4-vinylphenol.
3. The method according to any one of the preceding claims, wherein said yeast strain has the genotype I and/or the genotype II:
- 20 I: comprising a mutation in or a deletion of the gene encoding PAD
- II: comprising a mutation in or a deletion of the gene encoding SOD.
4. The method according to any one of the preceding claims, wherein the yeast strain is a *Dekkera anomalous* yeast strain having the genotype I:
- 25 I: comprising a mutation in or a deletion of the gene encoding DaPAD1 of SEQ ID NO:2 or a functional homologue thereof having at least 80%, such as at least 90%, for example at least 95% sequence identity herewith.
5. The method according to any one of the preceding claims, wherein the yeast strain is of the species *Dekkera anomalous*, and said yeast strain comprises a mutant *DaPAD1* gene encoding a mutant DaPAD1 protein lacking at least 50 amino acids, such as at least 70 amino acids, such as at least 100 amino acids, such as at least 150 amino acids of SEQ
- 30 ID NO:2.
6. The method according to any one of claims 1 to 3, wherein the yeast strain is a *Dekkera bruxellensis* yeast strain having genotype I:
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l: comprising a mutation in or a deletion of the gene encoding DbPAD2 of SEQ ID NO:6 or a functional homologue thereof having at least 80%, such as at least 90%, for example at least 95% sequence identity herewith.

- 5 7. The method according to any one of claim 1 to 3, wherein the yeast strain is of the species *Dekkera bruxellensis*, and said yeast strain comprises a mutant DbPAD2 gene encoding a mutant DbPAD2 protein lacking at least 50 amino acids, such as at least 70 amino acids, such as at least 100 amino acids, such as at least 150 amino acids of SEQ ID NO:6.
- 10 8. The method according to any one of the preceding claims, wherein the yeast strain:
- i. is of the species *Dekkera anomalous*, and said yeast strain comprises a mutant *DaSOD* gene encoding a mutant DaSOD protein lacking at least the 50 most C-terminal amino acids, such as at least the 100 most C-terminal amino acids, such as at least the 150 most C-terminal amino acids of SEQ ID NO: 4; or
- 15 ii. is of the species *Dekkera bruxellensis*, and said yeast strain carries a mutation in the *DbSOD* gene resulting in a mutant *DbSOD* gene encoding a mutant DbSOD protein lacking one or more of the amino acids of SEQ ID NO:8.
- 20 9. The method according to any one of the preceding claims, wherein said yeast strain is not capable of converting more than 20%, such as not more than 15%, such as not more than 10%, such as not more than 5%, such as not more than 1%, of the p-coumaric acid present in the aqueous extract into 4-ethylphenol.
- 25 10. The method according to any one of the preceding claims, wherein said yeast strain is not capable of converting more than 25%, for example not more than 20%, such as not more than 15%, such as not more than 10%, such as not more than 5%, such as not more than 1% of the ferulic acid present in the aqueous extract into 4-ethylguaiacol.
- 30 11. The method according any one of the preceding claims, wherein said yeast strain is not capable of converting more than 25%, such as not more than 20%, such as not more than 15%, such as not more than 10%, such as not more than 5%, such as not more than 1% of the ferulic acid present in the aqueous solution into 4-vinylguaiacol.
- 35 12. The method according to any one of the preceding claims, wherein said malt and/or cereal based beverage comprises less than 0.5 mg/L of 4-ethylphenol, such as less than 0.3 mg/L, such as less than 0.1 mg/L 4-ethylphenol.

13. The method according to any one of the preceding claims, wherein said malt and/or cereal based beverage comprises less than 1 mg/L of 4-ethylguaiacol, such as less than 0.8 mg/L, such as less than 0.6 mg/L, such as less than 0.5 mg/L of 4-ethylguaiacol.
- 5 14. The method according to any one of the previous claims, wherein the aqueous extract is wort or a fermented malt and/or cereal based beverage.
15. The method according to any of the preceding claims, wherein the yeast strain is not capable of utilizing more than 2% of the maltose present in the aqueous extract.
- 10 16. The method according to any one of the preceding claims, wherein said yeast further carries a mutation in or a deletion of one or more of the following genes:
- c. *MTRA1*, wherein the *MTRA1* gene encodes a MTRA1 protein of SEQ ID NO:10 or 16 or a functional homolog thereof sharing at least 95% sequence identity therewith
 - 15 d. *MTRA2*, wherein the *MTRA2* gene encodes a MTRA2 protein of SEQ ID NO:14 or 20 or a functional homolog thereof sharing at least 95% sequence identity therewith;
 - e. *ISOM(1)*, wherein the *ISOM(1)* gene encodes a ISOM(1) protein of SEQ ID NO:22 or a functional homolog thereof sharing at least 95% sequence identity therewith;
 - 20 f. *ISOM*, wherein the *ISOM* gene encodes a ISOM protein of SEQ ID NO:12 or a functional homolog thereof sharing at least 95% sequence identity therewith;
 - g. *ISOM(2)* wherein the *ISOM(2)* gene encodes a ISOM(2) protein of SEQ ID NO:18 or a functional homolog thereof sharing at least 95% sequence identity therewith;
 - 25 h. *MTRA3*, wherein the *MTRA3* gene encodes a MTRA3 protein of SEQ ID NO:26 or a functional homolog thereof sharing at least 95% sequence identity therewith;
 - 30 i. *MTRA4*, wherein the *MTRA4* gene encodes a MTRA4 protein of SEQ ID NO:28 or a functional homolog thereof sharing at least 95% sequence identity therewith;
 - j. *MTRA5*, wherein the *MTRA5* gene encodes a ISOM protein of SEQ ID NO:30 or a functional homolog thereof sharing at least 95% sequence identity therewith;
 - k. *MTRA6*, wherein the *MTRA6* gene encodes a MTRA6 protein of SEQ ID NO:32 or a functional homolog thereof sharing at least 95% sequence identity therewith.
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17. A *Dekkera* yeast strain, wherein said yeast strain is not capable of converting more than 25% of p-coumaric acid into 4-ethylphenol when incubated in an aqueous solution comprising p-coumaric acid.
- 5 18. The yeast strain according to claim 17, wherein the yeast strain is as defined in any one of claims 2 to 11.
19. A beverage prepared by the method according to any one of items 1 to 16.