

ter adding a grenzdextrinases-fortified diastase solution. Both methods also lead to beverages with a flavor which is untypical of beer.

Similarly, the currently employed methods, in which reverse osmosis is used to deplete the alcohol in the beer, produce alcohol-free or
5 low-alcohol beers that hardly attain the flavor quality of classical full-alcohol content beers.

Moreover, a method for producing a low-alcohol beer-like beverage is known from the patent specification DE 23 44 252 C3, in which a mixture of the wort and 6- α -glucosidofructofuranose (palatinose) is
10 fermented, whereby the mixing ratio of original wort content and palatinose is in the range of 2:1 to 1:2. Beers produced by this method also do not have a sufficiently complete aromatic fullness of flavor.

In summary, it is evident that the currently known production of reduced-alcohol or alcohol-free beers is very resource-consuming and
15 therefore expensive. The costs are increased not only because of the investments into facilities for alcohol depletion, but also by the requisite higher water consumption and ensuing higher waste water and energy costs. Moreover, the flavor of the known alcohol-free
20 beers is not at the same level as the flavor of a conventional beer.

In a first aspect, there is provided a process for the production of a low-alcohol or alcohol-free beer or of a beer-like refreshment beverage, a wort being produced in a first step by mixing brewing
25 water, hops and a carbohydrate source, the wort being boiled in a second step and the wort being subjected to a fermentation process in a third step, a palatinose-containing mixture or palatinose being added before, during or after the fermentation process, characterized in that at least one microorganism selected from the group consisting

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of Saccharomyces diastaticus and Brettanomyces intermedius is used for the fermentation.

5 In a second aspect, there is provided a low-alcohol or alcohol-free beer or beer-like beverage which can be produced by the process as defined above.

10 In a third aspect, there is provided a beer mixed beverage comprising a herbal, flavoring, caffeine, colorant, amino acid, pleasure consumption acid, acid and/or fruit component, and

(a) a low-alcohol or alcohol-free beer or beer-like refreshment beverage, which can be produced by the process as defined above, and a sugar component, in particular a sucrose-containing sugar component, or

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(b) low-alcohol or alcohol-free beer or beer-like refreshment beverage as defined above and palatinose or a palatinose-containing ingredient.

20 In a fourth aspect, there is provided a functional beer-like beverage which can be produced by the process as defined above, comprising micro-organisms and palatinose.

25 The present invention is therefore based on the technical problem to provide Disclosed are methods for producing low-alcohol or alcohol-free beers or beer-like soft drinks, that may comprise a fullness of aromatic flavor adequate to full-alcohol beer and are also suitable for diabetics, whereby the methods can be used without additional investments into fixed assets, in particular without additional alcohol depletion facilities, in normal brewing operations.

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Claims

1. A process for the production of a low-alcohol or alcohol-free beer or of a beer-like refreshment beverage, a wort being produced in a first step by mixing brewing water, hops and a carbohydrate source, the wort being boiled in a second step and the wort being subjected to a fermentation process in a third step, a palatinose-containing mixture or palatinose being added before, during or after the fermentation process, characterized in that at least one microorganism selected from the group consisting of *Saccharomyces diastaticus* and *Brettanomyces intermedius* is used for the fermentation.
2. The process as claimed in claim 1, the carbohydrate source being employed in the form of malted grain or of unmalted grain plus malted grain.
3. The process as claimed in one of the preceding claims, a dark or a light beer being produced.
4. The process as claimed in one of the preceding claims, a top-fermenting or bottom-fermenting beer being produced.
5. The process as claimed in one of the preceding claims, the wort being mixed with the palatinose-containing mixture or palatinose in a ratio of carbohydrate source, in particular malt, to palatinose of 2:1 to 1:1.
6. The process as claimed in one of the preceding claims, the palatinose-containing mixture or palatinose being added as a syrup, in solution or in the form of a crystalline solid.
7. The process as claimed in one of the preceding claims, the fermentation process being carried out as a mixed fermentation using various microorganisms.

8. The process as claimed in claim 7, at least two microorganisms being employed.

9. The process as claimed in claim 7 or 8, the fermentation being carried out using at least one yeast and at least one acid-forming agent.

10. The process as claimed in claim 9, the acid-forming agent being selected from the group consisting of Lactobacillus sp., Acetobacter sp. and Gluconobacter sp.

11. The process as claimed in one of claims 1 to 6, the fermentation process being carried out by means of a single organism.

12. A low-alcohol or alcohol-free beer or beer-like beverage which can be produced by the process as claimed in one of claims 1 to 11.

13. A low-alcohol beer or beer-like refreshment beverage as claimed in claim 12, this being a light or dark beer or beer-like beverage.

14. A beer mixed beverage comprising a herbal, flavoring, caffeine, colorant, amino acid, pleasure consumption acid, acid and/or fruit component, and

(a) a low-alcohol or alcohol-free beer or beer-like refreshment beverage, which can be produced by the process as claimed in one of claims 1 to 11, and a sugar component, in particular a sucrose-containing sugar component, or

(b) low-alcohol or alcohol-free beer or beer-like refreshment beverage as claimed in one of claims 1 to 11 and palatinose or a palatinose-containing ingredient.

15. A functional beer-like beverage which can be produced by the process as claimed in one of claims 1 to 11, comprising micro-organisms and palatinose.