Claims

1. An alcoholic beverage comprising probiotic bacteria having a cell count of ≥ 5.0 log CFU/mL, wherein the beverage further comprises a hop or its derivative, the hop or its derivative having a bitterness of ≤ 30 IBU, wherein the beverage has a pH of 2-6, wherein when the beverage is stored at a temperature ≤ 20 °C, the probiotic bacteria cell count of ≥ 5.0 log CFU/mL is maintained for ≥ 4 days.

2. The beverage according to claim 1, wherein the alcohol content of the beverage is ≥ 0.5% by volume.

3. The beverage according to claim 1 or 2, wherein the hop or its derivative has a bitterness of ≤ 7.5 IBU.

4. The beverage according to any preceding claim, wherein the probiotic bacteria comprises lactobacilli, bifidobacteria, or a combination thereof.

5. The beverage according to any preceding claim, wherein the probiotic bacteria comprised in the beverage is a lactobacilli selected from: *L. paracasei*, *L. rhamnosus*, *L. acidophilus*, *L. casei*, *L. fermentum*, *L. plantarum*, or a combination thereof.

6. The beverage according to any preceding claim, wherein the beverage has a Brix of 4-20 °Bx.

7. The beverage according to any preceding claim, wherein the beverage is beer.

8. A method of forming an alcoholic beverage according to any of claims 1 to 7, the method comprising:

- providing a wort or must;
- adding a probiotic bacteria to the wort or must;
- adding a yeast to the wort or must;
- fermenting the wort or must at a pre-determined period of time and at a pre-determined temperature to form the alcoholic beverage; and
- adding a hop or its derivative, the hop or its derivative having a bitterness of ≤ 30 IBU,

wherein the formed alcoholic beverage is stored at a temperature ≤ 20°C.

9. The method according to claim 8, wherein the hop or its derivative has a bitterness of ≤ 7.5 IBU.

10. The method according to claim 8 or 9, wherein the probiotic bacteria comprises lactobacilli, bifidobacteria, or a combination thereof.

11. The method according to any of claims 8 to 10, wherein the probiotic bacteria comprised in the beverage is a lactobacilli selected from: *L. paracasei*, *L. rhamnosus*, *L. acidophilus*, *L. casei*, *L. fermentum*, *L. plantarum,* or a combination thereof.

12. The method according to any of claims 8 to 11, wherein the yeast is *Saccharomyces* yeast, non-*Saccharomyces* yeast, or a combination thereof.

13. The method according to any of claims 9 to 12, wherein the yeast is *S. cerevisiae*, S. *pasteurianus*, *T. delbrueckii*, *M. pulcherrima*, *P. kluveri*, *L. thermotolerans*, or a combination thereof.

14. The method according to any of claims 8 to 13, wherein the adding a probiotic bacteria and the adding a yeast is carried out simultaneously.

15. The method according to claim 14, wherein the fermenting comprises fermenting the wort or must at a first temperature for a first period of time and subsequently fermenting the wort or must at a second temperature for a second period of time.

16. The method according to claim 15, wherein the adding a hop or its derivative is at the end of the second period of time.

17. The method according to any of claims 8 to 13, wherein the adding a probiotic bacteria and the adding a yeast is carried out sequentially.

18. The method according to claim 17, wherein the adding a yeast is carried out after a third period of time following the adding a probiotic bacteria.

19. The method according to claim 18, wherein the fermenting comprises fermenting the wort or must at a third temperature for a fourth period of time following the adding a yeast and subsequently fermenting the wort or must at a fourth temperature for a fifth period of time.

20. The method according to claim 19, wherein the adding a hop is at the end of the fifth period of time.