

Quality optimisation by selective off-flavour removal from complex aqueous mixtures and flavour profile tuning

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Description

In the beer/beverage industry there is a strong interest in low and non-alcoholic products since their consumption has been strongly increasing over the past few years [1]. However, it is well-known that in terms of sensory characteristics, an alcohol containing product is still preferred over a non/low alcohol beer. Market studies show that out of the population of Dutch consumers whom do not consume non-alcoholic beverages, 60 % state the sensorial defects as the reason [2].

Current production processes result in non-alcoholic beverages with an insufficient flavour profile due to thermal modification or a limited fermentation step. Especially, the so-called warty off-flavours are considered to be unwanted characteristics of alcohol-free products [3].

The project objective is to improve the quality of the end-product either through the development of a novel technology to selectively remove / reduce the warty off-flavours from complex aqueous mixtures or by optimising existing dealcoholisation processes. Thereby, one aim is also to understand the selective removal of off-flavours from non-alcoholic products by (predictive) thermodynamic and mechanistic modelling of the interaction between the product and separation media. This project is partially carried out at the Heineken premises in Zoeterwoude.

For more information on the topic please contact me via e-mail. I am looking forward to discuss possibilities for MSc / BSc projects.

References

1. Nederlandse-Brouwers, Kerncijfers. 2008-2014.
2. de Jongh, J., Peters, W. and van Teeffelen, C., Ruigrok Net Panel, in Nationaal Bieronderzoek Nederland. 2014: Amsterdam.
3. Brányik, T., et al., A review of methods of low alcohol and alcohol-free beer production. Journal of Food Engineering, 2012. 108(4): p. 493-506.