



A special issue of European Food Research and Technology: The chemistry behind malt and beer production—from raw material to product quality

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Received: 27 October 2022 / Accepted: 27 October 2022 / Published online: 27 November 2022
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Beer is known since over 5000 years as one of the oldest biotechnological applications in the world. The production of malt and beer as cereal-based fermented alcoholic beverage today includes a large variety of different beer types and a number of indigenous and traditional beverages in various parts of the world. From a chemical point of view, beer and other cereal-based beverages represent an extremely complex mixture of more than 800 chemical compounds, consisting of volatile and non-volatile compounds influencing the physico-chemical and sensory profile of the beverage.

The essential nature of beer, and the way that it is brewed, has remained unchanged principally. For the modern beer-making industry, automation technology and economic aspects play a key role nowadays. Independent of the production procedure the resulting product quality is essential. Flavor stability is a key quality attribute of beer, and parameters such as turbidity give the first visual impression of beer quality to the consumer. The chemical composition of beer is determined by the raw materials of brewing and by changes that occur during the malting and brewing processes, particularly fermentation and the chemical mechanisms behind play an important role.

The special issue of European Food Research and Technology entitled “The chemistry behind malt and beer production—from raw material to product quality” covers a selection of original research and current review articles related to the whole process from a chemical point of view, beginning from cereal to the final product beer.

The papers deal with chemical background and metabolism of reactions based on the impact of raw materials, fermentation processes (metabolism or chemical background), and shelf-life of final product (e.g. turbidity, haze, foam, flavour stability) as well as analytics and quality control.

We hope that with this compilation we can show that the chemistry of malt and beer is still a highly topical field of research, both from a basic science and an application-oriented perspective. We thank all authors for their very interesting contributions, and would be pleased if we could contribute to further networking and discussion in brewing science with this special issue of European Food Research and Technology.

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Funding Open Access funding enabled and organized by Projekt DEAL.

Declarations

Conflict of interest The authors declare that there is no conflict of interest.

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