

B 18

ORGANIC FOOD PROCESSING IN THE CONTEXT OF SUSTAINABLE AND HIGH QUALITY FOOD PRODUCTION

J. Kahl^{1*}, F. Alborzi¹, A. Beck², S. Bügel³, N. Busscher¹, U. Geier⁴, D. Matt⁵, T. Meischner⁴, F. Paoletti⁶, S. Pehme⁵, A. Ploeger¹, E. Rembiałkowska⁷, O. Schmid⁸, C. Strassner⁹, B. Taupier-Letage¹⁰ & A. Załęcka⁷

¹University of Kassel, Witzenhausen, Germany, ²AOEL, Bad Brückenau, Germany, ³University of Copenhagen, Copenhagen, Denmark, ⁴Forschungsring, Darmstadt, Germany, ⁵Estonian University of Life Science, Tartu, Estonia, ⁶INRAN, Rome, Italy, ⁷Warsaw University of Life Sciences – SGGW, Warsaw, Poland, ⁸FiBL, Frick, Switzerland, ⁹Fachhochschule Münster, Germany, ¹⁰ITAB, Paris, France

*E-mail: kahl@uni-kassel.de; Tel: +49 5542981715

The goal of the paper is to describe and discuss the topic of organic food processing and in particular the processing methods to make it operational. This is done by transferring the underlying paradigms and principles from organic agriculture and food to processing as one important step in the food chain. The focus is on concept development, definitions and examples for verification. Because the concept of organic processing is developed in the context of related approaches such as careful, minimal and sustainable processing, the results presented here are of general interest for agriculture and food scientist as well as stakeholders.

FQH experts elaborated a framework for concept development, definition and evaluation of organic food processing. The work was carried out within FQH with 10–12 experts at different expert workshops. This paper summarizes the outcome of these meetings. In addition a qualitative survey was performed among organic stakeholders on their understanding of organic processing related to concepts and criteria.

The descriptions and discussions are based on relevant scientific literature, including primary research and reviews, reports, books, dealing with organic food quality issues, IFOAM-Principles and Standards, the EC-Regulation 834/2007 and EC-Regulation 889/2008, as well as personal consultancy with different stakeholders in the organic sector.

The conceptual framework is based on underlying paradigms in organic agriculture and food as extracted from literature; the history of organic processing from various sources as well as the clustering of processing methods according to literature and organic standards. Agro-ecology and integral product identity are identified as underlying paradigms. Principles of care, health, fairness were transferred from IFOAM as well as models described by Kahl et al. 2012. Moreover, a system approach, related to understanding of organisms is a central part of the concept. A literature survey among stakeholders at Biofach 2012 shows, that terms like 'organic integrity' and 'vital qualities' are valuable for the practice. Stakeholders agree to regulate technologies in organic processing more strictly.

Three different products including different methods applied on these products are used in order to verify the proposed definition and evaluation. Fresh apple is related to the concept of minimal processing in connection with the organic standards (regulation). Different heating technologies are compared according to their impact on milk product and process quality. From literature the impact of different temperatures (pasteurization, direct and indirect UHT) on milk quality parameters such as proteins can be estimated for potential limits in regulation. Hence, data from LCA measurements on milk processing are still missing. Organic bakery products produced with traditional technology were compared to such organic products produced by exploiting fully the possibilities of organic regulation. Here the wide range of possibilities to select technologies within the organic regulation is visible.

Key words: food processing, organic, quality, sustainability