

Organic Taste of Yoghurt

Sensory Insights out of the EC-Project ECROPOLIS

N. Barylko-Pikielna⁵, A. Bendini⁷, A. Bongartz³, K. Buchecker², M.L. Cezanne³, T. Gallina Toschi⁷, E. Kostyra⁵, S. Kremer⁸, U. Kretschmar-Rüger¹, T. Obermowe⁴, P. Reichl⁶, A. Spiller⁴, H. Stolz¹

Background

Distributors and promoters of organic food claim superior tastes for their products compared to the conventional alternative. This argument however is still subject to a hard debate and thus deserves more scientific evidence. Since repurchases are dependent on the overall liking of a product, and sensory experiences may have an important impact, knowledge about these dimensions is crucial for producers and marketers of organic food to offer products which meet consumer expectations.

Besides other important aspects, sensory properties as well as consumer acceptance of six different product groups (dairy-, meat-, bakery- and tomato-products, vegetable oil and apples) were analysed in detail within the EU funded project ECROPOLIS (www.ecropolis.eu) in six European countries (France, Germany, Italy, Poland, Switzerland, The Netherlands).

Aim and Methods

In order to explain how the scientific approach of the project helps to explore product insights, dairy products represented by “natural (plain) full cream yoghurts” were chosen as an example.

On the one side results of the detailed analysis are capable to show relevant information concerning sensory product properties (sensory profiles) of plain yoghurts as well as the influence of these aspects on the product popularity by the consumer (acceptance test and preference mapping). Additionally results show how the regulatory framework respectively the requirements for plain yoghurts produced under organic regulation influences the sensory appearance of the products. And results show as well the product improvement potential of organically produced plain yogurts.

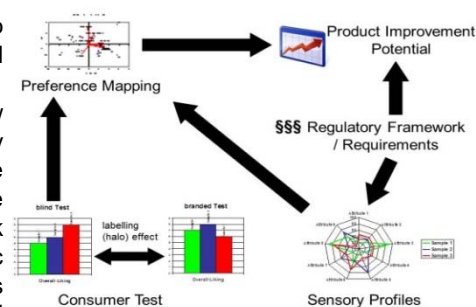


Figure 1: Structure of the subproject Sensory Analysis

Results

Sensory differences between organic and conventional products depend more on production technology (stirred or semi-solid) and regulatory framework (application of milk powder, homogenisation of milk) than on the organic or conventional origin of raw material. For example semi-solid yoghurts are less accepted in some countries. This is probably due to their texture and a certain sedimentation of whey. The same was observed for yoghurts that are produced without application of milk powder.

Disregarding the aspect of “organic” and “conventional”, the acceptance towards plain yoghurt seems to be more or less dependent on few sensory attributes like creaminess, smoothness (both appearance and texture), a moderate sourness (taste) and the presence of liquid on the surface (appearance).

In Germany, Italy, Poland and Switzerland an organic yoghurt scored best regarding overall-liking in the consumer test, in France and the Netherlands a conventional one scored best.

Consumers respond differently in the six European countries concerning the labelling (halo) effect of organic and conventional: Consumers from some countries (e.g. Italy, Poland) are more influenced by the declaration of “organic” and “conventional” when tasting the products than others (e.g. Switzerland, France).

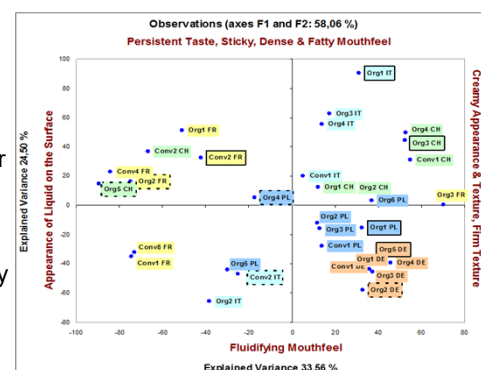


Figure 2: Pan European MosaicYoghurt, (Most liked samples marked by solid line squares; Least liked samples marked by dotted line squares)

Conclusions

The main influence on sensory properties has the choice of fat content, the yoghurt cultures, the addition of milk powder and milk protein, and the processing methods (e.g. stirred/semi-solid, homogenization). The mentioned factors are not regulated on EU-level in the regulation for organic food production. Therefore the emerging differences in sensory attributes between conventional and EU-organic yoghurts cannot be explained by a regulatory impact, but by the individual decision of producers. For not or only partially homogenized yoghurts (e.g. Demeter products) explanations on the packaging can probably be helpful to illustrate consumers why these products are different in their texture compared to conventional products.

Keywords

sensory profiling, consumer test, preference mapping, natural yoghurt, product improvement potential, organic

Project Coordination: ¹Research Institute of Organic Agriculture (FiBL) in Switzerland www.fibl.org

Research Partner: ⁶AgroParis Tech (France) www.agroparistech.fr, ²tz Bremerhaven (Germany) www.tz-bremerhaven.de, ⁴Goettingen University (Germany) www.agrarmarketing.uni-goettingen.de, ⁷University of Bologna (Italy) www.unibo.it, ⁵Warsaw University of Life Sciences (Poland) www.sggw.pl, ³ZHAW University of Applied Sciences Zurich (Switzerland) www.zhaw.ch, and ⁸Agrotechnology and Food Innovations (The Netherlands) www.restaurantvandetoekomst.wur.nl/UK

