



OWC 2020 Paper Submission - Science Forum

Topic 2 - Product and process quality in Organic Agriculture: methods and challenges

OWC2020-SCI-1061

INFORMATION ON ORGANIC MILK PACKAGING IN COUNTRIES WITH DIFFERENT LEVEL OF ORGANIC MARKET MATURITY – A COMPARISON BETWEEN GERMANY, THE NETHERLANDS, ITALY AND POLAND

Lisa M. Borghoff¹ on behalf of ProOrg, Friederike Elsner¹ on behalf of ProOrg, Andrijana Horvat² on behalf of ProOrg, Karolina Misztal³ on behalf of ProOrg, Anna Saba⁴ on behalf of ProOrg, Eleonora Saggia-Civitelli⁴ on behalf of ProOrg and authors declare equal contribution

¹Department of Food, Nutrition and Facilities, University of Applied Sciences Münster, Münster, Germany, ²Food Quality and Design Group, Wageningen University and Research, Wageningen, Netherlands, ³Department of Functional and Organic Food, Warsaw University of Life Sciences, Warsaw, Poland, ⁴Council for Agricultural Research and Economics - Research Center on Food and Nutrition, Rome, Italy

Preferred Presentation Method: Oral or poster presentation

Full Paper Publication: Yes

Abstract: The packaging of a food product is an important communication tool between producers and consumers. Consumers have special requirements for organic products. However, organic food markets within the EU are on a different maturity level. Are there differences in the product quality information on the packages of organic milk in countries in a different stage of development? The research was conducted in Germany, the Netherlands, Italy and Poland in the summer of 2019. The number of milk packages analysed was 37 in Germany, 27 in the Netherlands, 16 in Italy and 13 in Poland. Information on animal welfare, place of origin and on sensory aspects was frequently present on packages in all four countries. Detailed information about the processing of milk was only seldomly found. Differences were found in the amount of national and international labels. Consumers can be overwhelmed by information on product packaging. Therefore, the selection of information should be conducted with care.

Introduction: Food packaging is an important tool for communication of product quality since consumers make the most of their purchase decisions directly at the point of sale (Langner et al., 2009). This is particularly important for communicating extrinsic product quality, as is the case with organic food. Since consumers of organic products can lack knowledge and trust in such products, producers often add voluntary information to communicate product quality, such as information on product processing and product origin (Midmore et al., 2011). However, consumers' buying motives can differ in different countries and between regular and occasional consumers, which can have an impact on the amount and type of product information they require (Sylvander and François 2006). It would be interesting to understand what type of voluntary information related to quality of organic products producers provide to consumers on different European Union (EU) markets.

Material and methods: In the summer of 2019, a full inventory of organic cow's milk, excluding products for special dietary needs (e.g., lactose-free), was performed in organic and non-organic supermarkets in four European countries with a different level of retail sales (FiBL, 2017):

- Germany - as a very developed organic food market with high organic food retail sales;
- the Netherlands and Italy - as medium developed markets with medium retail sales;
- Poland - as a less developed market with small retail sales.

In Germany, one organic and seven conventional supermarkets were included in the study, in the Netherlands, one organic and one conventional, in Italy one organic and one conventional, and in Poland, seven organic and eight conventional supermarkets.

Milk packages were photographed and textual information was extracted from the packages, together with information related to specific labels (e.g., Demeter). Extracted text was content analysed to look for information related to the processing method, specific labels and voluntary product quality information. Information on processing methods was categorized into nine categories (pasteurized, pasteurized on ... °C, pasteurized on high temperature, UHT, no information on thermal processing, homogenized, non-standardized, microfiltrated, non-microfiltrated). Information on labels was placed into categories "international" and "national labels". Voluntary information on product quality was categorized in: animal welfare, non-GMO fodder, quality assurance, place of origin, long tradition of production, emotional context, sensory aspects, environmental sustainability and social sustainability. Finally, frequency analysis was performed in MS Excel.

Results: In total, 92 different organic milk packages were identified in four countries (37 in Germany, 27 in the Netherlands, 16 in Italy and 13 in Poland). In those countries, pasteurized milk is most commonly found on store shelves. Moreover, in Germany and Poland, packaging the most frequently carries information on product homogenization (see Table 1).

Table 1. Frequency of information on processing methods on packaging of organic milk in Germany, the Netherlands, Italy and Poland (expressed as a number of products with specific information in each country and as a percentage of specific information in the total number of products analysed in each country).

| | GERMANY | | THE NETHERLANDS | | ITALY | | POLAND | |
|---|-----------|----------------|-----------------|----------------|-----------|----------------|-----------|----------------|
| | Frequency | Percentage (%) | Frequency | Percentage (%) | Frequency | Percentage (%) | Frequency | Percentage (%) |
| THERMAL PROCESSING METHODS | | | | | | | | |
| pasteurized | 19 | 51 | 16 | 62 | 3 | 19 | 2 | 15 |
| pasteurized on °C | 4 | 11 | 0 | 0 | 0 | 0 | 1 | 8 |
| pasteurized on high temperature | 0 | 0 | 2 | 8 | 5 | 31 | 6 | 46 |
| UHT | 14 | 38 | 8 | 31 | 8 | 50 | 3 | 23 |
| no thermal processing information | 0 | 0 | 1 | 4 | 0 | 0 | 1 | 8 |
| NON-THERMAL PROCESSING METHODS | | | | | | | | |

| | | | | | | | | |
|------------------|----|----|---|----|---|----|---|----|
| homogenized | 33 | 89 | 1 | 4 | 7 | 44 | 8 | 62 |
| non-homogenized | 4 | 11 | 3 | 12 | 0 | 0 | 0 | 0 |
| microfiltrated | 12 | 32 | 0 | 0 | 2 | 13 | 2 | 15 |
| non-standardized | 6 | 16 | 1 | 4 | 0 | 0 | 2 | 15 |

Figure 1 shows the types of voluntary labels on organic milk packages in Germany, the Netherlands, Italy and Poland. In countries with a more developed organic food market (i.e., Germany and the Netherlands), voluntary labels were mainly national, while in countries with a less developed organic market (i.e., Poland), the national labels were outweighed by international labels. The most frequently used labels are “Ohne Gentechnik (“Without genetic engineering”) in Germany and Dutch “EKO” label.

The eco-leaf label, which is required by EU regulation 1169/2011, was found on every packaging, because it is mandatory. In many cases it appeared repeatedly on one package, both on the front and back.

(insert Figure 1)

Figure 1. Type of voluntary labels on organic milk packages in Germany, The Netherlands, Italy and Poland.

In addition, producers often put other voluntary information on the packaging, which can be seen in Figure 2. Organic milk packaging in the four countries the most frequently informs consumers about animal welfare during production (66% products from all countries), place of origin (45%), and sensory aspects (45%). Next to this, German packaging frequently reports about not using GMO feed, while Dutch and Italian products often report about environmental sustainability. In Poland, the largest part of voluntary information is related to assuring high quality of the product, which is also frequently mentioned on Italian organic milk packaging.

(insert Figure 2)

Figure 2: Categories of voluntary product quality information on the organic milk packaging in Germany, the Netherlands, Italy and Poland. Within each product quality information category, numbers represent percentages of that type of information within the total number of organic milk packages analysed in each country.

Discussion: Labels informing about the welfare-oriented animal farming are the most recurrent information reported on the surveyed milk packages. The high frequency of this information could be related to its positive influence on consumer preference for organic milk (Akaichi et al, 2012). Place of origin and sensory information are the other voluntary information that more frequently appeared on the packages. Combining the organic and origin designation information can be an advantage for organic markets, especially in those countries where protecting traditional and local products has been a more attractive business strategy in the past years than promoting organic farming (Thøgersen, 2010). Great part of voluntary information is related to assuring high quality of the products. Labels overload and gaps in consumers' understanding may, however, result in consumer confusion (Grunert & Will, 2007) and might make labels fail as policy or marketing tools to promote organic products to consumers.

Conclusion: In this paper, we studied differences in voluntary and mandatory information on organic milk packages in four countries with, respectively, descending level of retail sales of organic food, i.e., Germany, The Netherlands, Italy and Poland. Many differences were found between the countries in the frequency of displaying national and international labels, information on product processing and other voluntary information. Based on the research, it is hypothesised that the content of voluntary information depends on the degree of organic market development, but more research is needed in this area. In the present study, voluntary labels were mainly national and a great part of them were highlighting high quality of products. However, manufacturers and labelling bodies should understand that too much information can be overwhelming for consumers. Therefore, the emphasis should rather be on effective consumer education to raise awareness of the conditions of organic production and the quality provided by organic certification.

References: Akaichi et al (2012) Assessing consumers' willingness to pay for different units of organic milk: Evidence from multiunit auctions. *Canadian Journal of Agricultural Economics*, 60(4), 469–494
FiBL (2017) Global organic farming statistics and news. www.organic-world.net
Grunert, Wills (2007) A review of European research on consumer response to nutrition information on food labels. *Journal of Public Health*, 15(5), 385–399
Langner et al (2009) *Produktverpackung. Das fünfte Element im Marketing-Mix*. Wiesbaden: Gabler.
Midmore et al (2011) Trans-European comparison of motivations and attitudes of occasional consumers of organic products. *Wageningen Journal of Life Sciences*, 58(3-4), 73-78
Sylvander, François (2006) Organic and low input food consumers: concerns and perspectives for developing the organic market in the future. Joint Organic Congress, Odense, Denmark.
Thøgersen (2010). Country differences in sustainable consumption: the case of organic food. *Journal of Macromarketing* 30(2),171-185

Image 1:

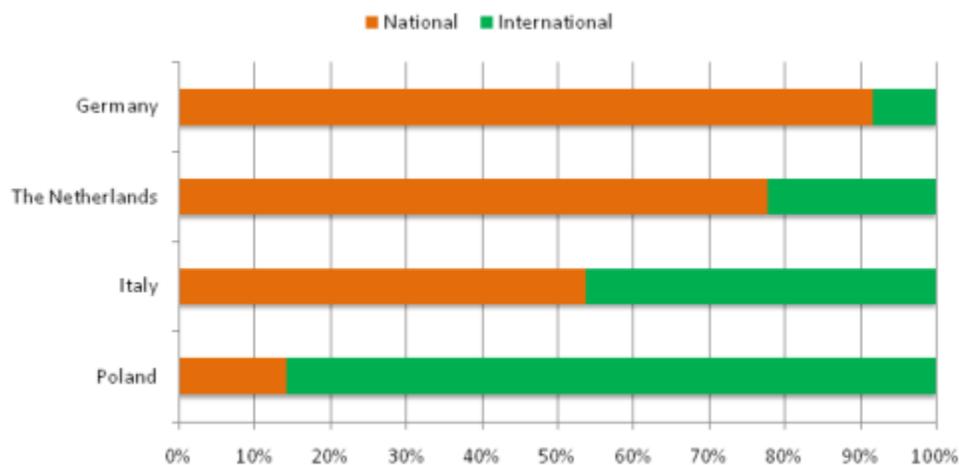
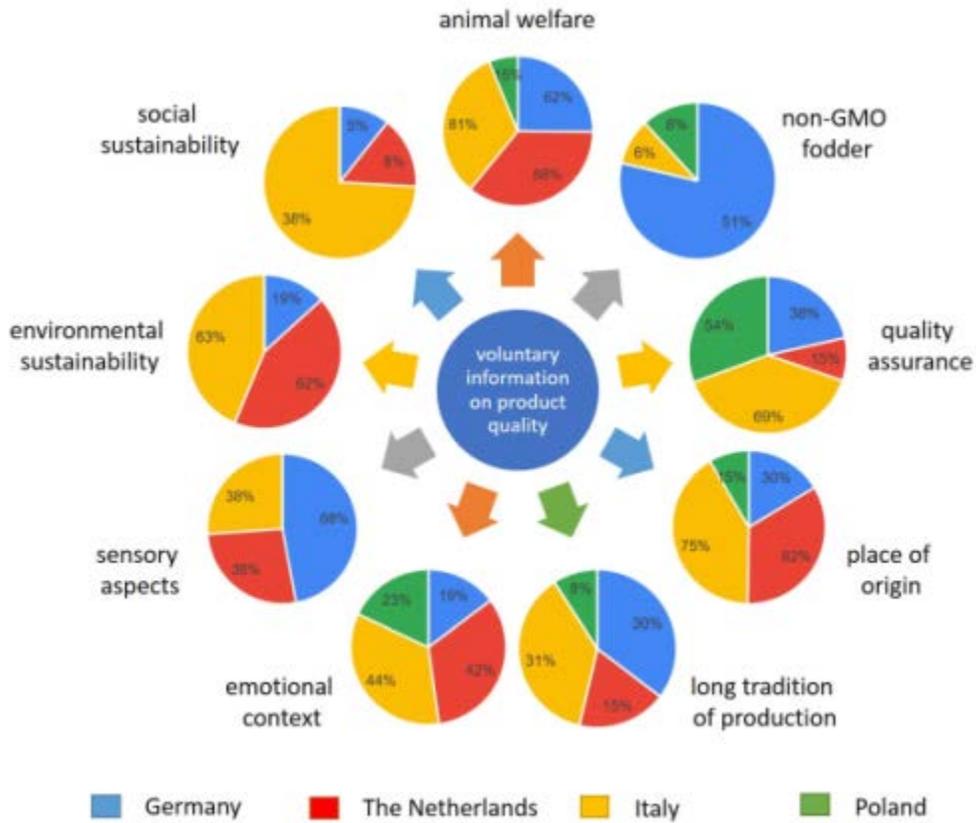


Image 2:



Disclosure of Interest: None Declared

Keywords: food labels, food packaging, food quality, organic milk, packaging information, processing method