



Organic Food Quality & Health Newsletter November 07

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Dear Readers

With pleasure we present to you the third FQH newsletter of 2007.

In 2000 the KOALA study was initiated; this was the first FQH-project, as such approved by the FQH-board. In this NewsLetter you find the first results of this project, recently also published in the British Journal of Nutrition. Furthermore an article on aspects of an organic or conventional lifestyle and the announcement of the recently published Handbook of Organic Food Safety and Quality, and finally a short report on the second FQH Scientific Workshop in 2007, and an Agenda with FQH-activities and related activities elsewhere.

We wish you pleasure and inspiration reading this Newsletter. More information on organic Food Quality and Health you can find on the FQH-website www.organicfqhresearch.org. Contributions to a next Newsletter or to the Agenda can be sent to the FQH-coördinator: fqh@louisbolk.nl.

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KOALA – the first prospective study on organic food and health effects in human shows that organic dairy protects against eczema

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Since the year 2000 a follow up study is performed in the Netherlands, in which for the first time the effect of organic food consumption on health outcomes is studied in a follow up study in

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humans. This was one of the first studies approved as being an (by FQH approved) **FQH project**. Recently, results were published in the British Journal of Nutrition. This is the first study in a peer reviewed journal, that establishes a favourable effect of organic foods on health in children. The strict use of organic dairy was shown to lower the risk of eczema in young children with over 30%.



This publication is based on the data from the KOALA study (a Dutch acronym for Child, Parent and Health; Lifestyle and Genetic Constitution). The study is performed by the University of Maastricht, the Louis Bolk Institute and TNO Quality of Life and was designed to identify factors that influence the clinical expression of atopic diseases such as eczema and wheezing (e.g. vaccination, antibiotics, diet, breastfeeding). For this study 2834 pregnant women were recruited at 34 weeks of gestation. To be able to study a broad variety of lifestyle factors, among these group of women 491 women were recruited through “alternative” channels. Because of this recruitment procedure, the study group contains a relatively high number of organic consumers. The women, and especially their newborns are followed since then and information with respect to lifestyle factors and the health status of the children is collected. The Louis Bolk Institute played a mayor role in the recruitment of this “alternative” group and the design of the questionnaires.

Method

All parents were sent detailed questionnaires when the infants were 3, 7, 12 and 24 months of age. Further, venous blood was collected of 815 infants at age two years for the assessment of total and specific IgE (cow-s milk, hen’s egg, peanut, cat, dog house-dust mite, birch and grass pollen). Organic food consumption was measured in pregnant mothers at 34 weeks of gestation and for the children at age 2. Parents were asked whether their infant had consumed one or more products out of seven food groups: 1) meat, 2) eggs, 3) vegetables, 4) fruit, 5) dairy, 6) bread, and 7) dry products such as pasta, rice, beans and wheat, and whether the consumed products were conventionally or organically produced. Eczema and wheeze occurrence were determined using standardized questionnaires and infants were clinically examined at age 2 for the presence of atopic dermatitis.

Results

After 2 years of follow-up it showed that infants with higher use of antibiotics had a similar risk of eczema and atopic sensitization, but had a higher risk of wheeze complaints compared to infants not using antibiotics. At age of one year no association between vaccination schedule and atopic complaints was observed, but preliminary results at age 2 did suggest some differences; detailed analysis of these data is planned for the near future.

With respect to organic food consumption; the children’s nutrition was categorized according to its origin: conventional (<50% organic), mixed (50-90% organic) and mainly organic (>90% organic).. Eczema was present in 32 % of infants, recurrent wheeze in 11 % and prolonged wheezing in 5 %. At 2 years of age, 27 % of children were sensitised against at least one allergen. Of all the children, 10 % had consumed a moderately organic diet and 6 % a strictly organic diet. Consumption of organic dairy products was associated with lower eczema risk. The Odds Ratio was 0.64 (with a 95 % confidence interval between 0.44 and 0.93), which means that children who consumed strictly organic milk had a 36% lower change of developing eczema in comparison to the children who drunk conventional milk. We found no association of organic meat, fruit, vegetables or eggs, or the proportion of organic products within the total diet with the development

of eczema, wheeze or atopic sensitisation. Sensitisation (as measured by IgE levels) was only weakly associated with eczema or wheeze outcomes.

Closing remarks

For many people in the organic sector, this confirms their idea about a beneficial health effect of organic products. However, with this research we also can reach and may convince conventional consumers and nutritionists. We expect that the effect of organic food consumption may become still clearer when the children grow older. Prolongation of this research is therefore very valuable. (For additional information please contact I.vandeVijver@louisbolk.nl)



Reference

Kummeling I, Thijs C, [Huber M](#), [van de Vijver LPL](#) et al Consumption of organic foods and risk of atopic disease during the first 2 years of life in the Netherlands. *Br J Nutr.* 2007 Aug 29; 1-8 [Epub ahead of print]

Different aspects of organic and conventional food consumers' lifestyle

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Introduction

Organic food is becoming more and more popular nowadays. Moreover, there are many studies aimed at analyzing the quality, composition or nutritional value of organically produced foods. At the same time there are still very few studies which enable to assess objectively the real influence of organic food on human health. Therefore, the main aim of this research was to analyze and to compare some aspects of organic and conventional consumers lifestyle and to compare the self-assessed health state of organic and conventional consumers.

Materials and methods

The research was conducted by a survey method. Questionnaire survey covered 200 women at the average age of 42,3 years: 100 organic consumers and 100 conventional consumers. Respondents were defined as "organic consumers" if organic products constituted more than 25% of their diet for at least half a year. On the other hand "conventional consumers" were defined as women consuming conventional, market food. Respondents were asked to fill up an anonymous survey composed of 4 parts concerning health state, nutrition, living environment quality and contact with nature. Answers to questions from part 1, 3 and 4 were quantified (an adequate number of points was assigned to each answer – more points if the answer represented for example better health state or more contacts with nature). Three indicators were calculated as a result of the quantification: a health state indicator, a living environment quality indicator and an indicator of contacts with nature.

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Results

According to the conducted survey, organic consumers assess their health state significantly better in comparison with conventional consumers (table 1). They get much less often infectious diseases, such as for example influence. They have also less problems with circulatory system, less skin diseases and cancers. They also suffer much less often from headaches. Moreover, they declare less problems with their alimentary canal and visit hospitals not as often as conventional consumers. They often choose better ways to manage their stress, more of them do sports regularly.

	Organic group	Conventional group
Health state indicator (max. 29 points)		
Mean ± SD	21,85 ± 2,837	20,28 ± 3,479
Significance	LSD = 0,885; p=0,0006	

Table 1. Health state indicator of organic and conventional consumers.

The nutritional pattern of organic consumers is also much closer to the nutritionists' recommendations in comparison with conventional consumers' nutritional pattern. Organic consumers eat regular meals more often; they also eat more meals during the day; most of them eat breakfast every day; they drink also more liquids. What is important, organic consumers pay also more attention to the presence and the quantity of synthetic food additives in food products. They also visit fast food restaurants much less often than the representatives of the conventional group.

Analysis of living environment quality shows also a significant difference in favor of organic consumers (table 2). Representatives of this group usually live further from motorways and industrial plants. They also live closer to the green areas more often. In general they evaluate the surroundings of their places of residence more positively than conventional consumers.

	Organic group	Conventional group
Living environment quality indicator (max. 12 points)		
Mean ± SD	8,33 ± 2,184	7,26 ± 2,615
Significance	LSD= 0,672, p=0,0019	

Table 2. Living environment quality indicator of organic and conventional consumers.

The last of analyzed issues regarded contacts with nature. This part of the survey included questions about garden plots possession and about presence of animals and flowers in the respondents' living environment. Respondents were also asked about places where they spend their holidays and weekends, about the time they spend close to the nature. The presented analyses did not show any significant differences between organic and conventional consumers in this issue (table 3).

	Organic group	Conventional group
Contact with nature indicator (max. 18 points)		
Mean ± SD	11,5 ± 3,020	11,07 ± 3,641
Significance	LSD=0,933, p=0,3645 (NS)	

Table 3. Contact with nature indicator of organic and conventional consumers.

Discussion

There are many studies evaluating the quality, chemical composition and nutritional value of organic raw materials and products (Rembialkowska 2000, Asami et al. 2003, Cachoeira and Stertz 2005, Hallmann and Rembialkowska 2006, Hallmann et al. 2007). Moreover, many researchers take up the challenge to evaluate the influence of different agricultural production systems on various physiological parameters, first of all on fertility (Aehnelt and Hahn 1978, Staiger 1986, Velimirov et al. 1992) and the immune system activity in animals (Finamore et al. 2004, Lauridsen et al. 2005). The majority of obtained results clearly shows the positive influence of organically produced food on the analyzed parameters. What is more, many researches prove that the exposure to pesticides (occupational exposure as well as dietary intake of pesticides) influences negatively the semen quality in humans (Abell et al., 1994; Jensen et al., 1996; Abell et al., 2000). These results induced researchers to analyze the influence of organic food, produced without the use of pesticides, on this fertility parameter. Results of two experiments (Abell in., 1994; Jensen in., 1996) show twice higher semen concentrations in men consuming organic food in comparison to those on conventional diet. At the same time there are still very few studies giving undoubted evidence that organic food positively influences human health. There was one study analyzing the self-assessed health state of German nuns consuming biodynamic products for 8 weeks (Huber et al. 2005). The results of this study showed that the self-assessed health state of women increased after organic food consumption period: women declared greater power of concentration, they suffered migraines and other headaches much less often, they had better appetite and less sleep problems, they were more stress-resistant. These results confirm in great measure the results of presented study.

Conclusions

Organic consumers' diet is much closer to the nutritional recommendations in comparison with a diet of conventional consumers.

Living environment quality indicator is also significantly higher for organic consumers; the same tendency regards self-assessed health state of the consumers.

Promotion of ecological lifestyle including organic food consumption can influence positively nutritional pattern and the self-assessed health state of consumers.

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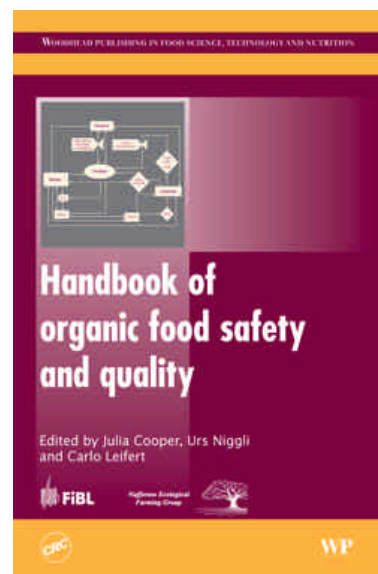
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Handbook of Organic Food Safety and Quality

In June 2007, the Handbook of Organic Food Safety and Quality, edited by J. Cooper, U. Niggli and C. Leifert, was published.

Due to increasing consumer demand for safe, high quality, ethical foods, the production and consumption of organic food and produce has increased rapidly over the past two decades. In recent years the safety and quality of organic foods has been questioned. If consumer confidence and demand in the industry is to remain high, the safety, quality and health benefits of organic foods must be assured. The *Handbook of organic food safety and quality* provides a comprehensive review of the latest research in the area.

The book provides an introduction to basic quality and safety with chapters on factors affecting the nutritional quality of foods, quality assurance and consumer expectations. It discusses the primary quality and safety issues related to the production of organic livestock foods including the effects of feeding regimes and husbandry on dairy products, poultry and pork. A concept for 'inner quality' is developed, specially for organic production. Further chapters discuss methods to control and reduce infections and parasites in livestock. The main quality and safety issues concerning the production of organic crop foods, such as agronomic methods used in crop production and their effects on nutritional and sensory quality, as well as their potential health impacts are examined. The final part of the book focuses on assuring quality and safety throughout the food chain. Chapters focus on postharvest strategies to reduce contamination of food and produce, and ethical issues such as fair trade products. The final chapters conclude by reviewing quality assurance strategies relating to specific organic food sectors.



Handbook of organic food quality and safety (ISBN 1 84569 010 9) is published at £150/US\$285/€220 (plus p&p) by Woodhead Publishing Ltd, Abington Hall, Abington, Cambridge, CB21 6AH, UK. Tel: +44(0)1223 891358. Fax: +44(0)1223 893694. Email: sales@woodhead-publishing.com

FQH Scientific Workshop

5 – 6 November 2007, Louis Bolk Institute, Driebergen

As a continuation and follow-up of the fruitful Workshop in Stuttgart in March of this year, a two-day Scientific Workshop for FQH members was organised in Driebergen (Netherlands).

In a very intensive and fruitful Workshop the discussion on the design of excellent food quality experiments and animal feeding experiments was continued. On Monday November 5th, the design of Quality Research Experiments, and remaining open questions, were discussed, and on Tuesday November 6th, the design of Animal Feeding Experiments, and remaining questions, were the topic.

A summary of the Workshop will be published on the members area of the FQH-website: www.organicfqhresearch.org.

Agenda

International Workshop on the Effects of the Environment on the Nutritional Quality and Safety of Organically Produced Foods (18-19 December 2007, Univ. of Reading, UK)

The purpose of the Workshop, funded by the Natural Environment Research Council as part of their Environment and Human Health programme, is to address the following questions:

- ✍ Are there quantifiable effects of organic rather than conventionally produced food on human health?
- ✍ How does the environment impact on these possible health benefits?
- ✍ How do the public perceive these benefits?

and to define the current state of understanding and outline future research possibilities.

Information regarding the Workshop, along with registration details, can be found at:

<http://www.apd.rdg.ac.uk/organicfoods/>

FQH workshop at BioFach: Food Quality and Health, newest Research Results from 2007 (21 – 24 February, 2008 BioFach, Germany)

The newest research results from 2007 on the area of Organic Food Quality and Health will be presented to consumers and researchers by representatives of FQH.

Imprint

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