**Potential for raw milk in Lithuanian organic dairy supply chain**

V. Skulskis & V. Girgždienė

*Lithuanian Institute of Agrarian Economics,* [virgilijus.skulskis@laei.lt](mailto:virgilijus.skulskis@laei.lt), vilija.girgzdiene@laei.lt

**Implications**

The results of analysis on Lithuanian organic dairy supply chain considering the changes in raw milk production in farms, raw milk processing into dairy products and their realization lead to the conclusion about a considerable potential for the growth of dairy products market. Larger amounts of organic raw milk could be achieved by improving its purchase process; the analysis shows existence of quite a large “free” amount of organic raw milk that is used as conventional milk. A wider range and more active application of promotional measures could encourage dairy enterprises to use better available organic raw milk reserves.

**Background and objectives**

Organic food products are still considered to be niche products, but the benefits of organic farming in the context of sustainable development does not raise doubts, and positive changes in the attitudes of the EU consumers as well as support for agricultural producers consistently increase the market of organic products. Over the past decade, the global market of organic dairy products has grown considerably (compound annual growth rate in 2007–2013 was 3.7%, in 2012–2013 reached 6.2%) and in 2013 accounted for about 11% in the total world market of organic food and beverages.

The objective of the research is to analyse the organic milk supply chain in Lithuania and to obtain the potential for organic raw milk.

**Key results and discussion**

According to the data of certification body “Ekoagros”, in the beginning of 2016, in total 2.9 thou. entities were certified in organic production, processing, trade, etc. in Lithuania, of which in the stage of production 2.7 thou. of entities engaged in primary production; the total certified land area amounted to 220.2 thou. ha, number of cows reached 14.6 thou. (including land area and cows in conversion).

In the stage of processing only 7 entities engaged in raw milk purchase and processing: cooperatives „EKO tikslas" and "EKO Žemaitija“, AB „Pieno žvaigždės“ subsidiaries „Kauno pienas“ and „Panevėžio pienas“, AB „Rokiškio sūris“, AB-F “Šilutės Rambynas“, AB “Žemaitijos pienas“. In the stage of trade a few companies were certified only for wholesale of organic food products (e. g. UAB “Eko123”, UAB “Sanitex”, UAB “Varėnos pienelis”, UAB “Nestle Baltics”, AB “Žemaitijos pienas”, etc.) as well as a number of entities were certified for trade and storage (e. g. UAB “MAXIMA LT”, UAB “Rimi Lietuva”, UAB “Lidl Lietuva”, etc.).

As concerns the final stage of the chain – consumption, 43.9% of consumers of organic products in Lithuania realize the importance of healthy food, 21.3% are interested in a healthy lifestyle, 15.9% recognize the significance of physical activity to health, 11.8% take care of their health consuming organic products (Klupšas & Vanagienė 2010).

Part of the organic milk produced is consumed on farms; however, the data on this consumption are insufficiently accurate due to a lack of official data. The authors’ calculations revealed that 0.5–0.7 thou. tons of organic milk per year was consumed by farmers’ families for their own needs. Considering scientific recommendations for   
well-balanced feeding of calves and heifers, especially those for breeding, calculations showed that 3.1–4.9 thou. tons of milk per year was used on organic farms to feed calves. In 2004–2014 the conventional dairy farms each year 2.4–6.0% of the milk produced sold directly to consumers. With reference to the data of conventional dairy farms, it is estimated that organic farms each year sold 0.9–3.2 thou. tons of milk directly to consumers.

Due to various reasons such as the problems in raw milk purchase process (e. g. not daily collection of raw milk from small farmers; milk after cow treatment with chemical medicines does not meet the requirements of organic milk, etc.), farmers part of organic milk sell to processors as conventional milk.

According to the data of „Ekoagros” (data provided by farmers), in 2013–2015 the entities engaged in milk purchase and processing from the Lithuanian milk producers purchased 21.9, 21.5 and 19.0 thou. tons of organic raw milk (of natural fatness) per year that accounted for 41.6%, 50.4% and 47.8%, respectively, of the total amount of organic milk produced in Lithuania. With reference to the data of Agricultural Information and Rural Business Centre, in 2013–2015 the amounts of raw organic milk bought from Lithuanian producers were increasing. In 2015 as compared to 2014 and 2013 the amounts purchased by Lithuanian milk processors increased by 5.5% and 14.3%, respectively. In 2013–2015 Lithuanian milk processors purchased and processed 16.9, 18.2 and 19.2 thou. tons of raw organic milk (of natural fatness) per year, but only 73,1%, 62.4% and 61.9%, respectively, of the total amount of purchased raw milk processed to organic dairy products.

In January 2016 the share of organic butter (fat content not more than 85%) accounted for 0.01% of the total amount of butter produced in Lithuania, sour milk – 0.03%, fresh cheese – 0.14%, sour cream – 1.2%, drinking milk – 1.9%, cottage cheese – 4.7%, yoghurt with additives – 9.4%, natural yogurt – 60.1%. Most of these products were sold in the domestic market: drinking milk – 81.5%, sour cream – 83.9%, flavoured yogurt – 94.3%, yogurt without additives – 99.0%, cottage cheese – 99.99%. Sales of organic dairy products are slowly declining; it is likely that the main reasons behind the decrease are: the country's purchasing power limits consumption of organic products, and the demands for organic dairy products in Lithuania are already almost satisfied.

Due to differences in data collection, different information sources provide different data about organic raw milk purchase, therefore, the amounts bought and the shares of the total milk production are also different. It should be noted that in recent years significant steps are made in order to gather the best possible information on the organic raw milk production, purchasing and processing, but the authors faced a lack of data and their reliability problem. This implies the proposal consistently from the methodological point of view to improve both the collection of data and the assurance of the integrity and consistency of these data publication.

**How work was carried out?**

The calculations were based on scientific recommendations for animal feeding in organic farms; the input-output methodology was applied. Statistical analysis refers to the data of certification body “Ekoagros”, Agricultural Information and Rural Business Centre, Statistics Lithuania. The analysed period covers the 2013–2015 period.

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