Values and image of pasture-based milk production systems

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Abstract

In a series of scientific presentations in the years 2007-2009 on the topic of 'values and image of pasture-based milk production systems', the current state of knowledge on the special characteristics of this milk production system and the dairy products derived from it were gathered and the market potential for dairy products from pasture-based production systems was described. Compared to milk from cows fed with mainly maize silage and concentrate supplements, milk from pasture-based production systems has higher levels of nutrient contents that are important for human health (e.g. poly-unsaturated fatty acids). Furthermore, pasture-based milk production plays an important role for agriculture in fulfilling the various multifunctional tasks as required by the Swiss Constitution. Consequently, pasture-based dairy products have a very positive image. Furthermore, studies show that actual consumer behaviour is favouring naturally produced domestic products. Thus pasture-based milk products, even though sold at a higher price, do have a market potential.

Keywords: milk production, market potential, fatty acid, multifunctionality

Introduction

The Swiss dairy farmers face a more expensive production environment compared to their competitors abroad. Higher salaries and small-scale topographic conditions are two major reasons for this. To cover the additional expenses, they must sell their products at a higher price, which can be justified by the quality of products and production. In Switzerland, the dairy cows are fed to about 2/3 with grass, grass silage and hay. This is the one major distinctive feature of grassland- and pasture-based milk production systems, compared to most other production systems worldwide, in which cows are fed primarily with corn-based feed and concentrate supplements. 'Values and image of pasture-based milk production systems in Switzerland' was the title of a joint action in 2007-2009 to point out the special qualities of this production system and the dairy products derived from it. The action was supported by the Federation of Swiss Milk Producers SMP, the agricultural research facilities, the agricultural advisory centres and the Swiss network for milk production Profi-Lait. In a series of conferences, experts summarised the current state of knowledge on the following topics:

- the special qualities of milk from pasture-based production and its components (e.g. fatty acids) (Stoll *et al.*, 2007)
- the importance of pasture-based milk production for agriculture in fulfilling the various multifunctional tasks as required by the Swiss Constitution (Lobsiger and Albisser, 2007)

• the market potential of the dairy products derived from pasture-based production systems The key messages of the lectures and papers presented in those conferences are summarized below.

A) Special characteristics of pasture-based milk and dairy products

In a scientific conference held in November 2007 at the Swiss Federal Research Station Agroscope Liebefeld-Posieux ALP, the special characteristics of pasture-based milk were discussed. In particular, influence of grass-based diets on milk fatty acid (FA) composition and eventual benefits for human health were reviewed. Martin *et al.* (2007) summarised that different feeding strategies do have a significant effect on FA composition in the milk. E.g. he showed that milk fat from grass-based diets is poorer in short-chain FA and linoleic acid and richer in α -linolenic acid when compared to corn silage diets. The FA composition and the n-6 and n-3 fatty acids ratio in milk derived from grass-based milk production are consistent with current nutritional principles and recommendations. However, it could not be answered conclusively to what extent the differences found are relevant to human health. It is likely, that with a normal consumption of dairy products, the intake of n-3 and other poly-unsaturated FA in Switzerland is not high enough to have a preventive or even curative effect (Stehle, 2007).

B) Added values or public and ecological services

Based on the Swiss Constitution, which describes the multifunctional tasks of agriculture in Switzerland, the government promotes methods of production that are close to nature, environmentally acceptable and animal-friendly, encouraging them through economic incentives. Grass-based production systems meet those requirements in an ideal manner. This has been shown in a series of colloquiums at the Swiss Federal Institute of Technology ETH in Zurich 2007 (Lobsiger and Albisser, 2007, presentations see www.profi-lait.ch > Dokumentation). Some key-messages from the presentations are summarised in this chapter: Grassland management is indispensable for maintaining an attractive landscape in Switzerland, which again is one of the main arguments for the local tourism industry. Furthermore, the intensity of production plays a crucial role for the biodiversity in grassland regions: the abandonment of farming and thus the reforestation of grassland as an extreme form of extensification has a negative impact on biodiversity, just as a strong intensification. In terms of animal welfare, pasture-based milk production systems provide especially animalfriendly conditions for livestock. Grass is the original feed of ruminants. Those public services, referred to as *added values* of milk production in Switzerland, contribute to a large extent to the positive image of local milk production.

C) Consumer preference and willingness to pay for pasture-based domestic dairy products

The commercial value of 'swissness' has become a crucial question, as EU and Switzerland are negotiating a free-trade agreement. The issue of the Swiss consumers' preference and willingness to pay for Swiss fresh food products has been studied in-depth since 2008 (Bolliger and Reviron, 2008). Studying the Swiss consumers' attitude and buying behaviour regarding 'pasture-based milk production systems' is a tricky exercise, because the comparison point with milk products obtained using other kinds of products it is, however, possible to extend results that have been obtained for other products (poultry, fruits, apple juices, meat) for which choice between EU products and Swiss products is effective and acknowledged by consumers. Results show strong common features and lessons (Reviron and Thevenod-Mottet, 2009): if sold at the same price as the EU competing product, more than 80% of the interviewed persons prefer the Swiss product. Two kinds of reasons are given spontaneously by the interviewed persons for explaining their preference: 'ethno-centric' reasons (linked to general expected benefits: to support the Swiss economy, to support Swiss

agriculture; ecological reasons such as short transport...) and – less pronounced – 'egocentric' reasons (linked to the concerned product: method of production, product quality, taste, safety (controls)...). A second important result is the willingness to pay a higher price for domestic products: although stated preferences may vary from real customer behaviour in the shops, remarkably, 80% of the consumers interviewed in a representative survey are ready to pay more for Swiss products, of which more than half will pay more than 10% higher prices. Furthermore, the studies revealed that 'egocentric' expected benefits and willingness to pay increase sharply when the consumer perceives that the quality of the Swiss product, i.e. the 'swissness' becomes a strong argument for product placement and advertising (Feige *et al.*, 2008). That is why it is important to get reliable information on the difference of quality differs according to the production process. The production system, its influence on quality and the image of products are crucial elements of differentiation that will become a commercial argument in liberalised markets.

Conclusions

The action 'Values and image of pasture-based milk production systems in Switzerland' has shown that the local grassland-based milk production system does have verifiable positive impacts on the quality of milk and dairy products. Thus it stands out from milk from cows mainly fed with corn and concentrate supplements. Furthermore, grassland-based and, in particular, pasture-based milk production systems are indispensable to maintain the typical Swiss landscape, to ensure biodiversity and to fulfil the various multifunctional tasks as required by the Swiss Constitution. Swiss dairy products benefit from a positive image based on these findings. The commercial value of 'swissness' has been described for other products. Swiss consumers prefer domestic products and are willing to pay higher prices. The more consumers perceive product differences, the more accentuated this preference is. Thus it is important to document and to communicate the special values and image of pasture-based milk production systems in Switzerland.

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