Raw milk and allergy prevention – a possible feature for organic milk?

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**Background and objectives**

Having its roots in the late 1980ies, a series of recent reports connected with the so-called hygiene hypothesis have indicated some possible involvement of raw milk as a protective agent against asthma and allergies. From an epidemiological viewpoint, there is an inverse correlation between raw farm milk consumption by infants during early childhood and the development of such diseases or disorders during later life, especially in rural populations. Besides this general observation, further studies support the assumption that even more criteria might play some role as interacting criteria. For example, the confrontation with non-infectious microbes including some of their fragments, rural environment involving the direct exposure to domestic animals, but also the intestinal microbiota as well as the immune system of the individual obviously possess some significance. However, from the viewpoint of public health, the preventive approach of drinking raw milk is hazardous for microbiological reasons. Hence, national and international regulatory requirements do not generally allow raw milk distribution, and in order to guarantee safe milk, pasteurisation is implemented as an obligatory step in milk processing. Although modern dairy technology can be regarded as a pacesetter for the production of highly nutritious food and also ensures microbiological safety as well as a certain shelf-life, it is well-known that conventional dairy technology has some impact on heat-sensitive milk ingredients.

**Key results and discussion**

To date it remains unclear whether single compounds or a cocktail thereof are of relevance as an anti-allergic agents in raw milk, but it seems to be clear that they are heat-sensitive, maybe even technology-sensitive. This review aims to give some update on the role of raw milk and/or its constituents in allergy prevention, also considering possible advantages of organic milk in such a context. In addition, challenges and strategies will be discussed to control and maintain safety of a raw milk-based formula product.

**How was the work carried out?**

This work presented is based on several experiences collected through the past twenty years and hence represents an amalgamate of own laboratory research with literature review. Within a former EU project (Gabriel), farm milk samples from different areas in Europe were examined for their status (native vs. heat-treated) and for compositional details relevant for exerting immunological effects. In another study, possible technologies for the collection and separation of relevant milk fractions were investigated and optimized.

**Selected references**

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