Milk as a mirror of its environment

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Breast milk – as the first food for the newborn, whether human or mammal – contains all the essential nutrients that the newborn requires. Breast milk is a whole food in the sense that the baby is fully nourished by it. Its composition changes and is therefore adapted to the needs of the growing infant. Milk is a healthy food both for children and adults, but can trigger intolerances (to lactose) or food allergies. While milk is one of the basic foods in European countries, in Asian countries it is drunk very rarely or not at all. Asians have no lactase, the enzyme required in order to digest milk. In terms of nutrients, besides the easily digestible milk protein, milk provides lactose, valuable B vitamins and vitamin D. It is also an important source of calcium and other minerals. Fresh unprocessed milk, the raw milk, contains enzymes and microorganisms by nature. These help digestion and contribute to developing and maintaining a health gut microbiota. The specific fatty acid composition of the milk is particularly sensitive and is highly dependent on the cows' feed and the way they are kept [1]. Studies show that milk from cows that are kept extensively and eat a lot of grass but only small amounts of concentrates has a higher content of polyunsaturated fatty acids and conjugated linoleic acid compared to milk from cows kept under intensive conditions [1]. The animals' feed also affects the function of the β-lactoglobulin, an important whey protein in the milk [2]. β-lactoglobulin plays an important role in the immune system and is a key molecule in what is referred to as "farm protection" from allergies. People who have grown up and live in the country, in particular directly on a farm, have a lower risk of allergic illnesses. Influencing factors besides the farm environment are probably drinking untreated milk, which contains β-lactoglobulin. The anti-allergic property of the β-lactoglobulin is due to natural ligands such as flavonoids [2]. The preventative effect of raw milk on asthma and allergies has also been demonstrated in children who did not live on a farm but who drank raw milk regularly. These children were less susceptible to asthma and allergies than children who were fed industrially processed milk [3]. If milk is pasteurised and homogenised, both the heat-sensitive components of milk such as proteins and the structure of the milk fat are altered, causing the allergy potential to increase [4]. In a blind oral challenge test as part of a pilot experiment, eleven children who were allergic to cow's milk tolerated up to 50 ml of biodynamic certified raw milk, while eight of the eleven children showed pathological reactions to the pasteurised and homogenised conventional milk [4]. Despite the above-mentioned benefits of untreated milk, its consumption is generally discouraged due to the health risk from pathogenic microorganisms, or it may not be offered for sale in the first place. Pasteurisation kills microorganisms and pathogens and prolongs the shelf life of the milk. Pasteurisation first spread during the 1950s and, with regard to the frequency of diseases of civilisation, such as overweight, cardiovascular diseases and asthma and allergies, the question can be asked as to whether there might be a link to milk quality [5].

It is a characteristic of milk to assimilate and reflect environmental conditions, including animal husbandry and animal health in general. The feed, animal care and the natural surroundings, the farm and the people on the farm all play a part. The milk therefore indicates how the cows are kept and the type of farming via differing concentrations of ingredients [1]. In addition to the nutrients, the human being absorbs all the subtleties of the milk as a living food. So

drinking the milk gives some experience of the cow's situation and that of the farm. If the raw milk is not treated further, its vitality and authenticity are preserved, and it even contributes to health, as the above-mentioned studies show. If milk is to be a healthy food, we need an animal husbandry that is in keeping with the cow's nature.

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