

Organic milk boasts higher vitamin E and carotenoid levels

03/11/2004 - Organic milk has significantly higher quantities of vitamin E - a key component in contributing to the shelf-life of milk - than its conventional equivalent, say Danish researchers, suggesting the origins of the difference are rooted in the feed.

Food scientists at the [Danish research centre for organic farming](#) studied the content of potential antioxidants and vitamins in conventional and organic milk over several months. They found that in seven out of 10 samples the organic source contained significantly more vitamin E - alpha-tocopherol - than conventional milk.

"The results indicate that less synthetic vitamin E is added in the organic milk production, and in spite of this, the content of vitamin E is higher in organic milk than in conventional milk," say the researchers.

"The most important reason for the observed differences is presumably the large amounts of maize silage used in the conventional production, whereas a considerable amount of grass and leguminous plants are used in the organic production," they add.

Vitamin E, that acts as an antioxidant in prolonging the shelf-life of the milk, is available partly in the plants and the plant-based feed products eaten by the cow, but a synthetic product is also available. In the synthetic production process, eight different stereo-isomers (varieties) of alpha-tocopherol are formed of which only one is nature-identical.

"These stereo-isomers of a-tocopherol constitute 15.8-24.7 per cent in the conventional milk, but only 6.2-13.5 per cent in the organic milk," report the scientists.

In addition to vitamin E, the researchers investigated the level of carotenoids found in the two milks, finding that the content was higher in organic milk, and that levels of the powerful antioxidant beta-carotene were two to three times higher in organic milk than in conventional milk.

While these compounds act as health-promoting antioxidants, a number of significant flavour components in the milk are formed on the basis of the carotenoids, affecting the taste because the substance contributes to the formation of these aromatic components.

"If the organic farmers wish to produce milk with a high level of vitamin E and carotenoids in the future, the share of maize in the feed rations should not be increased," summarise the Danish food scientists Jacob H. Nielsen, Tina Lund-Nielsen and Leif Skibsted.

The EU organic market reached around €10 billion in 2002, according to data from UK market analysts Organic Monitor, but growth has slowed in recent years: an increase of 8 per cent between 2001 and 2002 shrunk to an estimated 5 per cent between 2002 and 2003.

Source:

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