

## Seasonal variation in the Dutch bovine raw milk composition.

Heck JM, van Valenberg HJ, Dijkstra J, van Hooijdonk AC.

### Abstract

In this study, we determined the detailed composition of and seasonal variation in Dutch dairy milk. Raw milk samples representative of the complete Dutch milk supply were collected weekly from February 2005 until February 2006. Large seasonal variation exists in the concentrations of the main components and milk fatty acid composition. Milk lactose concentration was rather constant throughout the season. Milk true protein content was somewhat more responsive to season, with the lowest content in June (3.21 g/100 g) and the highest content in December (3.38 g/100 g). Milk fat concentration increased from a minimum of 4.10 g/100 g in June to a maximum of 4.57 g/100 g in January. The largest (up to 2-fold) seasonal changes in the fatty acid composition were found for *trans* fatty acids, including conjugated linoleic acid. Milk protein composition was rather constant throughout the season. Milk unsaturation indices, which were used as an indication of desaturase activity, were lowest in spring and highest in autumn. Compared with a previous investigation of Dutch dairy milk in 1992, the fatty acid composition of Dutch raw milk has changed considerably, in particular with a higher content of saturated fatty acids in 2005 milk.

Link: <https://www.ncbi.nlm.nih.gov/pubmed/19762790>