

TRANS FATTY ACIDS HISTORY OF TURKEY

K. Sahin Ozkan^{*}, O. Ketenoglu, A. Tekin

Ankara University, Dept of Food Engineering, Ankara, Turkey

Trans fatty acids (TFAs) are geometric isomers of cis double bonds in unsaturated fatty acids, which are generally formed in partial hydrogenation. Some desirable physical properties and oxidative stability of TFAs result in positive effects on physical and chemical properties of final products. However, in the beginning of 1990's, it was explained that TFA intake increases the risk of coronary heart diseases by lowering HDL cholesterol, while increasing LDL cholesterol, which stimulated margarine industry to produce the products having less TFA content. In that time, there was only one tub margarine in Turkey with zero-trans isomers. The number of them had been increased to four (three stick and one tub) in 2002. After adoption of TFA regulation as 1.0% on fat bases in 2007, TFA reduction in the margarines marketed in Turkey was achieved using alternative hardening techniques such as interesterification and fractionation. In 2014, 15 different types of margarines - 7 tub and 8 stick – sold in Turkish markets were analyzed for their TFA contents by using gas chromatography. The results revealed that TFA contents of tub margarines ranged from 0.41-0.82%, while this range was found 0.18-0.81% in stick margarines. It can be stated that TFA contents of all margarines were less than legal limits of 1.0%.

Keywords: Trans fatty acids, margarine, gas chromatography

* Corresponding author: sahin@eng.ankara.edu.tr