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Determination of Fatty Acid Composition and Total Trans Fatty Acids in Cereal-Based Turkish Foods

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Abstract: The fatty acid composition and trans fatty acids of 13 cereal-based foods produced by Turkish companies were analysed by capillary gas-liquid chromatography. The total fat contents of the samples ranged from 1.8 to 37.9%. Traditional Turkish white bread and bulgur had the lowest fat content (1.8% and 2.3% respectively) and wafer the highest (37.9%). The major fatty acids in the samples were C_{16:0}, C_{18:0}, trans C_{18:1}, C_{18:1} and C_{18:2}. Total unsaturated fatty acid contents varied between 49.0 and 80.3% of total fatty acids, and bulgur had the highest percentage among the samples. Except for bulgur, all the samples contained trans fatty acids (weight percentage of methyl esters) ranging from 0.1 to 31.0% of the total. Bulgur did not contain detectable levels of trans fatty acids while white bread and corn chips contained trace amounts: 0.1% and 0.7% respectively.

Key Words: Capillary gas-liquid chromatography, cereal foods, fatty acid composition, trans fatty acids

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