

## QUANTIFICATION OF *TRANS* FATS IN SELECTED BAKERY PRODUCTS AVAILABLE IN THE CENTRAL PROVINCE

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Excessive intake of *trans* fatty acids increases the risk of several non-communicable diseases especially, cardiovascular diseases and cancer, which are the major causes of death, worldwide. *Trans* fatty acids are mainly generated during partial hydrogenation of oils and fats. One of the major dietary sources of industrial *trans* fatty acids includes bakery products. This study was conducted to investigate the *trans* fat contents of five bakery products: cakes, muffins, doughnuts, cookies and *Gnanakatha* available in the eateries and pastry shops in the Central Province, Sri Lanka. A market survey was carried out among fifty bakeries, using a structured pre-tested questionnaire. Samples of bakery products were collected from ten representative bakeries and oven dried at 70 °C for 2 h. Subsequently, fat was extracted into hexane and analyzed for all major fatty acids and *trans* fatty acids using Gas Liquid Chromatography. The survey revealed that more than 50% of the bakers use Hyco™ as the shortening for bread and B high™ margarine for other products. More than 50% of bakers used palm oil, because coconut oil quickly oxidizes than palm oil. The major fatty acids identified in bakery products included butyric, myristoleic, lauric, caprylic, capric and Cis-10-Heptadecenoic acids. *Trans* fatty acids present in the bakery items included C18:1n9t and C18:2n6t. The highest total *trans* fatty acid content was observed in chocolate cake sample (5.77%), while the lowest *trans* fatty acid content was observed in doughnut sample (0.16%). The *trans* fatty acid content of five bakery items tested ranged from 0.16% to 5.77%. This study shows that there is a huge variation of *trans* fatty acid in bakery products found in the Central Province of Sri Lanka.

**Keywords:** Bakery products, Fatty acids, Shortening, *Trans* fat