Detection of Cholesterol Oxidation Products (COPs) in raw and chilled storage of chicken sausages formulated with chicken fat and red palm mid fraction

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The purpose of this paper is to determine the effect of different lipid sources (animal and plant) during chilled storage on the formation of cholesterol and cholesterol oxidation products in sausages formulated with chicken fat and red palm mid fraction. The commercial sample, as represented by the chicken sausage and the mechanical deboned meat sausage was analyzed as a comparison. The sausages were produced in a plant scale for two batches, vacuum packed and stored at -4°C or chilled condition. At time intervals of week 0, 1, 2 and 3, the sausages were analyzed using gas chromatography with flame ionization detector for determining cholesterol and cholesterol oxidations products, which were 25-hydroxycholesterol, 5-epoxycholesterol, 5-epoxycholesterol and 7-ketocholesterol. This study showed the variable amount of compounds analyzed throughout the period of analysis, 25-hydroxycholesterol detected in PMF at week 3 (0.77 ppm). The significantly high amount of cholesterol was detected in MDM (239.99 ppm) at week 3. The different type of sausages formulated with chicken fat and palm mid fraction which were animal and plant fats, respectively did not show any significant changes towards the formation of cholesterol and COPs throughout the storage period in chilled condition. It is recommended for future works to prolong the period of storage to obtain concrete result at the end of analysis, analyze the compounds using gas chromatography with mass spectrometry to improve the detection limit and to expand the reference standard of cholesterol oxidation products to be used as the compounds may varies. © IDOSI Publications, 2012.