

SPECTROPHOTOMETRIC DETERMINATION OF NITRITE CONTENT IN FOUR BRANDS OF CHICKEN SAUSAGES

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Nitrites are used as preservatives in processed meat. Although they are beneficial and safe at permitted levels, they can be carcinogenic when used in excess. Large doses of nitrites can also lead to a condition known as methemoglobinemia. The aim of this study is to determine whether the nitrite content in four locally available brands of chicken sausages are within the permitted levels. The Griess assay was used to determine the nitrite content in four brands of chicken sausages available in the local market. In the Griess assay, nitrites yield a characteristic dark pink colored complex when reacted with N-1-naphthylethylenediamine dihydrochloride (NED) under acidic conditions. The optical density

was measured at 540 nm using a UV-Visible spectrophotometer, and nitrite concentration was determined from a calibration curve. The obtained results show brands A, B, C, and D contained 31.1 mg/kg, 43.1 mg/kg, 96.1 mg/kg and 1.2 mg/kg of nitrite respectively. According to the Code of Federal Regulations Title 21 as of April 1 2017, the amount of sodium nitrite present should not exceed 200 mg/kg (ppm) in processed meat. According to our results, the nitrite content of all brands of sausages used in this study were within the permitted levels.

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