

Determination of Nitrite, Nitrate, Total Fat and Heme Iron Contents in Selected Ready to Eat (RTE) Processed Meat Products Available in Sri Lanka

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Sri Lankan processed meat industry produces a variety of meat products. Global meat production and consumption have increased rapidly in recent decades, with harmful effects on the environment and public health. Nitrite, nitrate, heme iron, and certain types of fats such as trans-fats are potentially harmful compounds. The nitrite, nitrate, total fat, and heme iron that exist in 12 processed meat products commonly available in the Sri Lankan market were examined to get an idea about their availability in local products. The FAO classification for semi-processed and processed meat products was followed in the study, and ten replicates were included in the analysis. The Ready to Cook (RTC) processed meat samples were procured and then cooked according to the standard procedures. The nitrite and nitrate content were determined by AOAC 973.31 method, while total fat content was determined using AOAC 963.15 method on fresh weight basis. The heme iron content was analyzed using acidified acetone extraction method. The results were statistically interpreted using analysis of variance and Duncan's multiple range test at 0.05 significant level. The Ready to Eat (RTE) bacon and RTE salami had the highest nitrite (7.25 mg/kg) and nitrate content (89.66 mg/kg), respectively. The RTE burger and RTE jerky had the lowest content of nitrite (0.99 mg/kg) and nitrate content (1.85 mg/kg), respectively. The raw-cooked beef products (15.80%) and dried chicken products had the lowest percentage (3.49%), and fermented beef sausages had the highest percentage (26.41%) of total fat compared to the other types of processed meat products used in this study. The raw-cooked chicken products had the lowest content (0.33 mg/100 g), and the dried beef products had the highest content (5.40 mg/100 g) of heme iron compared to the other selected processed meat products. In conclusion, the cured and fermented meat products commonly available in the Sri Lankan market consist of comparatively higher amounts of nitrite, nitrate, fat, and heme iron than the freshly processed and dried meat products.

Keywords: Meat processing, Public health, Ready to Eat (RTE), Processed meat products, Sri Lanka

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