

MONITORING OF NITRITE LEVELS IN EMULSION TYPE - COOKED SAUSAGES - CASE OF SERBIAN MANUFACTURERS ON REGULATORY AND SAFETY ISSUES

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Abstract: Rising processed meat consumption globally increases health concerns due to potential adverse effects from nitrite metabolites like nitric-oxide and N-nitroso compounds. This study assessed the food safety of processed meat products in the Serbian market, focusing on domestic manufacturers. Nitrite levels (expressed as NaNO₂) were assessed in emulsion-type cooked sausages on the last day of storage - as labeled by product manufacturers. The contribution to acceptable dietary intake (ADI) of nitrites was also evaluated. During a one-year period (2022-2023), the study analyzed a total of 59 meat products: 35 finely grounded cooked sausages (29 small diameter, and 6 large diameter sausages) and 24 coarsely grounded cooked sausages. Each product was evaluated based on three different lot numbers, following the standard ISO procedure. The nitrite levels in coarsely grounded cooked sausages ranged from 17.82 to 69.99 mg/kg, while finely grounded cooked sausages had nitrite content ranging from 3.72 to 68.22 mg/kg for small diameter sausages and 28.85 to 62.87 mg/kg for large diameter sausages, which was well below maximum allowable concentrations determined by national legislation (150 mg/kg). The Serbian population's estimated dietary intake (EDI) of nitrites (as NaNO₂) from consuming cooked sausages was 0.021 mg/kg BW/day, significantly below the EFSA-recommended ADI of 0.1 mg/kg BW/day - it accounted for 20.57% of the ADI.

Key words: processed meat, nitrite levels, food safety, Serbian market, dietary intake

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