ANALYSIS OF Salmonella sp. CONTAMINATION IN FROZEN TUNA (Thunnus sp.) USING REAL-TIME PCR (POLYMERASE CHAIN REACTION) METHOD AT LABORATORY X

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ABSTRACT

***Background**: Tuna (Thunnus sp.) is one of Indonesia's leading fishery export commodities with great potential as a source of animal protein. However, fishery products such as frozen tuna are susceptible to contamination by pathogenic microbes, one of which is Salmonella sp., which can pose a risk to consumer health.* ***Objective**: This study aimed to detect the presence of Salmonella sp. bacteria in frozen tuna samples sent by producers to Laboratory X, based on the Indonesian National Standard (SNI).* ***Methods**: This study used the Real-Time PCR (Polymerase Chain Reaction) method, with a total of four tuna samples. Tuna samples weighing 25 grams were prepared aseptically, enriched in Buffered Peptone Water (BPW) medium, followed by DNA (Deoxyribonucleic Acid) extraction and amplification using Real-Time PCR with a Bio Premier kit. The interpretation of results was as follows: a sample was considered positive if the Cq value for FAM (6-Carboxyfluorescein) was within the range of 15–30, accompanied by an amplification curve with a sigmoid (S-shaped) pattern and the appearance of a ROX (6-Carboxy-X-Rhodamine) signal as an internal control (IC).* ***Results**: Of the four samples tested, the Cq FAM values obtained were 0; 0; 0; and 17.56, respectively. One sample was declared positive because the Cq value in the FAM channel was positive at 17.56, indicating a rise in the curve at the 17th cycle, with the amplification curve showing a sigmoid shape. Therefore, this sample did not meet the microbiological quality requirements for Salmonella sp. contamination parameters according to SNI 8919:2020 on Frozen Tuna Meat Trimmings, which requires negative results per 25 grams.* ***Conclusion**: Of the four samples tested, one sample was positive for Salmonella sp. contamination, and three samples were negative for Salmonella sp.*

***Keywords**: Salmonella sp., frozen tuna, Real-Time PCR (Polymerase Chain Reaction).*