INFLUENCE OF LOW TEMPERATURE STORAGE ON THE DEVELOPMENT OF *COLIFORM* AND *Escherichia coli* IN NILE TILAPIA FILLETS

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Summary

This study monitored the counts of *Coliforms* and *E. coli* in tilapia fillets during low temperature storage at 5 stable temperature regimes (1, 4, 9, 15, and 19 ± 1°C) and 2 dynamic ones stimulating the storage condition of supply chain downstream. The results showed that the initial counts of *Coliforms* in all samples varied in a large range from < 476.6 to > 1100 MPN/g, while those of *E. coli* were as low as 3.7 MPN/g. At storage temperatures of 1 ± 1°C and 4 ± 1°C, the counts of *E. coli* in all samples remained at low levels during the first 240 hours and 168 hours of storage, respectively. After these periods, there was an increase in *E. coli* in some samples. At the end of the fish shelf-life, which was determined based on the total viable counts (TVC), *Coliforms* in tilapia fish fillets were 783 MPN/g, > 1100 MPN/g, 816.6 MPN/g after 312 hours at 1 ± 1°C, 240 hours at 4 ± 1°C, and 24 hours at 9 ± 1°C, respectively, and these counts stabled at > 1100 MPN/g after 24 hours at 15 ± 1°C, and 32 hours at 19 ± 1°C; whereas, the counts of *E. coli* at corresponding times and temperatures were well below the acceptable limit.

Keywords: *Coliform, E. coli, fillets, low temperature storage, Nile tilapia.*