

## PP-19

**Effect of Frozen Storage on The Quality Changes of *Pangasius Pangasianodon hypophthalmus* Fillet: A Study on Texture, Nutritional Content, and Microbial Load**

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This study investigated the microbial, textural, and sensory quality changes in *Pangasius (Pangasianodon hypophthalmus)* fish fillets during 90 days of frozen storage at  $-20^{\circ}\text{C}$ . Both whole fish and skinned fillets were vacuum packaged individually in high Density Poly-ethylene plastic (HDPE), frozen stored, and analyzed for proximate composition, microbial load, texture, and sensory attributes. Initial preparation of fillets saw a rise in bacterial counts from  $64 \times 10^3$  to  $98.5 \times 10^3$  CFU/g, indicating possible contamination during handling. Microbial load remained within safe limits for 60 days but exceeded the acceptable range after 90 days.

Textural analysis revealed an increase in hardness across fillet parts during storage, particularly in the tail, where hardness rose from 182.36 N (fresh) to 367.16 N after two months. Springiness showed a peak in the first month, reaching 3.08 in the head and 2.35 in the body, before decreasing significantly in the second month. Chewiness followed a similar trend, with an initial increase followed by a decrease in most parts except the tail, which remained elevated until the end of the storage period. Total Volatile Base Nitrogen shows significant rise after 90 days but remains under European standard 91/493/EEC. Nutritional status of both type of fillet was decreasing with in time span but ash concentration was increasing trend.

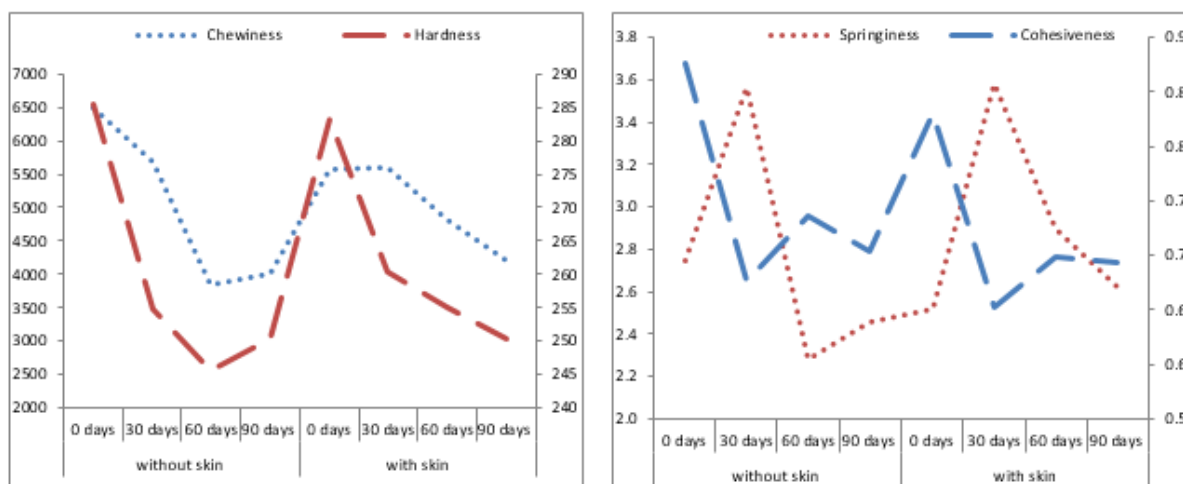


Figure: Fillet quality texture trends during storage of 90 days

Overall, the study demonstrated that while microbial loads reduced over time in frozen storage, the textural quality of fillets varied, with hardness increasing and chewiness and springiness peaking before declining. *Pangasius* fillet without skin of 60 day storage and fillet with skin for 30 day storage for their optimal texture and taste, suggests that this period offers the best balance between safety and quality for frozen *Pangasius* fillets.