

CHANGES OF MYOFIBRILLAR PROTEIN AND TEXTURE IN
BLACK TIGER SHRIMP (*Penaeus monodon*)
DURING ICE STORAGE

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Research to address the concern for post-harvest quality losses in fisheries have not been done in-depth especially for our local seafood products. These losses will occur due to increasing ambient temperature and stagnation of transfer after being harvest. Quality deterioration will affect the consumer or market acceptances thus decrease the demand on the product. In this study, black tiger shrimp (*Penaeus monodon*) was obtained from a local supplier in Marang, Terengganu, killed and stored in an insulated box at 0°C for 9 days. For every storage period, the shrimp was processed prior to SDS-PAGE analysis and texture analysis. In SDS-PAGE analysis, myofibrillar protein was extracted from the shrimp sample and run in the gel before being visualized. In texture analysis, shrimp muscle was placed on TA-XT Texture Analyser and the total force to shear the muscle cell was recorded. From the SDS-PAGE analysis, slight decrease in band intensity at 200 kDa indicates degradation of myofibrillar protein. From the texture analysis, total force to shear muscle cell decrease as storing period increase. This indicates texture softening parallel with increasing storage time. Both analysis results coincide with each other which indicate that the degradation of myofibrillar protein corresponds to texture softening.

Keywords: *Penaeus monodon*, SDS-PAGE analysis, myofibrillar protein, texture analysis

**PERUBAHAN PROTEIN MIOFIBRIL DAN TEKSTUR DALAM UDANG
HARIMAU (*Penaeus monodon*) SEMASA SIMPANAN AIS**

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Kajian untuk merujuk tentang penyusutan kualiti lepas-tuai dalam perikanan belum lagi dikaji secara mendalam terutamanya produk makanan laut tempatan. Penyusutan ini akan berlaku kerana peningkatan suhu sekeliling dan penangguhan dalam pemindahan selepas dituai. Penyusutan kualiti produk akan mempengaruhi penerimaan konsumer dan pasaran mengakibatkan penurunan permintaan produk. Dalam kajian ini, udang harimau (*Penaeus monodon*) telah diperolehi daripada pembekal dari Marang, Terengganu, telah dibunuh dan disimpan dalam bekas bertebat pada 0°C selama 9 hari. Sample udang telah diproses sebelum analisa SDS-PAGE dan analisa tekstur. Dalam analisa SDS-PAGE, protein miofibril telah diekstrak dari sampel udang and dijalankan ke atas gel sebelum divisualkan. Dalam analisa tekstur, sampel udang telah diletakkan di atas TA-XT Texture Analyser dan jumlah daya untuk mengoyakkan sel otot telah direkodkan. Dari analisa SDS-PAGE, sedikit pengurangan kecerahan jalur pada 200 kDa menunjukkan degradasi protein miofibril. Dari analisa tekstur, jumlah daya berkurangan selepas tempoh penyimpanan meningkat. Ini menunjukkan pelembutan tekstur selari dengan peningkatan tempoh simpanan. Kedua-dua analisa bersesuaian bersama, menunjukkan degradasi protein mio fibrilar meyebabkan pelembutan tekstur.

Kata kunci: *Penaeus monodon*, analisa SDS-PAGE, protein miofibril, analisa tekstur