PROTEIN LEVEL IN VARICUS TISSUES OF THE PRAWN, *Penaeus merguiensis* De Man (CRUSTACEA DECAPODA, PENAEIDAE) AT DIFFERENT STAGES OF OVARIAN MATURATION

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BY

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To my mother and father

...brothers and sisters

and fellow fishermen...

.....with love.

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ABSTRACT

The gonadosomatic indices (GSI) of forty penaeid prawns, *Penaeus merguiensis* at different stages of ovarian maturation were determined and found to be significantly different ($P < 0.05$). Analyses of protein levels in their ovaries and midgut glands showed an increase in the ovary (10 -85 mg/g tissue) and a decrease in the midgnt gland (353 - 195 mg/g tissue), with ovarian maturation. There was a positive correlation ($r = 0.67$) between the ovary and GSI and a negative correlation ($r = -0.42$) between the midgut gland and GSI. Protein levels in the haemolymph (0.77 - 3.43 mg/g haemolymph) also showed a positive correlation ($r = 0.45$); however there was no correlation for the protein levels in the muscles ($r = -0.29$). The physiological significance of the results was discussed.

ABSTRAK

Indeks-indeks gonadosomatik (IGS) bagi empat puluh ekor udang penaied, *Penaeus merguiensis* pada beberapa peringkat kematangan ovari telah ditentukan dan didapati mempunyai perbezaan yang bererti ($P < 0.05$). Analisis kandungan protein di dalam ovari dan kelenjar usus tengah menunjukkan bahawa terdapat peningkatan kandungan protein di dalam ovari (10 - 85 mg/g tisu) dan penurunannya di dalam kelenjar usus tengah (353 - 195 mg/g tisu), ini selaras dengan kematangan ovari. Korelasi yang positif ($r = 0.67$) didapati di antara ovari dan IGS. Untuk kelenjar usus tengah dan IGS pula, korelasinya adalah negatif ($r = -0.42$). Kandungan protein di dalam hemolimfa (0.77 - 3.43 mg/g hemolimfa) juga menunjukkan korelasi yang positif ($r = 0.45$). Walaubagaimanapun tiada korelasi didapati bagi peringkat-peringkat kandungan protein untuk otot ($r = -0.29$). Pengertian-pengertian fisiologikal untuk keputusan yang didapati dibincangkan.