

EFFECTS OF PROGESTERONE ON OVARIAN MATURATION  
IN THE PENAEID PRAWN, *Penaeus merguensis* DE MAN


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EFFECTS OF PROGESTERONE ON OVARIAN MATURATION  
IN THE PENAEID PRAWN, Penaeus merquiensis (DE MAN)

by

Lim Song Hok

A Project Report submitted in partial fulfilment of the  
requirement for the Bachelor of Science (Fisheries)

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Pengerusi,  
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#### ABSTRACT

Effects of progesterone on ovarian maturation in Penaeus merquiensis were studied. Individual prawns were injected with 0 ug, 100 ug and 200 ug of progesterone. External viewing and gonadosomatic indices revealed no signs of ovarian maturation except for three individual prawns which showed morphological changes in their ovaries and one which showed a gonadosomatic index corresponding to stage 2 (early maturing) in the 200 ug progesterone treated group. However, histological studies showed that there were distinct changes in the type and size of oocytes upon progesterone treatment. Stage 3 (follicle stage) and stage 4 (primary yolk stage) oocytes in addition to stage 1 (nucleolus stage) and stage 2 (perinucleolus stage) were found in the 100 ug and 200 ug progesterone-treated prawns whereas only oogonia, stage 1 and stage 2 oocytes were found in the control. There was also an increase in the number of stage 4 oocytes at the peripheral region of the ovary of prawns in the 200 ug progesterone-treated group. The results indicate that progesterone stimulates oocytes maturation in P. merquiensis.

#### ABSTRAK

Kesan hormon progesteron keatas kematangan ovari Penaeus merquiensis telah dikaji. Udang-udang telah disuntik dengan 0 ug, 100 ug dan 200 ug hormon progesteron. Pandangan morfologi dan indeks gonadosomatik menunjukkan tiada kesan pada kematangan ovari kecuali di kumpulan 200 ug hormon progesteron dimana tiga udang menunjukkan perubahan morfologi pada ovarinya dan seekor pada gonadosomatik indeksnya. Kajian histologi menunjukkan perubahan nyata pada jenis dan saiz oosit yang dirawat dengan hormon progesteron. Pada kumpulan 100 ug dan 200 ug rawatan hormon progesteron, kedapatan oosit peringkat 3 dan 4 sabagai tambahan pada peringkat 1 dan 2. Pada percubaan kawalan (0 ug progesteron) terdapat oogonia dan oosit peringkat 1 dan 2. Terdapat pertambahan oosit peringkat 4 di bahagian tepi ovari pada kumpulan 200 ug progesteron. Keputusan menunjukkan hormon progesteron merangsang kematangan oosit pada P. merquiensis.