Effect of salinity on the embryonic development of *Portunus pelagicus* and *Charybdis feriatus* eggs

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EFFECT OF SALINITY ON THE EMBRYONIC DEVELOPMENT OF *Portunus pelagicus* AND *Charybdis feriatus* EGGS

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The effect of salinity on the embryonic development of *Portunus pelagicus* and *Charybdis feriatus* was studied. The five different salinity levels used were 15 ppt, 25 ppt, 35 ppt, 45 ppt, and control (33-35 ppt) to compare their effect on the embryonic development of both species.

One thousand newly spawned crab eggs were incubated in vitro in 4-L Nalgene fiberglass containers with 3-L of water at different salinity levels. Mild aeration that allows movement of eggs within the water column was provided. There were three replicates per treatment. Embryonic development of eggs (30 eggs were taken in every salinity level) was monitored daily up to hatching. The newly hatched larvae were then collected and counted.

Results showed that during the incubation period, the most advanced stage of embryonic development for *Portunus pelagicus* was at 33-35 ppt and for *Charybdis feriatus* was at 35 ppt. There was normal embryonic development and hatching at 35 ppt, 45 ppt, and control (33-35 ppt) for *Portunus pelagicus* and at 15 ppt, 25 ppt, 35 ppt, 45 ppt, and control (33-35 ppt) for *Charybdis feriatus*. Eggs that were incubated at 15 ppt and 25 ppt for *Portunus pelagicus* died. There was normal embryonic development in both species when incubated at 45 ppt. Hatching rate for *Portunus pelagicus* at control (33-35 ppt) was 34.1 %, at 35 ppt was 16.1 %, and at 45 ppt was 5.8 %. Hatching rate for *Charybdis feriatus* at 35 ppt was 52.5 %, at control (33-35 ppt) was 21.2 %, at 45 ppt was 12.8 %, at 25 ppt was 6.7 %, and at 15 ppt was 0.3 %.

To summarize, embryo of *Charybdis feriatus* eggs can withstand a wider range of salinity: from a low salinity of 15 ppt to a high salinity of 45 ppt, that makes them a euryhaline species. On the other hand, *Portunus pelagicus* cannot support embryonic development at lower salinities of 15 and 25 ppt that makes them a stenohaline species.