

EFFECTS OF TEMPERATURE ON EMBRYONIC DEVELOPMENT AND
HATCHING RATES OF GIANT FRESHWATER PRAWN EGGS
(*Macrobrachium rosenbergii*)

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FAKULTI AGROTEKNOLOGI DAN SAINS MAKANAN
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BORANG PENGESAHAN DAN KELULUSAN LAPORAN AKHIR
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Effects of Temperature on Embryonic Development and Hatching Rates of Giant Freshwater Prawn Eggs (*Macrobrachium rosenbergii*)

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ABSTRACT

Two experiments on the effects of three different temperatures on hatching rate and embryonic development of freshwater prawn *Macrobrachium rosenbergii*, were carried out. In the first experiment, eggs were incubated from fertilization to hatching at different experimental temperatures (ambient, 29°C and 33°C) to determine the effects of temperature on the hatching rate of bright brown eggs. Each treatment has triplicates which consist of incubation tanks with 100 pieces eggs in it. The study was carried out as soon as the eggs had changed from yellow to brown in colour prior to eggs hatching. The second experiment was a study on the embryonic development. The time from fertilization to hatching decreased with increasing temperature. Days of hatching were decreased in treatment 33°C. The optimum temperature for hatching rate is 29°C. From the study, it is found that the hatching rate at ambient temperature, 29°C and 33°C were 77%, 83% and 64% respectively. The number of spoiled eggs at ambient temperature, 29°C and 33°C were 23%, 17% and 36% respectively. While the mortality rate of larvae after 24 hours of hatching at ambient temperature, 29°C and 33°C were 34%, 3% and 19% respectively. The effect of three different temperatures in this experiment on hatching rate and number of spoiled eggs was not significantly different in contrast to the mortality rate of larvae which is significantly different ($p < 0.05$). Thus, in order to increase the hatching rate of *Macrobrachium rosenbergii* eggs and minimizing the mortality rate of larvae, incubation temperature should be retained in a controlled condition without occurrence of fluctuations by using heater or any relevant apparatus.