

UNIVERSITI TEKNOLOGI MARA

**THE EFFECT OF SALINITY AND TEMPERATURE
ON GROWTH RATE OF *Brachionus plicatilis***

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Thesis submitted in partial fulfilment
of the requirements for the degree of
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AUTHOR'S DECLARATION

I declare that the work in this proposal was carried out in accordance with the regulations of Universiti Teknologi MARA. It is original and is the results of my own work, unless otherwise indicated or acknowledge as referenced work. This proposal has not been submitted to any other academic institution or non-academic institution for any degree or qualification.

I, hereby, acknowledge that I have been supplied with the Academic Rules and Regulations for Post Graduate, Universiti Teknologi MARA, regulating the conduct of my study and research.

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ABSTRACT

Brachionus plicatilis is marine zooplankton that can withstand a wide range of salinity ranging from 1 to 99 ppt. This zooplankton is very important in aquaculture as part of important diet to the marine lives. Optimal reproduction can take place at the right salinity and temperature. Rearing rotifers below their optimal temperature or higher temperature may slows down the population growth considerably. The objectives of the experiment were to observe the growth rate of *B. plicatilis* and survivality based on different temperature and salinity. The rotifer was obtained and culture by batch method starting at 25 ppt and introduce at different temperature at 25°C then 30°C and 35°C. The culture was introduced to different salinity and temperature by acclimatization. The rotifer was fed with *Nannochloropsis* sp. Result showed that optimal rate of growth and reproduction were at salinity 25 to 30 ppt for temperature at 25°C and 35°C. The mean and standard error for treatment of 25°C at 20 ppt was 0.007 ±0.004, 25ppt 0.006 ±0.004 30ppt, 0.054 ±0.0001, 35 ppt 0.013 ±0.007. The mean and standard error for treatment of 30°C C at 20 ppt 0.252 ±0.145, 25 ppt 0.141 ±0.081, 30 ppt 0.081±0.046, 35 ppt 0.027±0.016. Meanwhile, at temperature 35°C at 20 ppt 0.147 ±0.012, 25 ppt 0.005 ±0.004, 30ppt 0.009 ±0.007 and 35 ppt 0.021 ±0.001. The significance of the research was that the rearing of rotifer can be carried out under optimal salinity and temperature with less cost and energy which is beneficial to hatcheries and researchers.

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