

Chapter V

SUMMARY

1. The objective of this experiment is to determine the effect of the different levels of temperature on growth of mullet (Mugil dussumeiri Val.) seabass (Lates calcarifer [Bloch.]) and spinefoot (Siganus virgatus Cuv. & Val.) in a laboratory condition.
2. The test temperatures were 23.0°C, 28.0 ± 0.2°C and 33.0 ± 0.2°C.
3. The experimental unit was applied from the method of Ehrlick and Farris (1972).
4. The test fish were obtained from both the nature and artificial breeding. Mullet and spinefoot were obtained from nature source but seabass were obtained from artificial breeding.
5. All specimens had been acclimatized to the three different temperature levels 23.0°C, 28.0 ± 0.2°C and 33.0 ± 0.2°C in the experimental units in laboratory condition for 14 days before the beginning of the experiment.
6. The length and weight (growth indicators) of mullet and spinefoot were measured every week but for seabass it was measured every two weeks.
7. Only the length of test fish were used for the statistical analysis on growth. This is due to the fact that the



length of the test fishes was highly correlated with the weight (Figure 6, 9 and 12).

8. All these three temperatures, the highest growth rate of seabass and spinefoot were at $33.0 \pm 0.2^{\circ}\text{C}$. For mullet, the growth rates were comparable at the three temperatures.
9. Statistical analysis was used to infer the difference among the growth rate of the test fishes at the three temperature levels.
10. The growth rate of mullet at 23.0°C , $28.0 \pm 0.2^{\circ}\text{C}$ and $33.0 \pm 0.2^{\circ}\text{C}$ were 0.02 cm/week, 0.049 cm/week and 0.048 cm/week, respectively.
11. There was a significantly positive linear regression between length and time of mullet at $28.0 \pm 0.2^{\circ}\text{C}$ and $33.0 \pm 0.2^{\circ}\text{C}$ but not at 23.0°C . There were no statistically difference among the growth rate of mullet at all temperatures.
12. The growth rate of seabass at 23.0°C , $28.0 \pm 0.2^{\circ}\text{C}$ and $33.0 \pm 0.2^{\circ}\text{C}$ were 0.163 cm/week, 0.293 cm/week and 0.232 cm/week, respectively.
13. There was a significantly positive linear regression between length and time of seabass at all three temperatures. There was a statistically difference among the growth rate of seabass at the three temperatures.
14. The growth rate of spinefoot at 23.0°C , $28.0 \pm 0.2^{\circ}\text{C}$ and $33.0 \pm 0.2^{\circ}\text{C}$ were 0.258 cm/week, 0.248 cm/week and 0.473 cm/week, respectively.

15. There was a significantly positive linear regression between length and time of spinefoot at all three temperatures. There was a statistical difference among the growth rate of spinefoot at three temperatures.
16. The mortality rate of the test fishes increased correspondingly with the increasing temperature. The minimum mortality rate was at 23.0°C and the maximum mortality rate was at 33.0 ± 0.2°C.
17. The three levels of temperature were found to have a pronounced effect on growth of seabass and spinefoot but not for mullet.