

## RINGKASAN

PUTRI INSYIRAH TIANA. Variasi Salinitas Terhadap Pertumbuhan dan Kondisi Fisiologi Pada Ikan Kerapu Cantik *Epinephelus fuscoguttatus* >< *Epinephelus microdon*. Dibimbing oleh OKTO RIMANDI BAKKARA DAN RIKA WULANDARI

Kerapu cantik *Epinephelus fuscoguttatus* >< *Epinephelus microdon* merupakan komoditas perikanan bernilai ekonomi tinggi yang banyak dibudidayakan di wilayah Asia Pasifik, termasuk Indonesia. Namun, keberhasilan budidaya sangat dipengaruhi oleh faktor lingkungan, salah satunya adalah salinitas. Salinitas yang tidak sesuai dapat menyebabkan gangguan osmoregulasi, stress fisiologis, penurunan pertumbuhan, dan kematian. Oleh karena itu, penelitian ini dilakukan untuk mengetahui pengaruh variasi salinitas terhadap pertumbuhan dan kondisi fisiologi ikan kerapu cantik. Penelitian ini dilaksanakan di Laboratorium Marine Aquaculture Universitas Maritim Raja Ali Haji, menggunakan Rancangan Acak Lengkap (RAL) dengan empat perlakuan salinitas: A (20 ppt), B (25 ppt), C (30 ppt), dan K (35 ppt), masing-masing tiga ulangan. Parameter yang diamati meliputi laju konsumsi oksigen, pertumbuhan, kelangsungan hidup, kondisi fisiologi dan kualitas air. Hasil penelitian menunjukkan bahwa salinitas 25-30 ppt memberikan hasil terbaik secara fisiologis. Laju konsumsi oksigen tertinggi tercatat pada salinitas 25 ppt (perlakuan B) ( $6,419 \pm 0,563 \text{ mgO}_2/\text{g/jam}$ ). Pertumbuhan bobot mutlak tertinggi diperoleh pada salinitas 30 ppt (perlakuan C) ( $15,80 \pm 0,054 \text{ g}$ ), sedangkan kelangsungan hidup tertinggi diperoleh pada salinitas 20 ppt (perlakuan A) ( $93,33 \pm 11,547\%$ ). Morfologi insang pada semua perlakuan berada dalam kondisi normal tanpa kerusakan jaringan, namun menunjukkan bentuk adaptasi sesuai tingkat salinitas. Tingkah laku terbaik diamati pada salinitas 30 ppt (perlakuan C). Kualitas air selama penelitian masih berada dalam kisaran optimal sesuai standart SNI (2014). Dapat disimpulkan bahwa salinitas 25-30 ppt merupakan kisaran optimal untuk mendukung pertumbuhan, fisiologi, dan kelangsungan hidup ikan kerapu cantik dalam sistem budidaya.

**Kata kunci:** Kelangsungan hidup, kerapu cantik, morfologi insang, oksigen terlarut, pertumbuhan, salinitas.

## SUMMARY

PUTRI INSYIRAH TIANA. Salinity Variations on Growth and Physiological Conditions in Cantik Grouper Fish *Epinephelus fuscoguttatus* >< *Epinephelus microdon*. Supervised by OKTO RIMANDI BAKKARA AND RIKA WULANDARI.

Cantik grouper *Epinephelus fuscoguttatus* >< *Epinephelus microdon* is a high-value fishery commodity that is widely cultivated in the Asia Pacific region, including Indonesia. However, the success of aquaculture is strongly influenced by environmental factors, one of which is salinity. Inappropriate salinity can cause osmoregulatory disorders, physiological stress, reduced growth, and death. Therefore, this study was conducted to determine the effect of salinity variations on the growth and physiological conditions of cantik grouper fish. This study was conducted for 69 days at the Marine Aquaculture Laboratory of Raja Ali Haji Maritime University, using a completely randomised design (CRD) with four salinity treatments: A (20 ppt), B (25 ppt), C (30 ppt), and K (35 ppt), each with three replicates. Parameters observed included oxygen consumption rate, growth, survival, physiological condition and water quality. The results showed that salinity of 25-30 ppt gave the best results physiologically. The highest oxygen consumption rate was recorded at 25 ppt salinity (treatment B) ( $6.419 \pm 0.563$  mgO<sub>2</sub>/g/hour). The highest absolute weight growth was obtained at 30 ppt salinity (treatment C) ( $15.80 \pm 0.054$  g), while the highest survival was obtained at 20 ppt salinity (treatment A) ( $93.33 \pm 11.547\%$ ). The gill morphology in all treatments was in normal condition without tissue damage, but showed a form of adaptation according to salinity levels. The best behaviour was observed at 30 ppt salinity (treatment C). Water quality during the study was still in the optimal range according to SNI standards (2014). It can be concluded that salinity of 25-30 ppt is the optimal range to support the growth, physiology, and survival of cantik grouper in aquaculture systems.

**Keywords:** Survival, cantik grouper, gill morphology, dissolved oxygen, growth, salinity.