

TOTAL ANTICIPA PRODUCTION IN CLOSED CYCLE REARING SYSTEM OF
CRESSIDROMIS JULIDROMIS JUVENILES

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**TOTAL AMMONIA PRODUCTION IN CLOSED CYCLE REARING
SYSTEM OF *Oreochromis niloticus* JUVENILES**

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**This project report is submitted in partial fulfillment of the requirement of the
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ABSTRACT

This study was conducted to determine the total ammonia production and nitrogen excretion rate of *Oreochromis niloticus* juveniles (sizes ranging from 4.8 to 6.6 gram with average body weight of 5.43 gram). Fish were fed at 10% of the average body weight. Ammonia excretion rate of fed fish is $0.022 \text{ mg NH}_3\text{-N g}^{-1} \text{ day}^{-1}$ and in starved fish, the rate is $0.011 \text{ mg NH}_3\text{-N g}^{-1} \text{ day}^{-1}$. The ammonia excretion rate of fed fish reached its peak during 0-4 hour after feeding with the value of $0.194 \text{ mgL}^{-1}\text{h}^{-1}$. The ammonia excretion rate of fed fish decreased with hours. In starved fish, the highest rate of ammonia production occurred at 8-12 hour ($0.099 \text{ mgL}^{-1}\text{h}^{-1}$) and then decreased. In fish feed, the rate of ammonia excretion reached a peak at 12 hours while in feces the greatest excretion occurred at 0-4 hour with the value of $0.034 \text{ mgL}^{-1}\text{h}^{-1}$. Ammonia production for fed fish declined after 34-hour period while in starved fish, the production showed constancy after 12-hour period.

ABSTRAK

Eksperimen ini dijalankan bertujuan untuk mengkaji jumlah dan kadar pengeluaran ammonia oleh juvenil *Oreochromis niloticus* yang bersaiz dari 4.8-6.6 gram (purata berat badan adalah 5.43 gram). Ikan diberi makan pada kadar 10% dari purata berat badan. Kadar pengeluaran harian ammonia bagi ikan yang diberi makan adalah 0.022 mg NH₃-N g⁻¹ hari⁻¹ manakala bagi ikan yang tidak diberi makan kadarnya adalah 0.011 mg NH₃-N g⁻¹ hari⁻¹. Kadar pengeluaran ammonia bagi ikan yang diberi makan mencapai tahap maksimum pada 0-4 jam selepas diberi makan (0.194 mgL⁻¹jam⁻¹). Kadar pengeluaran ammonia bagi ikan yang diberi makan adalah berkurangan dengan masa. Bagi ikan yang tidak diberi makan, kadar pengeluaran adalah maksimum pada 8-12 jam dengan nilai 0.099 mgL⁻¹jam⁻¹. Bagi penentuan pengeluaran ammonia dari makanan, kadar pengeluaran yang tertinggi adalah pada jam yang ke-12 dengan nilai 0.099 mgL⁻¹jam⁻¹ manakala bagi penentuan pengeluaran ammonia dari najis ikan, kadar yang tertinggi adalah 0.034 mgL⁻¹jam⁻¹. Pengeluaran ammonia bagi ikan yang diberi makan menurun selepas 34 jam manakala bagi ikan yang tidak diberi makan, kadar pengeluaran menunjukkan kestabilan setelah tempoh 12 jam.