EFFECT OF SALINITY DEPLETION ON GROWTH PERFORMANCE OF HYBRID RED TILAPIA

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EFFECT OF OXYGEN DEPLETION ON GROWTH PERFORMANCE OF HYBRID RED TILAPIA

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BORANG PITA 8

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PENGAKUAN DAN PENGESAHAN LAPORAN PROJEK ILMIAH I DAN II

Adalah ini diakui dan disahkan bahawa laporan ilmiah bertajuk:

EFFECT OF OXYGEN DEPLETION ON GROWTH PERFORMANCE OF RED HYBRID TILAPIA

oleh HAMIDAH BINTI ABDUL GHANI, No.Matrik UK14096 telah diperiksa dan semua pembetulan yang disarankan telah dilakukan. Laporan ini dikemukakan kepada Jabatan SAINS PERIKANAN DAN AKUAKULTUR sebagai memenuhi sebahagian daripada keperluan memperolehi Ijazah Sarjana Muda SAINS AGROTEKNOLOGI AKUAKULTUR, Fakulti Agroteknologi dan Sains Makanan, Universiti Malaysia Terengganu.

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DECLARATION

I hereby declare that the work in this thesis is my own except for quotations and summaries which have been duly acknowledged.

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ABSTRACT

The effect of water oxygen content on growth was evaluated for juveniles Red Hybrid Tilapia, mean ±SD initial weight 1.94 ± 0.27g, reared at oxygen levels of 1, 3 (hypoxia), 5 (normoxia), 7, 10 (hyperoxia) mg/L with 3 replicates. All 15 tanks were set up randomizely and 20 juveniles were introduced into each tank. Fish were fed to apparent satiation twice per day with a commercial pellet. Dissolved oxygen concentration was achieved by covering tanks with plastic sheets with different measurement depends on different dissolved oxygen concentration. Hypoxic condition (1 mg/L) was achieved by introduced nitrogen gases into completely covered tank, 3 mg/L was achieved by providing aeration with 2-3 bubbles into uncovered tank, 7 mg/L was achieved by providing 2 aerations and 10 mg/L was achieved by introducing saturated oxygen gas into completely covered tank. Feed intake and growth at high DO level were higher than at low DO level perhaps due to higher rate of metabolism. On the other aspect, survival of fish at high DO level was higher than at low DO level. This is due to fish decrease feed intake in order to conserve energy in low DO. In terms of distributions, fishes would station at bottom area in high DO level while distributed at upper area in low DO level.

ABSTRAK

Kajian terhadap kesan kekurangan oksigen pada tumbesaran juvenil Tilapia Merah, min ±SD berat awal 1.94 ±0.27g dijalankan dalam kandungan oksigen 1, 3 (hypoxia), 5 (normal), 7 dan 10 mg/L (hyperoxia) dengan 3 replikat. 15 akuarium disusun secara random dan sebanyak 20 ekor juvenil tilapia dimasukkan ke dalam setiap akuarium. Ikan diberi makan 2 kali sehari dengan makanan palet. Kepekatan oksigen dikawal melalui penutupan akuarium dengan plastik dengan ukuran berbeza bergantung kepada kepekatan oksigen yang ditetapkan. Keadaan hypoxia (1 mg/L) dicapai melalui kemasukan gas nitrogen ke dalam akuarium yang ditutup sepenuhnya, 3 mg/L dicapai dengan memasang satu tiub pengudaraan di dalam akuarium yang tidak ditutupi sepenuhnya, 7 mg/L dicapai dengan memasang 2 tiub pengudaraan dan 10 mg/L dicapai dengan memasukkan gas oksigen tepu ke dalam akuarium. Kadar pengambilan makanan dan tumbesaran ikan tinggi pada keadaan hyperoxia (7, 10 mg/L) berbanding hypoxia (1, 3 mg/L) kerana kadar metabolisma yang tinggi. Selain itu, kadar hidup ikan pada kandungan oksigen banyak lebih tinggi berbanding rendah kandungan oksigen. Ini kerana ikan mengurangkan kadar pengambilan makanan bagi menyimpan tenaga apabila kandungan oksigen rendah. Dari segi taburan, ikan berada di bahagian bawah akuarium dalam kandungan oksigen yang banyak dan bertaburan di permukaan air dalam kandungan oksigen rendah.