

THE STUDY ON WEANING TIME OF AFRICAN CATFISH
(*Clarius gariepinus*) LARVAE USING FISH MEAL
ADDED WITH SHRIMP HEAD MEAL

By
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**FAKULTI AGROTEKNOLOGI DAN SAINS MAKANAN
UNIVERSITI MALAYSIA TERENGGANU**

**PENGAKUAN DAN PENGESAHAN LAPORAN
PROJEK ILMIAH I DAN II**

Adalah ini diakui dan disahkan bahawa laporan ilmiah bertajuk:

The study on weaning time of African catfish (*Clarius gariepinus*) using fish meal added with shrimp head meal.

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telah diperiksa dan semua pembetulan yang disarankan telah dilakukan. Laporan ini dikemukakan kepada Jabatan Sains perikanan dan Akuakultur sebagai memenuhi sebahagian daripada keperluan memperoleh 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

This study was conducted to find the optimum weaning time of African catfish larvae, *Clarias gariepinus* (Burchell, 1822) on two different artificial diets. Two artificial diets were formulated for this study, which are based on fish meal and fish meal added with shrimp head meal diet, this two artificial diet was formulated to 40% protein. After hatching, 1170 larvae of African catfish were stocked into 39 1-litre aquarium. Depending the treatment group, the day of feeding *Artemia* were 0, 2, 3, 5, 7, 9 or 14 days. After this period, the treatment groups were gradually weaned to the artificial diet. The experiment was ended after 14 days and the treatment groups were compared on the specific growth rate and survival rate. Larvae that feed based on fish meal (0 day of *Artemia* feeding) have higher significant different ($P < 0.05$) in specific growth rate. While, larvae that feed with fish meal added with shrimp head meal (0 day of *Artemia* feeding) also have a high specific growth rate. However, larvae that feed based on fish meal and larvae that feed with fish meal added with shrimp head meal (0 day of *Artemia* feeding) have a lower significant different ($P < 0.05$) in survival rate. In conclusion, the optimum weaning time when using fish meal based-diet is 7 day of *Artemia* feeding. While, when using fish meal added with shrimp head meal diet the optimum weaning time is 5 day of *Artemia* feeding. So, for the culture of African catfish, the period of *Artemia* feeding can be reduced considerably without any loss in terms of growth and survival when shrimp head meal was added in African catfish larvae diet.

ABSTRAK

Kajian ini telah di jalankan untuk mengetahui masa pertukaran makanan (*Artemia* kepada makanan buatan) yang optimum pada larva ikan keli Afrika, *Clarias gariepinus* (Burchell, 1822) apabila menggunakan dua jenis makanan buatan yang berbeza. Dua jenis makanan buatan telah di formulasikan iaitu makanan berasaskan meal ikan dan makanan campuran di antara meal kepala udang dan meal ikan. Selepas sahaja larva ikan keli Afrika menetas, 1170 larvae ditempatkan di dalam 39 bekas plastik 1 liter. 30 ekor larvae ikan keli di masukan ke dalam setiap bekas plastik yang berisi air tawar. Mengikut rawatan, larvae diberi makan *Artemia* selama 0, 2, 3, 5, 7, 9 dan 14 hari. Selepas pemberian *Artemia* tamat, larvae beransur-ansur di berikan makanan buatan iaitu makanan berasaskan meal ikan dan makanan campuran diantara meal kepala udang dan meal ikan. Selepas 14 hari semua rawatan di bezakan berdasarkan SGR dan kadar kemandirian. Larvae yang diberi makan makanan berasaskan meal ikan sahaja (0 hari diberi makan *Artemia*) mempunyai SGR yang tinggi ($P < 0.05$). Manakala, larvae diberi makan makanan campuran di antara meal kepala udang dan meal ikan (0 hari diberi makan *Artemia*) juga mempunyai SGR yang tinggi. Walaubagaimanapun, larvae yang diberi makan makanan berasaskan meal ikan sahaja dan diberi makan makanan campuran di antara meal kepala udang dan meal ikan mempunyai peratus kemandirian yang sangat rendah ($P < 0.05$). Kesimpulan kajian ini, masa pertukaran makanan (*Artemia* kepada makanan buatan) yang optimum pada larvae diberi makanan berasaskan meal ikan ialah 7 hari diberi makan *Artemia*. Manakala, masa pertukaran makanan (*Artemia* kepada makanan buatan) yang optimum pada larvae diberi makanan campuran diantara meal kepala udang dan meal ikan ialah 5 hari diberi makan *Artemia*. Oleh itu, untuk mengurangkan masa pemberian *Artemia* kepada larvae ikan keli Afrika meal kepala udang boleh ditambah dalam makanannya.