STUDY ON THE EFFECTS OF FOOD TYPE ON
GROWTH AND COLORATION OF CLOWNFISH
Amphiprion ocellaris

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FACULTY OF AGROTECHNOLOGY AND FOOD SCIENCE
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**This project report is submitted in partial fulfillment of the requirement of the
Degree of Bachelor of Science in Agrotechnology
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ABSTRACT

A study on the effects of food type on grow out of clownfish (*Amphiprion ocellaris*) were done in two parts. The first part is to determine the best food among *Artemia*, shrimp, squid, and cockles given to juvenile clownfish in 8 weeks. Every 2 weeks of experiment, fishes from 8 tanks were sampled and the data were taken in form of wet weight (mg) and total length (cm). After 8 weeks, food that increases growth most was shrimp. Shrimp have the highest SGR value 0.85 %/day $\pm$ 0.07 compared to cockles with lowest SGR value, 0.34 %/day $\pm$ 0.07. Control food, *Artemia* gave best results at 1.75 %/day $\pm$ 0.17. Other treatment, squid gave moderate results at 0.65 %/day $\pm$ 0.49. In length aspect, *Artemia* gave the highest MGR value. In 56 days fishes that were fed with *Artemia* gave highest value at 1.75% cm/day. The best treatments for length were squid at 1.46% cm/day. Shrimp result was slightly lower compare to squid at 1.43% cm/day. Cockles still have the lowest growth rate in the aspect of length. MGR value for cockles was only 0.81% cm/day. Although there were differences in aspect of SGR, one way ANOVA illustrates they were no significant different in weight gain between treatment. For second part of research, 16 juvenile clownfish were fed with different spirulina percentage for 3 weeks. Fishes were compared with JOTUN paint standard color range at the end of color experiment. Color experiment proved 30% spirulina concentration is the best concentration that enhances fish coloration. Three from four juvenile clownfish that were fed with 30% spirulina concentration scale 4. Compared to control food (no spirulina added food), all fishes fed with control food scale 2.

ABSTRAK

Kajian tentang tumbesaran dan pewarnaan clownfish dijalankan dalam dua bahagian. Bahagian pertama adalah untuk menentukan makanan terbaik diantara *Artemia*, udang, sotong dan kerang yang dapat meningkatkan tumbesaran clownfish dalam masa 8 minggu. Setiap 2 minggu, sampel ikan dari 8 tangki diambil data dari segi panjang total (cm) dan berat basah (mg). Eksperimen tumbesaran menunjukkan udang memberikan nilai SGR yang paling tinggi pada 0.85 %/hari $\pm$ 0.07 dan nilai SGR yang paling rendah adalah kerang pada 0.34 %/hari $\pm$ 0.07. Makanan kawalan *Artemia* memberikan nilai yang paling baik pada 1.75 %/hari $\pm$ 0.17. Sotong pula memberikan keputusan sederhana pada 0.65 %/hari $\pm$ 0.49. Dari segi panjang total, *Artemia* memberikan kadar peningkatan (MGR) yang paling tinggi, 1.75% cm/hari. Nilai MGR sotong ialah 1.46% cm/hari diikuti dengan udang pada 1.43% cm/hari. Nilai paling rendah masih kerang dengan 0.81% cm/hari. Walaupun terdapat perbezaan dari segi nilai SGR bagi semua makanan yang diuji, ANOVA satu hala menyatakan tiada perbezaan yang nyata pada perubahan berat bagi pemberan makanan yang berbeza. Bagi bahagian kedua kajian, 16 ekor ikan juvenil clownfish diberikan makan peratus spirulina yang berbeza dalam masa 3 minggu untuk menentukan peratusan terbaik spirulina yang boleh meningkatkan pewarnaan ikan. Kesemua ikan dibandingkan dengan warna piawaian cat JOTUN pada akhir eksperimen. 30% spirulina dalam makanan memberikan pewarnaan terbaik dengan tiga dari empat ikan yang diuji berskala 4. Berbanding dengan ikan yang diberi makanan kawalan (tiada spirulina) kesemuanya berskala 2.