THE EFFECT OF ANTHOCYANIN FROM ROSELLE CALYCES (*Hibiscus sabdariffa*) TOWARDS THE PIGMENTATION OF JUVENILE TILAPIA (*Oreochromis* SP.) AT DIFFERENT SALINITY

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2013

The effect of anthocyanin from roselle calyces (Hibiscus sabdariffa) towards the pigmentation of juvenile tilapia (Oreochromis sp.) at different salinity / Mohd Farhan Mohd Tahir.

Lihat Sebelah

The effect of Anthocyanin from Roselle calyces (*Hibiscus sabdariffa*) towards the pigmentation of juvenile Tilapia (*Oreochromis* sp.) at different salinity

By

Mohd Farhan Bin Mohd Tahir

Research Report submitted in partial fulfillment of the requirement for the degree of Bachelor of Science (Marine Biology)

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DEPARTMENT OF MARINE SCIENCE
FACULTY OF MARITIME STUDIES AND MARINE SCIENCE UNIVERSITI MALAYSIA TERENGGANU

DECLARATION AND VERIFICATION REPORT FINAL YEAR RESEARCH PROJECT

It is hereby declared and verified that this research report entitled **the effect of anthocyanin from Roselle Calyces (*Hibiscus sabdariffa*) towards the pigmentation of juvenile Tilapia (*Oreochromis* sp.) at different salinity** by **Mohd Farhan Bin Mohd Tahir**, Matric No **Uk24139** have been examined and all errors identified have been corrected. This report is submitted to the Department of Marine Science as partial fulfilment toward obtaining the **Degree of Science of Marine Biology**, Faculty of Maritime Studies and Marine Science, Universiti Malaysia Terengganu.

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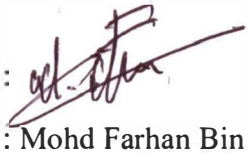
DECLARATION

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

Signature	: 
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ABSTRACT

A study on fish pigmentation by using Roselle calyces as additive on juvenile fish tilapia at different salinity was carried out. The anthocaynin content were determined during early experiment, middle of experiment and final period of experiment. The period of experiment was 1 month. The salinity ranges were 0 ppt as control, 5 ppt, 10 ppt and 15 ppt. The concentration of additive was 50 mg/kg. The proximate analysis of food with additive and without additive was determined. The fish was dissected and divide into 3 parts that were head part, body part and DFT (dorsal, fin, and tail parts) for anthocyanin analysis. The analysis of anthocyanin was showed the variation between fish parts and also variation between each treatment. As the results, pigmentation of fish was enhanced more at head part and DFT parts compared to the body part. Additionally, fish pigmentation was given better performance at 0 ppt compared to others salinity. It was proved by spectrophotometer analysis and the data has significant difference ($P < 0.05$). Fish pigmentation in 5 ppt, 10 ppt, and 15 ppt showed the significant difference ($P < 0.05$) from started experiment until the end of experiment. 5 ppt treatment was showed the lowest of anthocyanin content compared to the control (0 ppt). The Specific Growth Rate (SGR) and Feed Conversion Ratio (FCR) were determined in each treatment. Generally, in 15 ppt, the data was showed unsuitable for the growth rate of juvenile tilapia.

ABSTRAK

Kajian tentang pewarnaan ikan dengan menggunakan kelopak Roselle keatas anak ikan tilapia di dalam tahap kemasinan berbeza telah dijalankan. Kandungan pigmen anthocyanin telah dikenal pasti ketika analisis awal, pertengahan dan analisis terakhir. Jangka masa bagi eksperimen ini adalah dijalankan selama 1 bulan. Tahap kemasinan telah ditentukan dan ditetapkan iaitu 0 ppt, 5 ppt, 10 ppt dan 15 ppt. Kepekatan anthocyanin dalam bahan makanan ikan ialah 50 mg/kg. Proksimat analisis makanan ikan telah dijalankan keatas makanan ikan yang mempunyai kepekatan anthocyanin dengan makanan ikan yang tidak mempunyai kepekatan anthocyanin. Kadar spesifikasi tumbesaran dan nisbah pertukaran pemakanan telah dikenal pasti keatas setiap tahap kemasinan. Anak ikan tilapia telah dibedah dan diasingkan kepada 3 bahagian iaitu kepala, badan, dan sirip. Untuk analisa anthocyanin didapati menunjukkan variasi antara bahagian ikan dan juga diantara tahap kemasinan. Sebagai keputusan, pigmentasi ikan menunjukkan kesan yang bagus kepada bahagian kepala dan bahagian DFT. Tambahan pula, pigmentasi ikan memberi potensi yang bagus pada 0 ppt berbanding kemasinan yang lain. Ini telah dibuktikan oleh analisa spektrophotometri dan data yang terkumpul menunjukkan ada perbezaan variasi ($P < 0.05$). pada kemasinan 5 ppt, 10 ppt, dan 15 ppt juga menunjukkan perbezaan variasi ($P < 0.05$) bermula pada awal eksperimen hingga ke akhir eksperimen. Kemasinan 5 ppt telah menunjukkan tahap kandungan anthocyanin yang paling rendah berbanding 0 ppt. SGR dan FCR telah dikenalpasti dan diambil kira dalam setiap tahap kemasinan. Secara keseluruhan, data pada 15 ppt telah menunjukkan ketidaksesuaian untuk kadar tumbesaran anak ikan tilapia.