

THE EFFECTS OF ELECTRONIC AND OTHER CONTINUOUS PROCESS
EVALUATION ON MANUFACTURING COSTS

AN INDUSTRIAL CASE STUDY

DEPARTMENT OF AGRICULTURAL ENGINEERING AND FOOD SCIENCE
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**THE EFFECTS OF EGG CUSTARD ON GROWTH AND SURVIVAL RATE OF
PATIN BUNGA (*Pangasius sutchi*) LARVAE**

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**This thesis is submitted in partial fulfillment of the requirement of the degree of
Bachelor of Science in Agrotechnology (Aquaculture)**

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Wassalam.

ABSTRACT

This study was carried out to determine the effects of egg custard on growth and survival rate of patin bunga (*Pangasius sutchi*) larvae. Two days old larvae (6 to 7 mm) were reared for 36 days in 20 L aquarium which filled with 15 L water. The stocking density was 20 larvae L⁻¹. Three replicates were done for each treatments and control. The result showed that larvae fed with egg custard showed the lowest growth rate that were 0.01225 g ± 0.79 for total increment of wet weight and 15.851 mm ± 0.768 for total length. The highest growth rate shown by larvae fed with mixed diet (egg custard and control diet) that were 0.03062 g ± 0.00017 for total increment of wet weight and 23.583 mm ± 1.091 for total length followed by control (*Artemia*, *Moina* sp. and commercial pallet), 0.02632 g ± 0.00073 for total increment of wet weight and 21.413 mm ± 0.79 for total length. For survival rate, larvae fed with egg custard give the lowest percentage that was 38 % followed by larvae fed with mixed diets (72 %) and control give the highest percentage that was 85 %. From the proximate analysis, egg custard gives the lowest level of nutritional value that were 34.32 % protein, 6.81 % crude lipid, 12.47 % of moisture and 11.05 % ash. There were significant different between treatment and control for wet weight and survival rate where p< 0.05 meanwhile no significant different in total length (p>0.05).

ABSTRAK

Kajian telah dilakukan bagi menentukan kesan pemberian diet yang berbeza iaitu kastad telur, campuran antara kastad telur dengan kawalan dan juga *Artemia*, *Moina sp.* dan pelet sebagai kawalan ke atas anak ikan patin bunga (*Pangasius sutchi*). Anak ikan patin yang berusia dua hari (6 hingga 7 mm) dipelihara selama 36 hari di dalam akuarium berisipadu 20 L. Setiap akuarium diisi dengan 15 L air. Kadar pelepasan anak ikan ialah 20 ekorL⁻¹. Sebanyak tiga replikasi telah dilakukan bagi setiap rawatan dan juga kawalan. Hasil kajian telah menunjukkan anak ikan yang diberi makan kustad telur sahaja mencatatkan kadar pertumbuhan yang paling rendah iaitu 0.01225 g ± 0.79 bagi pertambahan berat basah dan 15.851 mm ± 0.768 bagi panjang keseluruhan. Kadar pertumbuhan yang paling tinggi ditunjukkan oleh anak ikan yang diberi makanan campuran (kastad telur dan kawalan) iaitu 0.03062 g ± 0.00017 bagi pertambahan berat basah dan 23.583 mm ± 1.091 bagi panjang keseluruhan diikiti dengan kawalan, 0.02632 g ± 0.00073 pertambahan berat basah dan 21.413 mm ± 0.79 bagi panjang keseluruhan. Bagi kadar hidup, anak ikan yang diberi makan kustad telur sahaja memberikan peratus yang paling rendah iaitu 38 % diikuti oleh makanan campuran (72 %) dan kawalan memberikan peratus yang paling tinggi iaitu 85 %. Daripada proksimat analisis, kustad telur memberikan nilai nutrisi yang paling rendah iaitu 34.32 % protein, 6.81 % lipid mentah, 12.47 % lembapan dan 11.05 % abu. Terdapat perbezaan yang ketara antara rawatan dan kawalan dalam kadar pertumbuhan bagi berat basah dan kadar hidup yang mana $p < 0.05$ manakala tiada perbezaan ketara bagi kadar pertumbuhan dalam panjang keseluruhan($p > 0.05$).