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BENJAMAS CHUNTAPA : PROTEIN-ENERGY RATIO IN ARTIFICIAL DIET FOR JUVENILE, BLACK TIGER PRAWN *Penaeus monodon*. THESIS ADVISOR : ASSIST. PROF. SOMKIAT PIYATIRATITIVORAKUL, Ph.D. THESIS COADVISOR : VORANOP VIYAKARN, Ph.D., PROF. PIAMSAK MENASVETA, Ph.D. 78 pp. ISBN 974-636-087-6.

The aims of the present study is to determine optimal protein energy ratio (P/E ratio) on growth and survival of juvenile prawn, *Penaeus monodon*. Two experiments with a completely randomized design was done using semi-purified diet. A semi-closed recirculating water system was used to raise prawn of initial size 0.4-0.8 g, 4-5.5 cm with density of 40 individuals/m^2.

The first experiment was designed to determine optimal lipid and carbohydrate levels using isonitrogenous (35 %) and isocalories (330 kcal/100g) diets with 5 lipid and carbohydrate levels; 4:38.5, 7:31.75, 10:25, 13:18.25 and 16:11.5 (% W/W). The lipid and carbohydrate level of 7:31.75 gave the best specific growth rate ($P<0.05$). The survival of all diet treatment group was similar. Thus optimal lipid and carbohydrate ratio for the juvenile tiger prawn was approximately 1:4.5.

In the second experiment, optimal protein energy ratio (P/E ratio) was studies using 5 protein level diets (25, 30, 35, 40 and 45%) with fix lipid and carbohydrate ratio (1:4.5 result from experiment I). Different 9 levels of energy content (203 - 459 kcal/100g) and 9 levels of protein energy ratio (63 - 171 mg protein/kcal). Prawn fed diet containing 35-45% protein and energy content 223-371 kcal/100g gave the best specific growth rate ($P<0.05$). A regression analysis indicated that optimal P/E ratio for the best growth and survival of juvenile tiger prawn range 140 to 150 mg protein/kcal.

ภาควิชา วิทยาศาสตร์ทางทะเล ลายมือชื่อนิสิต .....

สาขาวิชา วิทยาศาสตร์ทางทะเล ลายมือชื่ออาจารย์ที่ปรึกษา .....

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