

PANOMRUK PHADUNGKUL : PRODUCTION OF FEED FOR JUVENILE GIANT TIGER PRAWN (Penaeus monodon Fabricius) THESIS ADVISORS : ASSO. PROF. CHAIYUTE THUNPITHAYAKUL, Ph.D., ASSO. PROF. PANTIPA JANTAWAT, Ph.D., PROF. PIAMSAK MENASVETA, Ph.D. 117 PP. ISBN 974-578-624-1

The research involved studies on the production of feed for juvenile giant tiger prawn (Penaeus monodon Fabricius) employing food grinder and pellet mill. For food grinder, 8 kinds of binder : wheat gluten (5%, 10%, 15%), lignosulfonate (1%, 2%, 3%), guar gum (1%, 2%, 3%), cross-linking tapioca starch (2.5%, 5%, 7.5%), cross-linking and hydroxypropylated tapioca starch (2.5%, 5%, 7.5%), acetylated distarch phosphate (2.5%, 5%, 7.5%), modified waxy-maize starch (2.5%, 5%, 7.5%) and mixture of Isolated Soy Protein (ISP) with  $\alpha$ -starch (in ratio 10:0%, 10:3%, 7:3%) were compared, providing feeds with highest water stability and/or lowest cost. Three binders comprising 2.5% cross-linking tapioca starch, 1% lignosulfonate and 10% ISP. The three selected binders were used to produce feeds with adjusted isoprotein and isolipid of 40% and 7% respectively. The resulting feeds were compared to the feeds produced by using 40% minced fish, 1.5% sodium alginate and 1% sodium hexametaphosphate as protein source and binders respectively. Feeding study was carried out on juvenile giant tiger prawn (5-7 grams) for 45 days. Significant differences were found among growth rate, survival rate and feed conversion rate (FCR) in juvenile fed with five samples of feed. The formula that gave the highest growth rate comprised of 2.5% cross-linking tapioca starch and 1% lignosulfonate as binder, but for FCR, the best formula was the one that contained minced fish.

Optimum conditions for pellet mill were : 2.5% cross-linking tapioca starch as binder adjusted to a moisture content of 10% and subjected to steaming for 5 mins after pelleting. Feeding trials were again compared with the feeds that used wheat gluten 5%, mixture of wheat gluten 2.5% and cross-linking tapioca starch 2.5% and a commercial feed. Significant differences were found in growth rate. The best formula for growth was the feed that contained 2.5% cross-linking tapioca starch and 5% wheat gluten. However, No significant differences were found among the survival rate and FCR.