Lankeo Phengaloune 2011: Development of Early Stage Feed and Utilization of Modified Starch in Starter Feed for Hybrid Catfish (*Clarias macrocephalus* x *Clarias gariepinus*). Master of Science (Aquaculture), Major Field: Aquaculture, Department of Aquaculture. Thesis Advisor: Associate Professor Prathak Tabthipwon, Doctorat de 3 cycle. 63 pages.

Feeding experiments were conducted to investigate the diets for nursing of Hybrid Catfish (*Clarias macrocephalus* x *Clarias gariepinus*) of 3-10 days old and 13-28 days old. First experiment, 3 days old fish were fed with Feed.1 (*Moina* sp. protein 68.12%), Feed.2 , brewery yeast with probiotic and premix (protein 32.73%), Feed.3, yeast with probiotic and powdered milk (protein 31.05%), Feed.4, yeast with probiotic (protein 33.47 %) and Feed.5 ,decapsulated artemia cyst (protein 49.25%) for 7 days .The result showed that fish fed with decapsulated Artemia cysts obtained the better growth performances, feed conversion rate and survival rate than other group of feeding ($P<0.05$).

The second experiment Hybrid Catfish (*Clarias macrocephalus* x *Clarias gariepinus*) of 13 days old were fed with Diet 1, commercial catfish powder diet (protein 40.0%), Diet 2 with physical modified cassava starch (protein 32.87%) and Diet 3 with chemical modified cassava starch (protein 33.91%) for 14 days. The result showed that there was no significantly different in growth, survival rate and feed conversion rate among the treatment ($P>0.05$). Feed cost of fish fed with commercial feed obtained the higher cost than other group ($P<0.05$). Body composition of fish fed with 40 % protein powdered feed showed the best in protein and fat in tissue (high protein with low fat) than other group ($P<0.05$).

In third experiment Hybrid Catfish of 13 days old were fed with commercial powdered feed (protein 40.0%) and Diet with modified rice starch (protein 36.32%) for 14 days. The result showed that there was no significantly different in growth, survival rate and feed conversion rate among the treatment ($P>0.05$). Cost of feed for using of powdered feed was high ($P<0.05$) and high protein content in chemical body composition ($P<0.05$) but no significantly difference in moisture, fat and ash content ($P>0.05$).

In fourth experiment, the studied of *In vitro* protein and carbohydrate digestibility by enzyme from fish fed with decapsulated artemia cyst on commercial feed, diet with physical modified cassava starch, diet with chemical modified cassava starch and diet with physical modified rice starch. The result showed that Protein digestibility were significantly in catfish powdered feed, followed with physical modified rice starch, diet with chemical modified cassava starch, and diet with physical modified cassava starch respectively ($P<0.05$). Carbohydrate digestibility was not significant difference on diet with physical modified rice starch and commercial powdered feed ($P>0.05$) but were higher than the diet with chemical modified cassava starch and diet with physical modified cassava ($P<0.05$).

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