

CROSSBREEDING OF *Pangasius hypophthalmus* AND
Pangasius nasutus AND DIGESTIVE SYSTEM
DEVELOPMENT OF THE HYBRID LARVAE

AGUS PUTRA ABDUL SAMAD

MASTER OF SCIENCE
UNIVERSITI MALAYSIA TERENGGANU
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AGUS PUTRA ABDUL SAMAD

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AND DIGESTIVE SYSTEM DEVELOPMENT OF THE HYBRID
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Chairman : Prof. Madya Dr Anuar Hassan

Faculty/Institute : Institute of Tropical Aquaculture

A study to determine the feasibility of producing hybrid of *Pangasius* spp through crossbreeding between *Pangasius hypophthalmus* and *Pangasius nasutus* were conducted from June to August 2007.

The result of the crossbreeding between *P. hypophthalmus* female and *P. nasutus* male (HN) showed a good breeding performance, where the average fertilization, hatching and deformation rates were 81.17%, 83.06% and 8.51%, respectively. However, crossbreeding between *P. nasutus* female and *P. hypophthalmus* male (NH) resulted in low breeding performance with the average fertilization, hatching and deformation rates at 60.96%, 54.61% and 14.68%, respectively. For the control, *P. hypophthalmus* (HH), the average fertilization, hatching and deformation rates were 93.18%, 89.73% and 4.14%, respectively; and for *P. nasutus* (NN), the average fertilization, hatching and deformation rates were

76.83%, 68.26% and 7.16%, respectively. Larval rearing up to 6 weeks after hatching (6 wAH), showed that survival rate of HN was intermediate of both the parental species, with an average value of 73.33%, while, NH showed a lower survival rate with an average of 43.67%.

The incubation period for crossbreeding between *P. hypophthalmus* female X *P. nasutus* male (HN) was 20-26 hours and between *P. nasutus* female and *P. hypophthalmus* male (NH) was at 30-36 hours after fertilization. The incubation periods for the two controls were 18-24 hours after fertilization for *P. hypophthalmus* (HH) and 36-40 hours for *P. nasutus* (NN). Newly hatched larvae of HN was 3.92 ± 0.04 mm in total length and body weight was 0.22 ± 0.02 mg. Length of newly hatched larvae of NH was 5.69 ± 0.08 mm and weight was 1.76 ± 0.07 mg. For the two controls, newly hatched larvae of *P. hypophthalmus* (HH) were 3.47 ± 0.12 mm for average total length and 0.22 ± 0.03 mg for body weight. While, newly hatched larvae of *P. nasutus* (NN) were 5.79 ± 0.26 mm for average total length and 2.25 ± 0.59 mg for body weight. It was found that morphological character of the hybrid larvae closely resembled to that of *P. hypophthalmus* (HH) especially in body color.

The specific growth rates (SGR) of *P. hypophthalmus* female X *P. nasutus* male (HN) hybrid at 6 wAH showed the highest value, which reached 6.90% per day for total length and 21.73% per day for body weight. While, specific growth rates (SGR) of *P. nasutus* female X *P. hypophthalmus* male (NH) hybrid at 6 wAH was only 5.46% and 16.21% per day, for total length and body weight, respectively.

For the control, specific growth rates (SGR) of *P. hypophthalmus* (HH) was 6.53% per day for total length and 20.98% per day for body weight, while, specific growth rates (SGR) of *P. nasutus* (NN) was 5.64% and 16.26% per day, for total length and body weight, respectively.

The yolk sac volume of HN hybrid larvae was only 0.36 μ l just after hatching (0 hAH), while, NH hybrid larvae possessed a larger yolk sac of 1.52 μ l. The yolk sac of both hybrids was completely absorbed and utilized by 72 hours after hatching. For the control, *P. hypophthalmus* (HH) has 0.42 μ l of yolk sac volume, while, *P. nasutus* (NN) has 1.50 μ l of yolk sac volume just after hatching. The first mouth opening of both hybrids (HN and NH) larvae was at 18 hours after hatching (hAH). The first mouth opening of both controls (HH and NN) larvae was also at 18 hAH. The onset of exogenous feeding for both hybrids and controls was first observed at 60 hAH.