A STUDY ON THE GENETIC VARIATION OF GIANT GOURAMY, *Osphronemus* spp.

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2003

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A STUDY ON THE GENETIC VARIATION OF GIANT GOURAMY, (*Osphronemus spp.*)

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This project report is submitted in partial fulfillment of the requirements for the Degree of Bachelor of Agrotechnology (Aquaculture)

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2003

This project report should be cited as:

Soh, K.L. 2003. A study on the genetic variation of Giant Gouramy, (*Osphronemus spp.*). Undergraduate thesis, Bachelor of Agrotechnology (Aquaculture), Faculty of Agrotechnology and Food Science, Kolej Universiti Sains Dan Teknologi Malaysia. 52p.

Acknowledgements

This project would not have been successful without my supervisor, Dr. Abol Munafi Ambok Bolong, who supported me throughout the period of this study. I was also indebted to my co-supervisor, Cik Noraznawati Ismail for her suggestions and advise in this study. I am also grateful to Mr. Raja Mohammad, who took all the trouble and effort in searching the gouramis.

I wish to express my appreciation to Mr. Yeong Yik Sung for coaching me personally on the PCR-RAPD techniques and his assistance in this study. Special thanks to my senior, Mr. Ng Beng Siang for his help in the hatchery. I also would like to thank Mr. Bui Minh Tam for his help in my study. I am grateful to my fellow coursemates ah Yong and ah Chong and my housemates, Ailing, Saw Hooi ,Wei Wei and Meow for their companionship and moral support. I wish to thank Cheng Soon for his help in checking my English for this thesis.

I would also like thanks to my sweetie ling and my dear len for their companionship and for sharing our happiness and sadness together.

Lastly, I would like to express my gratitude to my parents and siblings, Gah Keat, Kah Pek and Kian Seng, thanks for their invaluable support and encouragement.

ABSTRACT

In this study, PCR-RAPD technique was used to detect genetic variation and the levels of polymorphisms among *O. gouramy, O. septemfasciatus* and *O. laticlavius*. A total of 19 tissue samples of gouramis from three species were dissected and preserved in vials containing absolute etanol (100%). DNA was extracted by using Qiagen DNeasy Tissue Kit Protocol. The DNA purity of gouramis were ranged from 1.161-2.750 and quantity of DNA were 40-225ng/µl. Two primers from Operon Technologies (OPA-10 and OPA-16) gave best reproducible banding patterns. Primer OPA-10 and OPA-16 gave a mean value of 5 bands in *O. septemfasciatus*, 5 bands in *O. laticlavius* and 6 bands in *O. gouramy*. The mean similarity indices for three species of gouramis ranged from 0.0377-0.0736. Far genetic distances was observed between *O. laticlavius* and *O. gouramy* but shown to be closer to *O. septemfasciatus*. *O. septemfasciatus* and *O. laticlavius* may have originated from the same ancestral population. It can be suggested that *O. septemfasciatus* and *O. laticlavius* might be crossbreed due to close genetic distance.

ABSTRAK

Dalam kajian ini, teknik PCR-RAPD digunakan untuk mengesan variasi genetik dan aras polimorfisme di antara tiga spesies gourami iaitu *O. gouramy, O. septemfasciatus* dan *O. laticlavius*. Daripada tiga spesies gourami, sebanyak 19 sampel tisu gourami telah dibedah dan diawet di dalam bekas yang mengandungi etanol (100%). Pengekstrakan DNA telah dijalankan dengan menggunakan Qiagen DNeasy tissue Kit Protocol. Nilai ketulenan DNA untuk ketiga-tiga spesies adalah berjulat di antara 1.161-2.750 dan kuantiti DNA berjulat 40-225ng/µl. Dua primer daripada Operon Technologies (OPA-10 dan OPA-16) berupaya menunjukkan amplifikasi berulang. Primer OPA-10 dan OPA-16 menghasilkan nilai purata sebanyak 5 jalur untuk *O. septemfasciatus*, 5 jalur untuk *O. laticlavius* dan 6 jalur untuk *O. gouramy*. Min indeks kesamaan di antara ketiga-tiga spesies gourami tersebut adalah di dalam lingkungan 0.0377-0.0736. Jarak genetik *O. laticlavius* didapati jauh daripada *O. gouramy* tetapi berdekatan dengan *O. septemfasciatus*. Oleh sebab itu, *O. septemfasciatus* dan *O. laticlavius* mungkin berasal dari populasi yang sama. Kacukan antara *O. septemfasciatus* dan *O. laticlavius* adalah mungkin memandangkan perbezaan jarak genetik yang dekat.