Samy Yehya El-Zaeem et al., J Aquac Res Development 2017, 8:2 (Suppl)
http://dx.doi.org/10.4172/2155-9546.C1.014

Evaluation of the productive performance characteristics of Nile tilapia, *Oreochromis niloticus* under the effect of DNA transfer

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This study was conducted to compare and evaluate the productive performance characteristics of the base generation (F0) of Nile tilapia, *Oreochromis niloticus* under the effect of introducing a fragmented purified DNA isolated from Blue tilapia, *O. aureus* or common carp, *Cyprinus carpio* into the gonads of *O. niloticus* parent. The results showed that daily gain of genetically modified *O. niloticus* treated with carp DNA improved significantly (P≤0.05) compared to purebreds. Also, the same treatment had significant (P≤0.05) superiority for SGR%/day compared to purebreds. The highest mean value of protein content in fish (57.55%) was obtained by Nile tilapia received carp DNA, but did not differ significantly (P≤0.05) from that of purebred of Nile tilapia (57.31%). In addition, Nile tilapia received carp DNA had significant superiority (P≤0.05) in lipid content, but did not differ significantly from those of Nile tilapia received Blue tilapia DNA. The best or higher mean of FCR and PER (2.04±0.02 and 1.53±0.01, respectively) were achieved by Nile tilapia received carp DNA, but did not differ significantly (P≤0.05) from those of Nile tilapia received Blue tilapia DNA. The results of RAPD fingerprinting showed highly genetic polymorphic percentage among purebreds, genetically modified fish. The results of the present work suggest that, genetically modified *Oreochromis niloticus* with extraordinary growth rate can be produced by transferring a foreign DNA isolated from *O. aureus* or *Cyprinus carpio* as a feasible and fast methodology. So the present investigation recommended the usage of DNA transfer as a satisfactory technique for fish improvement to modify the fish species to be more efficient in terms of growth performance and feed utilization.

Biography

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