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Aquaculture & Fisheries

July 11-13, 2016   Kuala Lumpur, Malaysia

Line crossing parameters for weight, length, condition factor and tolerance to some environmental extreme conditions in Nile tilapia (*Oreochromis niloticus*)

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Line crossing analysis was conducted for growth traits (weight and length), condition factor (body weight (g) / length (cm)3) X 100 and for tolerance to some environmental extreme conditions (salinity and cold shock) using four lines of early larval stages of Nile tilapia *Oreochromis niloticus*; Giza (G), Fouky (F), Mariout (M), and Nag-Hamaady (N). Data were analyzed using two types of analysis, one involving the straight-breeding data and crosses and another using only the crosses. All line crossing effects (general combining ability (GCA), specific combining ability (SCA), maternal ability (MA), and sex linkage (SL) showed a highly significant effect (p£0.0001 in most cases) on weight, length and condition factor. Both salinity tolerance and cold shock were highly significantly affected by GCA, SCA, and MA (p£0.0001 in most cases) while SL affected salinity tolerance (p£0.001) only. Overall heterosis for both weight and length was positive while negative estimates with no significant effect were noted for the heterosis in both salinity tolerance and cold shock. The results obtained from the two types of analysis were the same concerning the effects of GCA, SCA, and MA with some differences as regard to SL. Furthermore the ranks of the means are the same in both analyses. The general evaluation (overall mean plus all relevant crossing components) showed that FN cross showed superiority in body weight and length followed by NG where, NM and MN crosses were the least susceptible to cold shock among all crosses while NF cross attained the superiority in salinity tolerance.

Biography

Mohamed M Said has completed his PhD from Ain Shams University and worked as Associate Professor of Aquaculture at Suez University from 2011 until now. He is the Academic Coordinator of the marine fisheries technology program. He is responsible for designing and constructing the RAS research center, Suez University. He has published 4 papers in reputed journals and is participating on establishing the first Egyptian intensive shrimp production system using bio-flock technology.

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J Aquac Res Development
ISSN: 2155-9546 JARD, an open access journal

Aquaculture Summit 2016
July 11-13, 2016

Volume 7, Issue 6 (Suppl)

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