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Enhancement of reproductive performance of gangetic leaffish (*Nandus nandus*) and gourami (*Colisa fasciatus*) with dietary phospholipids

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In the present study sperm quality, histological structure of the liver and developmental stages of ovary, level of Ca^{2+} concentration, embryonic development and larval growth were investigated for the confirmation of the positive effects of PUFAs in reproduction and gonadal maturation of gangetic leaffish, *Nandus nandus* and gourami, *Colisa fasciatus*. Treated group was fed 1% squid extracted phospholipid supplemented diet whereas controlled group was fed with the same, except phospholipid. In comparison to the control group, treated group exhibited higher gonadal maturation which resulted in spontaneous spawning. The live sperm count was significantly higher ($P<0.01$) in treated group compared to control group. During the peak breeding (April) season in case of treated group most of the oocytes were found at nuclear migration and tertiary yolk oocyte stage while in case of control group most of them were found in primary and secondary yolk oocyte stage. During spawning season lipid granules and normal morphological structures of hepatocytes with enlarged nucleus and considerable amount of vacuoles were observed in case of phospholipid treated fish liver whereas less lipid granules with scattered necrosis and large vacuoles in cytoplasm with polarized nucleus were observed in control group. The serum Ca2+ concentration in treated females were significantly higher ($P<0.05$) in contrast to the controlled females of both the fishes during the breeding season. The experiment suggests that supplementation of dietary PUFAs eventually improve the spawning performances of fish.

Biography

Zakir Hossain is working as an Associate Professor from January 2016 to present in the Department of Fisheries Biology and Genetics, Bangladesh Agricultural University, Mymensingh, Bangladesh where he is continuing his research on lipids. From July 2012 to December 2015 has worked as a Research Associate in the Department of Human Nutritional Sciences, University of Manitoba under the supervision of Professor Dr James K Friel. There also he worked on dietary lipids metabolism to the preterm infants. From 2009 to 2012 he has worked as an Associate Professor in the Department of Fisheries Biology and Genetics, Bangladesh Agricultural University, Mymensingh, Bangladesh. He has supervised 14 Master's students who did their research on lipids (2009-present).

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