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Title: Combined Effects of Stocking Density and Background Colour on Growth Performance and Survival of Nile Tilapia (*Oreochromis niloticus*, L.) Fry Reared in Aquaria

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Abstract:

The effect of tank background colour and stocking density on growth rates and survival of Nile tilapia (*Oreochromis niloticus*) fry (0.32 g) were investigated. The fish were reared in aquarium with blue, black and clear backgrounds at two stocking densities of 2 fish L⁻¹ and 4 fish L⁻¹. The outside walls and bottoms of each aquarium were painted to achieve one of two colours (blue and black), while non-coloured (clear) aquarium served as a control. The fish were fed a commercial diet (40% crude protein) at a daily rate of 5% of their body weight twice a day for 70 days. The best growth rates, weight gain, specific growth rate, food conversion ratio and survival were achieved in larvae reared under 2 fish L⁻¹ stocking density in the blue back- ground. Fish performance was significantly ($P < 0.05$) retarded in larvae reared in aquarium with black background. Increased aggression was observed under high density or when the fish were reared in clear backgrounds. Fish reared on black backgrounds were distinctively darker compared to those reared in the blue and clear backgrounds. These results suggest *O. niloticus* should be reared at 2 fish L⁻¹ in aquaria with blue backgrounds.

Keywords: Background colour, Stocking density, *O. niloticus* fry, Growth.

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