

**The effect of stocking density on the growth and survival of
Tilapia (*Oreochromis niloticus*) fry during nursing period**

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ABSTRACT

Stocking density is considered one of the important factors affecting fish growth. But, information related to impact of stocking density on growth performance of tilapia fry during nursing period under the ecological conditions of Sri Lanka is limited. The study was conducted in Aquaculture Development Center Inginiyagala.

The aim of our study was to compare the growth potential of tilapia fry at various stocking densities and to determine an ideal stocking density for nursing fry under our country environmental condition. Fry of average initial weight and length 0.113 ± 0.02 and 1.83 ± 0.16 were stocked at three different stocking densities 100, 150 and 200 fry per m^2 corresponding to 1700, 2250 and 3400 fry per cement cubicles.

Fry were fed twice a day with powdered broiler feed at 10% of body weight. Every week 100 fry were collect each tanks weight were measured and feeding rates were adjusted. After the 6th week total fry were collected and their final length, weight and survival were calculated.

The average initial weight of the fry varied slightly but not significant ($P>0.05$) among all treatments. At the end of the experiment average final weight varied significantly. ($P<0.05$) Fry stocked at 100 per m^2 exhibit the higher weight gain 5.47 ± 0.04 g. while fry stocked 200 per m^2 exhibit the lower weight gain 3.21 ± 0.12 .

Specific growth rate and daily weight gain were significantly different ($P<0.05$) for all treatments but survival rate not significantly different ($P>0.05$) for all treatments.

Water quality not affect for the growth. The results demonstrate that increasing rearing density in fry *Oreochromis niloticus* resulted in heterogeneous growth rates. Specific growth rate and daily weight gain were affected by different stocking density but survival rate not affected by different stocking density.

Key words: Aquaculture, Nile Tilapia, nursing, survival rate, stocking density