

Journal of Applied Aquaculture >

Volume 20, 2008 - [Issue 1](#)

280 | 12 | 0
Views | CrossRef citations to date | Altmetric

Original Articles

Productivity and Economics of Nile Tilapia *Oreochromis niloticus* Cage Culture in South-East Brazil

L. Conte, D.Y. Sonoda, R. Shirota & J.E.P. Cyrino 

Pages 18-37 | Published online: 11 Oct 2008

 Cite this article  <https://doi.org/10.1080/10454430802022060>

Sample our
Environment & Agriculture
Journals 
>> [Sign in here](#) to start your access
to the latest two volumes for 14 days

 Full Article

 Figures & data

 References

 Citations

 Metrics

 Reprints & Permissions

Read this article

Share 

ABSTRACT

Fish cage culture is an intensive, continuous-flow fish farming system, allowing intensive exploitation of water bodies with relatively low capital investment. This study aimed to determine the production function of Nile tilapia, *Oreochromis niloticus*, in cages; the profit-maximizing biomass at 300–400 and 500–600 fish per m³ for cages of different volumes; and the influence of water body conditions in fish performance. Feed intake, survival rate, and water temperature were monitored daily; dissolved oxygen, pH, and transparency of water were monitored each 15 days. Caged tilapia were fed daily on commercial, floating pellets (32% crude protein) at 0900, 1300, and 1700, and feeding rate was adjusted based on weight gain and survival rate. Data were analyzed statistically by ANOVA ($P = 0.05$) and regression analysis; the Mitscherlich function was chosen to represent the production function. Carrying capacity of both stocking

densities reached 200 kg/m³ and no differences were found ($P > 0.05$) regarding accumulated biomass and individual average weight over time. The larger stocking density yielded larger accumulated biomass and had better feeding efficiency and no differences between individual average weights of fish at both densities were observed ($P > 0.05$). Profit-maximizing biomass at 500–600 fish/m³ was 145 kg/m³ and at 300–400 fish/m³ was 121 kg/m³. Cage farming of Nile tilapia at 500–600 fish/m³, individual average weight 283 g, presented many advantages: optimization of space and production time, better feed efficiency, higher fish production per unit volume of cages, and increased profitability.

KEYWORDS:

[Oreochromis niloticus](#) [cage farming](#) [production functions](#) [biomass](#)

Related research

People also read

Recommended articles

Cited by
12

[Tilapia Production Systems in the Americas: Technological Advances, Trends, and Challenges](#) >

Wade O. Watanabe et al.
Reviews in Fisheries Science
Published online: 24 Jun 2010

Information for

[Authors](#)

[R&D professionals](#)

[Editors](#)

[Librarians](#)

[Societies](#)

Opportunities

[Reprints and e-prints](#)

[Advertising solutions](#)

[Accelerated publication](#)

[Corporate access solutions](#)

Open access

[Overview](#)

[Open journals](#)

[Open Select](#)

[Dove Medical Press](#)

[F1000Research](#)

Help and information

[Help and contact](#)

[Newsroom](#)

[All journals](#)

[Books](#)

Keep up to date

Register to receive personalised research and resources by email



Sign me up



Copyright © 2026 Informa UK Limited [Privacy policy](#)

[Cookies](#) [Terms & conditions](#) [Accessibility](#)

Registered in England & Wales No. 01072954
5 Howick Place | London | SW1P 1WG



Taylor & Francis
by informa