



## **Biofloc technology in intensive broodstock farming of the pink shrimp *Farfantepenaeus duorarum*: spawning performance, biochemical composition and fatty acid profile of eggs**

**Maurício Emerenciano<sup>1,\*</sup>, Gerard Cuzon<sup>2</sup>, Miguel Arévalo<sup>3</sup> & Gabriela Gaxiola<sup>3</sup>**

<sup>1</sup>Posgrado en Ciencias del Mar y Limnología, Universidad Nacional Autónoma de México (UNAM), Unidad Multidisciplinaria de Docencia e Investigación (UMDI), Sisal, Yucatán, Mexico

<sup>2</sup>Ifremer (Institut Français de Recherche pour l'Exploitation de la Mer) Taravao, Tahiti, French Polynesia

<sup>3</sup>Facultad de Ciencias (UNAM), UMDI, Sisal, Yucatán, Mexico

**Correspondence:** M Emerenciano, Santa Catarina State University, Centro de Educação Superior da Região Sul (CERES), Rua Cel. Fernandes Martins n° 270, Progresso, CEP 88.790-000, Laguna, Santa Catarina, Brazil. E-mail: mauricioemerenciano@hotmail.com

**\*Present address:** M Emerenciano, Centro de Educação Superior da Região Sul (CERES), Santa Catarina State University, Laguna, Santa Catarina, Brazil

### **Abstract**

A 45-day trial was performed to evaluate the effect of biofloc technology (BFT) with or without fresh food (FF) supplementation during pre-maturation period on *Farfantepenaeus duorarum* spawning performance, biochemical composition and fatty acid profile of eggs as compared with conventional clear-water system (CW+FF). Females raised in biofloc and that received FF supplementation (FLOC+FF) achieved better spawning performance in terms of number of eggs per spawn ( $49 \times 10^3$ ), number of eggs per spawn per g of spawner's body weight ( $2.1 \times 10^3$ ) and egg size ( $\sim 275 \mu\text{m}$ ) as compared with CW+FF ( $23 \times 10^3$ ,  $1.1 \times 10^3$  and

**Keywords:** biofloc, *F. duorarum*, fresh food, reproduction, HUFA, lipid

### **Introduction**

In the initial stage of shrimp culture development, commercial hatcheries were totally dependent of wild broodstock (Menasveta, Piyatiratitivorakul, Rungsurpa, Moree & Fast 1993). With the industry boom and significant increase in postlarvae demand, the broodstock requirement increased further (Preston, Brennan & Crocos 1999). In consequence, transmission of potential pathogenic viruses from wild (Lo, Leu, Ho, Chen, Peng, Chen,