

## **Comparison of Nannochloropsis oculata Productions Cultivated in Two Different Systems: Outdoor Red Tilapia (*Oreochromis sp.*) Culture Tank and Indoor Pure Culture**

### **ABSTRACT**

Production of *Nannochloropsis oculata* or a marine eukaryotic unicellular phytoplankton was the focus of this study. The cultivation of outdoor red tilapia (*Oreochromis sp.*) in the tank and indoor was compared in producing phytoplankton. Initial density of *N. oculata* for both culture systems was  $0.5 \times 10^6$  cell/ml. Findings showed the highest density of *N. oculata* was attained from tilapia culture system at  $9.6 \times 10^6$  cell/ml harvested at day 7 while in pure culture system was  $8.5 \times 10^6$  cell/ml harvested at day 4. Contamination was dominated by protozoa (*Gymnodinium sp.*), range of  $4.80-36.67 \times 10^3$  individual cells/ml and  $0.00-41.10 \times 10^3$  individual cell/ml at both tilapia culture and pure culture systems respectively. Levels of ammonium, nitrite and nitrate in tilapia culture systems had significantly lower ( $P < 0.05$ ) concentration. In contrast, total bacteria including vibrio yellow colonies showed higher concentration in tilapia culture system but remained insignificant ( $P > 0.05$ ) for vibrio green colonies in both systems. This study concluded Tilapia culture system is as effective as pure culture system to produce *N. oculata* based on production and quality.