

Nutritional enhancement of total lipid, n-3 and n-6 fatty acids in *Artemia urmiana* nauplii by enriching with ICES/30/4

ABSTRACT

Artemia urmiana nauplii were enriched with three different concentrations (100, 200 and 300 ppm) of commercial emulsion, ICES/30/4 during two periods (12 and 24 h) to evaluate the enhancement of its Highly Unsaturated Fatty Acids (HUFAs). This source was selected because of its high concentration of the longest chain HUFA's in the n-3 and n-6 series. When 24-h-old *Artemia* nauplii were enriched with 100 ppm concentration of ICES30/4 during 12 h enriching period, the docosahexanoic acid (DHA), eicosapentaenoic acid (EPA) and arachidonic acid (ARA) contents of the nauplii increased to 0.77, 1.22 and 0.34 and when enriched with 300 ppm during 24 h increased to 5.99, 4.97 and 0.73 mg g⁽⁻¹⁾ dry weight, respectively. DHA, EPA and ARA in control nauplii were 0.00, 0.82 and 0.61 mg g⁽⁻¹⁾ dryweight, respectively. Total lipid increased from 16.79% in control group to 20.87% in the treatment ICES30/4 24-300. The results suggest that high amount of emulsion and prolong the enriching period are effective in enriching *Artemia* nauplii in both DHA and EPA increasingly ($p < 0.05$) but in other fatty acids, there are differences only among period treatments ($p < 0.05$) and concentration are not any increasing effective. There are only differences among concentration treatments in total lipid ($p < 0.05$) and enriching period do not show any differences.

Keyword: Enhancement HUFA; Emulsion level; Enrichment periods; Nutrition.