

The Use of linear and nonlinear models to predict the muscle fatty acid composition of cultured shrimp

Hosein Orajil*
Majid Shaygan²

1. Department of Fisheries, Sari
Agricultural Sciences and Natural
Resources University, Sari, Iran

2. M.sc Graduated of Fisheries,
Sari Agricultural Sciences and
Natural Resources University,
Sari, Iran

*Corresponding author:
hoseinoraji@yahoo.com

Received date: 31/07/2011

Reception date: 21/09/2011

Abstract

Seafood consumption especially penaeidae shrimps have increased recently because of their high level of HUFA n-3 and their effect on the cardio-vascular diseases. In shrimp culture, industry fish oil, because of its high level of EPA and DHA, was the best lipid source used in shrimp diet. However, because natural source cannot meet markets demand and usage of this lipid source make the diet too expensive, utilization of fish oil would not be so economical in future. One of the best solutions for this problem is fish oil replacement by plant oils in shrimp diet. According to difference between fish oil fatty acid profile and plant oil's, maintenance of fatty acid balance is very important. So in this replacement, availability of a model to predict muscle tissue fatty acid profile by knowledge about diet ones looks necessary. In this study EPA, DHA, linoleic acid, linolenic acid and oleic acid datum have been extracted from 13 articles and were analyzed by SPSS statistical software. Out coming regression equations indicated that EPA (0.83) and linolenic acid (0.86) showed the highest R² and followed by DHA, oleic acid and linoleic acid with 0.70, 0.63 and 0.41 respectively.

Keywords: Shrimp, fatty acid, regression coefficient, regression equation.