

## Effects of dietary of *Artemia urmiana* nauplii enriched with fish and vegetable oil on body composition of Rainbow trout, *Oncorhynchus mykiss*

Kazemi, Esmail<sup>1&2\*</sup>, Agh, Naser<sup>2</sup>, Moradian, Hosein.<sup>2</sup> and Nazari, Sajjad<sup>2</sup>.

1Department of Aquaculture, Faculty of Natural Sciences, Urmia University, Urmia, Iran

2Shahid Motahari clod-water fish genetics and breeding Research center, Yasouj

3Artemia and Aquatic Animals Research Institute, Urmia University, Urmia, Iran

HUFA (highly unsaturated fatty acids) content is one of the most important indices for determination of food value in fish larvae feeding. The HUFA has also an important role in fish larvae health, growth and survival. Because of this, enrichment methods for increasing of HUFA content in *Artemia* nauplii was developed. The aim of this study was to determine the impacts of dietary of fish and vegetable oil on Rainbow trout, *Oncorhynchus mykiss*, body composition. The experiments were carried out in six different treatments with three replicates for 2 weeks. The feeding treatments during the first 10 days included: 1) Commercial diet, 2) *A. Urmiana* nauplii enriched with fish oil, 3) *A. urmiana* nauplii enriched with Sunflower oil, 4) *A. urmiana* nauplii enriched with Canola oil, 5) *A. urmiana* nauplii enriched with Soybean oil, 6) Newly hatched un-enriched *A. urmiana* nauplii. The highest concentrations of fatty acids in diet were oleic, palmitotic, linoleic, eicosapentaenoic acid (EPA) and stearic acid, while in larvae tissue of trout in all treatments were oleic, linolenic, linoleic, stearic and docosahexaenoic acid (DHA), respectively. The concentrations of eicosapentaenoic acid [20:5(n-3)] in contrast with docosahexaenoic acid [22:6(n-3)] in the Commercial diet were significantly reduced ( $P<0.05$ ). The highest concentrations of EPA was observed in nauplii enriched with fish oil in which statistically significant in comparison with the other treatments ( $P<0.05$ ). The DHA content in newly hatched non-enriched nauplii and nauplii enriched with vegetable oil were zero. The results showed that vegetable oil (Canola, Sunflower and Soybean) in comparison with fish oil give more suitable results and thus, the present study suggests that early life stage of larvae growth can be feed with nauplii enriched with Canola oil.

Keywords: Rainbow trout, early feeding, *Artemia*, enrichment, vegetable oil, fatty acids