

Study on Nutritional value (Essential Fatty Acids) of the cyclopoid copepod *Acanthocyclops trajani* fed on different microalgal and herbal diets

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Abstract

In this study which was carried out in September 2017, the effects of different diets on essential fatty acid composition of cyclopoid copepod *Acanthocyclops trajani* were studied. For this purpose, firstly, the copepods were mass cultured in 120 liter tanks by feeding on different diets (3 treatments, 3 replicate in each one) including fresh composition of microalgae: *Scenedesmus obliquus* and *Spirulina maxima*, dried compound of mentioned microalgae (1:1) and dried composition of vegetables (spinage, parsley and coriander). The results indicated that the type and amount of essential fatty acids in copepod body were be influenced by food diet type, significantly ($P<0/05$). The Docosaehaenoic acid, DHA (C22:6n-3), was ($\%3/75\pm1/08$) significantly higher than other treats in copepods fed on dried microalgae. Also, the analysed copepods indicated the higher levels of Eicosapentaenoic acid, EPA (C20:5n-3), and DHA in relation to corresponding diets, which confirms, with due attention to low content of Highly unsaturated fatty acids, HUFA, in diets, *A.trajani* is probably potential to bioconversion or accumulation of essential fatty acids. On the basis of this study, also with due attention to higher level of DHA/EPA in copepoda feeding by dried microalgae, there is the potential of the usage of them during shortage or descending time of fresh microalgae.

Keywords: Copepod, *Acanthocyclops trajani*, Essential Fatty Acid, Dried microalgae.