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EFFECT OF FEEDING DIFFERENT MICROALGAE ON SURVIVAL, GROWTH AND BIOCHEMICAL PERFORMANCE OF ARTEMIA

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The successful culture of marine fish species is mainly based on live prey quality during larval culture period. It is obvious that nutritional value of artemia is lower than that of copepods in marine natural environment. Therefore, artemia must be fed with microalgae which contain high amounts of essential nutrients such as essential fatty acids and amino acids. Artemia metanauplii is also important for alternative cultured species such as rockfish, paralarvae of octopus and sea horses. During the growth phase of marine fish species, as mouth gets bigger, larger size of artemia is also needed. Therefore, the aim of this study was to evaluate the effect of four microalgae species on the survival, growth and biochemical composition of artemia.

Four microalgae species (*Amphora coffeaeformis viridis*, *Chlamydomonas reinhardtii*, *Chlorella vulgaris* and *Dunaliella salina*) were maintained and cultured at the Phytoplankton and Zooplankton Culture Laboratory, Istanbul University, Faculty of Fisheries.

Artemia were fed with 5 microalgae diets; four of them contained a single one of the four microalgae species and the fifth diet contained a mixture of four species during 15 days of feeding. Microalgae were daily counted before giving to artemia. Each group was designed as triplicate and each erlen (working volume 250 ml.) contained 22 artemia ml⁻¹ before starting the experiment. Total length was measured at day 3, day 6, day 9, day 12 and day 15 of the experiment. For that purpose, 30 artemia were removed from each group and put in 5 % formaldehyde solution.

Final survival was determined by counting all alive artemia in each experimental group then stored in -80°C in refrigerator before biochemical analysis. The results showed excellent survival (average 70%) in artemia exclusively fed with *Amphora coffeaeformis viridis*, *Dunaliella salina* and Mix microalgae diet with better values than *Chlamydomonas reinhardtii* and *Chlorella vulgaris* fed artemia (Fig. 1). Proximate and fatty acid compositions of both microalgae and artemia were analysed.

Despite the utilization of commercial diets in live prey cultivation, microalgae seem to be still adequate for culture performance of artemia. In this case, *Amphora coffeaeformis viridis*, *Dunaliella salina* and Mix diet of microalgae seem to sustain good growth performance and biochemical composition.

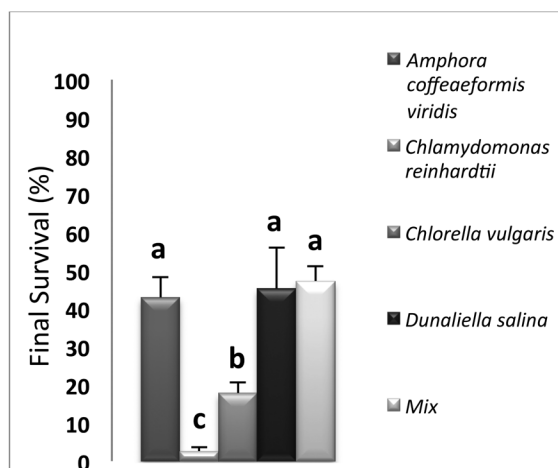


Figure 1. Survival of artemia fed five microalgae diet