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Brachiomonas sp. and *Eunotia* sp. two new Microalgae favourable for mariculture cultivation

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The unicellular algae have been used in aquaculture as food for zooplankton and some other herbivorous organisms, e. g. larval bivalves. One of the main conditions has been the fastest possible growth of populations and adequateness of the species's size and quality as food for the organisms they have been grown for. Although the concentrated algae (either frozen or dessicated in capsulae) have been used lately as a food for zooplankton, live unicellular algae have remained a basic food in mariculture. Consequently, new phytoplankton species are still being isolated and the investigations on their ecology and nutritional quality carried on.

This paper presents the results of the research work on two microalgae (Brachiomonas sp. and Eunotia sp.) isolated at the Biological Institute, Dubrovnik, where they were used for the first time as food for rotifers. This work is a part of a larger programme "Influence of the different algae on the growth and nutrient quality of the rotifer Brachionus plicatilis for better survival and growth conditions of the rotifer-fed sea bass larvae and the post-larvae".

The two algae were isolated in supralittoral rock pools in Dubrovnik, by the standard method of dilution and micropippeting (Knight-Jones, 1951). The algae were cultured in pasteurized nutrients enriched sea water (Guillard and Ryther, 1962) in aerated 50 l plastic bags, at 22°C and 12 hL: 12 hD cycle and the light level of 480 lux. The culture density was determined daily by microscopic counts in Burker-Turk chamber. The rotifer Brachionus plicatilis was inoculated (ca 10 ind/ml) when the algae population density reached over 3 x 10^5 cells/ml). The growth of rotifer population was observed daily, until the density was sufficient for larvae's food. Rotifer's chemical composition was also analysed (Carić et al, 1989).

Both phytoplankton species achieved high population densities on the fifth day of the trial (Fig 1). The green algae Brachiomonas sp. was observed to retain the highest density somewhat longer than the other species. Moreover, rotifer Brachionus plicatilis fed on Brachiomonas sp. reached higher density values than when fed on the diatom Eunotia sp. (Fig 2).

Water, ash, lipids and proteins contents of the rotifer fed on these two microalgae differed from those of the rotifer fed on Chlorella sp. and Phaeodactylum tricornutum (Carić et al, 1989). Highest protein levels were found in Eunotia sp. - fed rotifer, whereas lipids were observed to achieve the highest values in rotifer fed on Chlorella sp. Because of a relatively fast population growth which saves both time and energy and thus reduces production costs, optimal cell size (15 - 90 µm) and high protein levels, we recommend the use of both microalgae for rotifers rearing.

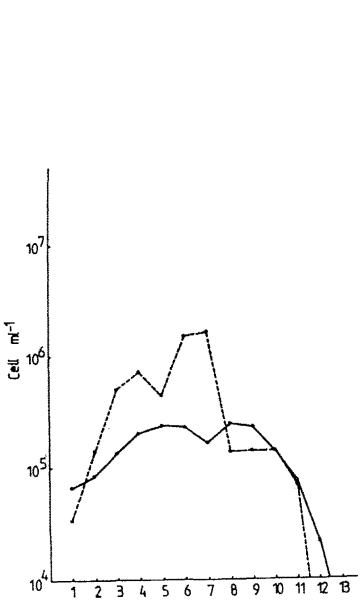

Figure 1. Population growth of microalgae Eunotia sp. (----) and Brachiomonas sp. (——)

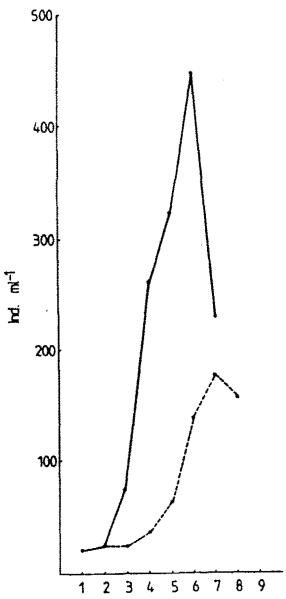

Figure 2. Population growth of the rotifer Brachionus plicatilis fed on Brachiomonas sp. (——) and Eunotia sp. (---)

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