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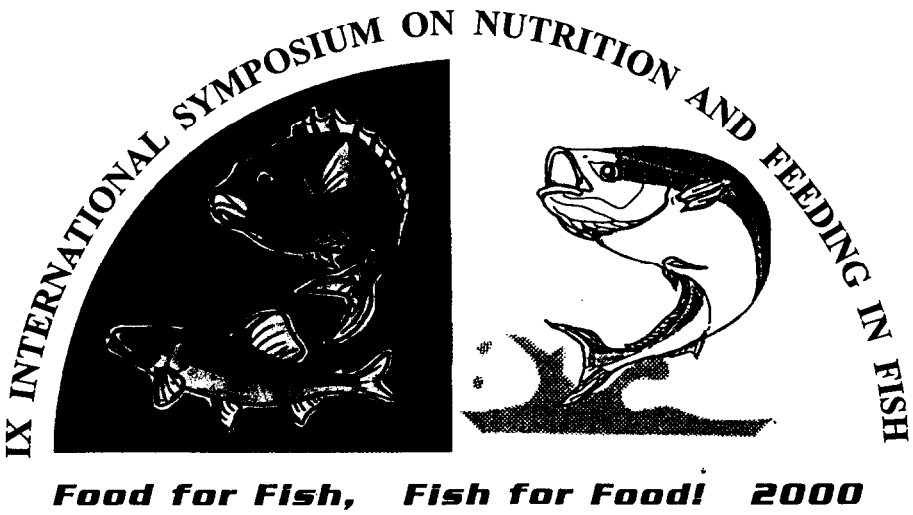

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EFFECT OF N-3 HUFA AND MONOENES RICH ROTIFERS (*Brachionus plicatilis*) ON DIGESTIVE LIPOLYTIC ENZYME ACTIVITIES IN GILTHEAD SEA BREAM (*Sparus aurata*) LARVAE

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The aim of the present study is to asses the capacity of gilthead sea bream larvae to digest dietary lipids from first feeding. For that purpose 125 eggs/ l were distributed in nine 100 l fiberglass tanks (triplicates per treatment) with central aeration and a constant water flux of 500 l/ min, reduced to 250 l/ min at hatching (Day 0: D0). From D4, larvae were fed rotifers (5 rot/ ml, D3-D8 and 10 rot/ ml, D8-D15) either enriched with emulsions of soybean lecithin and DHA 27 (Nippai.Co.Ltd, Tokyo, Japan) (T1) or EPA 28 (Nippai.Co.Ltd, Tokyo, Japan) (T2) or fed baker's yeast (Control Treatment, CT) during 18 h while they reached a total lipid content of 26.4% (T1), 30% (T2) and 10.3 (CT), respectively (% dry weight). Temperature ranged from 20 to 23 °C along the larval rearing.Besides its higher lipid content T2 rotifers (EPA rich) also showed a significantly higher EPA/DHA ratio (1.96) with respect to T1 (0.59, DHA rich) or CT (0.65, monoenes rich) ones. By D10 larvae fed CT showed a significantly lower growth (3.95±0.41 mm) than T1 (4.29±0.49 mm) and T2 (4.29±0.40 mm) fed larvae, probably indicating an essential fatty acid defficiency, other than EPA or DHA, such as AA (arachidonic acid), absent in CT. Neutral lipase activity was detected from first day of feeding (D4) and was also measured at D9 and D15 after hatching. Results demonstrated an age depending relation of lipase activity of the larvae ($Y= 417.22Ln(X)-509.04$; $r^2 =0.9958$) together with a dietary lipid dependence. Although 9 day old larvae showed similar lipase activities among experimental groups, by D15 larvae fed CT showed significantly lower lipase activity. This could be due in one hand to the high content in these rotifers of monoenes rich in 16: 1n-7 and 18: 1(n-7+n-9) which are poorer substrates for the neutral lipase than the polyunsaturated fatty acids and in the other hand to the absence of soybean lecithin rich in phospholipids acting as lipid emulsifiers in this treatment. This was in agreement with the growth results observed. Therefore, although gilthead sea bream larvae seemed to be able of digesting dietary lipids from first day of feeding, dietary fatty acid composition might enhance lipid digestion as well as growth.