

## GROWTH, SURVIVAL AND HISTOLOGICAL STRUCTURE OF LIVER AND GUT OF LARVAL GILTHEAD SEABREAM (*Sparus aurata*) FED ON MICRODIETS DIFFERING IN THEIR LIPID COMPOSITION

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In a previous study feeding larval gilthead seabream (*Sparus aurata*) on microdiets, an improved larval growth rate was obtained by feeding the larvae on diets containing n-3 HUFA in the polar lipid fraction. A beneficial effect of the dietary lecithin on the n-3 HUFA incorporation to the larval polar lipids was also observed.

To confirm those results and in order to obtain additional information from the study of larval liver and gut histological structure, 11-day-old larvae were fed 4 microdiets: in diets A and B the main sources of n-3 HUFA were neutral lipids, and polar lipids in diets C and D. Three lecithin levels were tested, being the highest in diet B and the lowest in diet C. The total n-3 HUFA level in diets A and B was enough to meet the essential fatty acid requirement of larval gilthead seabream obtained in a previous study with a triglyceride based diet, while diets C and D had a total n-3 HUFA level lower than the minimum determined.

A reduction in the larval essential fatty acid needs from 2 to 1.5% d.w. was obtained by inclusion in the diet of n-3 HUFA from a polar lipid source. Feeding larvae on microdiets with low polar lipid levels produced an accumulation of lipid droplets in the enterocytes and a high number of lipid vacuoles in the hepatocytes producing nuclear migration.