



THE EFFECT OF INCLUSION OF SEVERAL LEVELS OF VITAMIN E AND ASTAXANTHIN IN MICRODIETS FOR GILTHEAD SEABREAM (*Sparus aurata*) LARVAE

M. M. González¹, R. Christiansen², J. A. Socorro¹, M. S. Izquierdo³, O. J. Torrissen², M. Salhi¹, C. M. Hernández-Cruz³, M. Bessonart⁴ and H. Fernández-Palacios¹

¹ Instituto Canario de Ciencias Marinas, Gobierno de Canarias, P.O. Box 56, E-35200 Las Palmas, Spain.

² Institute of Marine Research, Matre Aquaculture Research Station, N-5198, Matredal, Norway.

³ Dpto. Biología, Universidad de Las Palmas de Gran Canaria, P.O. Box 550, E-35017 Las Palmas, Spain.

⁴ Instituto de Biología, Facultad de Ciencias, Universidad de la República, Iguá s/n, 11400 Montevideo. Uruguay.

A nutritional experiment was carried out to study the effect of feeding a gelatin microbound microdiet supplemented with different amounts of vitamin E and astaxanthin to gilthead seabream larvae. Several treatments were used combining vitamin E (0 and 1500 mg/kg dry diet) and astaxanthin (0 and 100 mg/kg dry diet). A treatment without vitamin E and astaxanthin was also assayed. Growth, survival and activity of the larvae were recorded throughout the experiment. The proximate composition, fatty acids, astaxanthin and α -tocopherol contents were determined in the microdiets and in the larvae at the start and the end of the experiment. Additionally, total vitamin A, free retinol and free retinal analysis along with an histological study were carried out in the larvae.

The dietary treatments did not affect neither larval growth, survival nor larval activity ($P < 0.05$). All the microdiets displayed similar proximal composition and fatty acids of the total lipids. The α -tocopherol content of the larvae fed the microdiets with vitamin E supplementation was 7.8 higher than that of the larvae fed the non-supplemented diets. Astaxanthin was not detected in the larvae and no relationship between the dietary content of astaxanthin and the α -tocopherol content of the larvae was observed. The histological examination revealed an enhanced effect of astaxanthin-rich microdiets in larval lipid metabolism. Further studies are needed in order to understand the factors of the metabolic effect of astaxanthin in gilthead seabream larvae.