



INCLUSION OF CAROTENOIDS IN BROODSTOCK DIETS FOR GILTHEAD SEABREAM (*Sparus aurata* L., 1758) : EFFECTS ON EGG AND SPAWNING QUALITY

Scabini, V.^{1,2}, Fernández-Palacios, H.¹ and Izquierdo, M.S.¹

¹ Grupo de Investigación en Acuicultura. P.O. Box 56. 35200. Telde, Las Palmas. Canary Islands, Spain.

² Facultad de Ciencias, Universidad de Magallanes, Punta Arenas, CHILE

Carotenoids are known to be necessary in diets for broodstock of several species including sparids. However, this aspect of broodstock nutrition has not been yet studied in seabream. Thus, the objective of the present experiment was to investigate the effect of supplementation of practical diets for gilthead seabream with two different carotenoids concentration levels (30 and 60 mg/kg from a paprika source) in combination with two n-3 HUFA levels (2.5 and 4 % dry weight, from fish oil) on egg and spawning quality. Thirty six mature seabreams (*Sparus aurata* L., 1758) of 1.20 kg average body weight for the females and 0.460 kg for the males were divided into 12 groups of 2 males and 1 female in 1 m³ fibre tanks and fed one of the following diets: 30/2.5 (30 mg/kg total carotenoids and 2.5% HUFA), 30/4 (30 mg/kg total carotenoids and 4.0 HUFA), 60/2.5 (60 mg/kg total carotenoids and 2.5 HUFA) and 60/4 (60 mg/kg total carotenoids and 4 HUFA). Each diet was tested by triplicates. Fish were fed three times a day for 7 weeks 1.5% bodyweight/day. Five spawning quality parameters were daily recorded for 30 days. Besides, samples of eggs were taken along the experimental period and analyzed for proximate and fatty acid composition. After 60 days of feeding, spawning quality was significantly higher in the broodstock fed 60/4 diet. In average, along the whole feeding period egg viability and hatching rates, together with total number of viable eggs, just hatched out larvae and number of alive larvae at mouth opening were significantly higher for broodstock fed this 60/4 diet. Elevation of either carotenoids content of n-3 HUFA, only slightly, but not significantly improved certain spawning quality parameters. Analysis showed that carotenoids from paprika were successfully incorporated into eggs, suggesting the good utilization of this ingredient by gilthead seabream broodstock and its effectiveness to improve spawning quality in this species.

Keywords : carotenoids ; broodstock ; spawning ; quality ; HUFA.