PLASMA SEX STEROID PROFILES IN MEAGRE (*ARGYROSOMUS REGIUS*)

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Introduction:

Meagre is a new species for Mediterranean aquaculture and the reproduction is still relatively unknown. The aim of this work is to obtain the profile of sex steroids levels during one year and 8 months to gain knowledge on the meagre reproductive system.

Methods:

A meagre broodstock (first generation, G1, in captivity) of mean weight 6,79±0,19 kg was held in IRTA, Sant Carles de la Ràpita, Spain, under natural photoperiod and temperature (min 12.8ºC, max 23.7ºC). Every month, from February 2009 to November 2010, fish were anesthetized with MS-222 (70 mg L^{-1}) and a blood sample of 1.5 mL collected. Plasma was obtained by centrifugation (3000g, 15min, 4ºC) and stored at -80ºC for steroid analysis. Levels of estradiol (E_2), testosterone (T) and 11-ketotestosterone (11-KT) were quantified by ELISA. Oocyte samples were obtained by canulation biopsy and sperm samples by abdominal pressure.

Results:

During the first year, female plasma levels of E_2 were elevated during February and increased reaching the maximum in April (0.54±0.09 ng ml^{-1}), which coincided with the presence of vitellogenic oocytes in the ovary. The E_2 plasma levels then returned to basal levels in June. In the second year, the E_2 started to increase in December and the highest levels were observed in March (1.15±0.52 ng ml^{-1}). A similar pattern was observed in plasma levels of 11-KT in males, during the first year levels were significantly higher in February (0.64±0.07 ng ml^{-1}) and decreased to a low in June. The highest percentage of spermiating males was encountered in April. In the second year, 11-KT began to increase in November with the maximum in March (0.27±0.11 ng ml^{-1}) and decreased in May when 100% of males had flowing sperm. Plasma levels of T in males did not show significant differences over the sampling period.

Conclusion:

In conclusion, this study provides the profiles of three sex steroids that clearly identify the period of gametogenesis (December – March) before the spawning period (April-May).