



## 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 12.8°C, max 23.7°C). Every month, from February 2009 to November 2010, fish were anesthetized with MS-222 (70 mg L<sup>-1</sup>) and a blood sample of 1.5 mL collected. Plasma was obtained by centrifugation (3000g, 15min, 4°C) and stored at -80°C for steroid analysis. Levels of estradiol (E<sub>2</sub>), 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<sub>2</sub> were elevated during February and increased reaching

the maximum in April (0.54±0.09 ng ml<sup>-1</sup>), which coincided with the presence of vitellogenic oocytes in the ovary. The E<sub>2</sub> plasma levels then returned to basal levels in June. In the second year, the E<sub>2</sub> started to increase in December and the highest levels were observed in March (1.15±0.52 ng ml<sup>-1</sup>). 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<sup>-1</sup>) 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<sup>-1</sup>) 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).