

Abstract:

Influence of temperature regime on endocrine parameters and vitellogenesis during experimental maturation of European eel (*Anguilla anguilla*) females.

Pérez, L., Peñaranda, D.S., Dufour, S., Baloché, S., Palstra, A.P., van den Thillart, G.E.E.J.M., Asturiano, J.F., 2011. Influence of temperature regime on endocrine parameters and vitellogenesis during experimental maturation of European eel (*Anguilla anguilla*) females. Gen. Comp. Endocrinol. 174, 51-59.

We examined the effect of temperature in European silver eels during their maturation induced by injections of carp pituitary extract on endocrine parameters: pituitary *fshβ* and *lhβ* expression, plasma 17β-estradiol (E2) and vitellogenin, estrogen receptor 1 (*esr1*), and vitellogenin2 (*vtg2*) expression in liver. A variable thermal regime (T10) that increased from 10° to 14° and 17°C was compared with a constant 20°C regime (T20) during 12 weeks. T10 caused a faster development until week 8, higher *fshβ*, *lhβ*, *esr1* expression, and higher E2 levels. The results strongly suggest that T10 is inducing a higher endogenous FSH level which increases the E2 circulating level during vitellogenesis. A variable thermal regime induced an *fshβ* expression and E2 profile in vitellogenic hormonally matured eel females that were more similar to the profile observed in other naturally maturing fish.