

Effects of constant photoperiod on spawning and plasma 17



This work examines the effects of constant long and short days on the hormonal profile of plasma 17 β -oestradiol (E2) levels and the ovarian vitellogenic events, as well as on the fecundity, time of spawning and egg quality of sea bass. Constant short days first administered in April advanced spawning (by 45 days on average) whereas exposure to constant long days from the same date induced a delay (averaging 38 days) compared to controls reared on an ambient light regime (Lat. 40°N). These light regimes produced shifts in the profiles of plasma 17 β -oestradiol and in the percentage of the vitellogenic oocytes according to the spawning time of the respective groups. Relative fecundity of the short day group was similar to controls (257,000 versus 230,000 eggs/kg spawned female, respectively). However, in the long day group, relative fecundity was reduced to one half that of control fish (124,000). Plasma oestradiol showed a bimodal pattern under long days and vitellogenic and atretic oocytes were present for a longer period (6-7 months compared to 4-5 months in controls). In summary, in this paper we describe, for the first time in the sea bass, the effect of constant photoperiod regimes on the 17 β -oestradiol plasma profiles, the timing of spawning and the quality of the eggs.

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