{rokbox title=|Conceptual time-line of performed experiments for each species :: Image: Authors|
thumb=|images/stories/ieo/imagenespublicaciones/centro-oceanografico-baleares-efecto-luz-bonito-atun-rojo-blanco-et-al-2017-thumb.jpg|}images/stories/ieo/imagenespublicaciones/centro-oceanografico-baleares-efecto-luz-bonito-atun-rojo-blanco-et-al-2017.jpg{/rokbox}

Edurne Blanco, **Patricia Reglero**, Aurelio Ortega, Fernando de la Gándara, Øyvind Fiksen, Arild Folkvord, 2017. **The effects of light, darkness and intermittent feeding on the growth and survival of reared Atlantic bonito and Atlantic bluefin tuna larvae.** Aquaculture. Volume 479, 1 October 2017, Pages 233-239.

Abstract: In larval culture, long light photoperiod regimes are used to maximize ingestion rates by increasing the accessibility to prey and therefore enhancing larval growth. Intermittent feeding could provide a viable alternative to the commonly used continuous feeding regimes that aim to improve larval growth and survival. In this study, we investigate the effect of alternating light/darkness regimes with intermittent feeding on the growth and survival of piscivorous larvae of two Scombrid species: Atlantic bonito, *Sarda sarda* (Bloch, 1793) and Atlantic bluefin tuna *Thunnus thynnus* (Linnaeus, 1758). First we tested if the manipulation of a light regime generated intermittent feeding by analyzing the larval stomach content. Then, we conducted two laboratory experiments to identify the best alternating light regime that maximized larval growth and survival by comparing the results to those obtained using continuous light regimes. The manipulation of light was optimized to provide intermittent feeding opportunities for the larvae, since we discovered a clear interruption of feeding in darkness. An increase in specific ingestion throughout the day was observed in all experiments, reaching a maximum peak late in the day. Bluefin tuna larval growth rates were similar despite different alternating conditions whereas the bonito larvae grew best when provided with light at three hour intervals. In both species, growth under alternating light conditions was similar to the 15 hours continuous light treatment. No differences between the alternating and the continuous light treatments were observed in terms of their survival. Our results suggest that alternating light/feeding periods may have a beneficial effect on ingestion rates; possibly because feeding is less satiation-limited, metabolic costs are lower; or food digestion is more efficient under these conditions. Changes in the light regime, that result in pulse feeding, can thus be an optimal strategy to increase growth at no apparent survival cost in bonito or bluefin tuna larval cultures.

Keywords: Bluefin tuna, Bonito, Larva, Growth, Survival, Photoperiod, Intermittent feeding,

Piscivory