

Yolk utilization, metabolism and growth in reared



To understand the mechanisms that influence recruitment of the commercially important chokka squid *Loligo vulgaris reynaudii*, knowledge of its early life history is required. This paper evaluates the influence of food supply on yolk utilization, metabolism and growth of paralarvae. Eggs collected on the spawning grounds were incubated and the paralarvae reared in the laboratory under "fed" and "starved" conditions for 22 d at 16 ± 1 °C. Some paralarvae lasted 42 d in the laboratory. Mantle length (ML), wet and dry weights (WW and DW) and yolk weight (YW) were measured daily from samples of ~30 (10–51) paralarvae from each group. Yolk weight was estimated using image analysis to determined yolk volume. Three methods (growth model, O₂ consumption rates and yolk utilization rates) were used to estimate metabolic rates. Input parameters included daily mean wet weight of paralarvae and temperature. Mean ML, WW, DW and YW at hatching were found to be 2.3 mm, 1.86 mg, 0.45 mg and 0.21 mg, respectively. The experiment revealed that daily yolk utilization rates were 86 and 95% d⁻¹ for fed and starved paralarvae respectively, and that the

yolk reserve was almost exhausted 3–4 d after hatching. Starved paralarvae survived for 6 days (with 80% mortality), while fed paralarvae attained a growth rate of 7.8% body WW d⁻¹ over the first 22 days after hatching. Results illustrate that temperatures on the chokka squid spawning grounds allow paralarvae to grow at the fastest rates possible without being subjected to a growth "slow down" caused by a high temperature dependent imbalance between sustaining high metabolic and commitment high feeding rates.

Auteurs du document : Erica A.G. Vidal, Mike J. Roberts, Rodrigo S. Martins

Obtenir le document : EDP Sciences

Mots clés : Squid, Paralarvae, Temperature, Growth, Metabolic rate, Feeding rate

Thème (issu du Text Mining) : MILIEU NATUREL

Date : 2005-12-23

Format : text/xml

Source : <https://doi.org/10.1051/alr:2005040>

Langue : Anglais

Télécharger les documents : <https://www.alr-journal.org/10.1051/alr:2005040/pdf>

Permalien : <https://www.documentation.eauetbiodiversite.fr/notice/yolk-utilization-metabolism-and-growth-in-reared0>

Evaluer cette notice: