

The Development and Survival of *Solea aegyptiaca* Raised on *Artemia franciscana* Supplemented with Four Distinct Microalgae Species Cultivated on Two Sources of Seawater

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Abstract : This study used two water sources (Eastern Harbour (EH) and MaxWell (MW)) to assess suitable water sources to enhance *Solea aegyptiaca* aquaculture from the larval to the juvenile stage. Initially, the nutritional value of four microalgae (*Chlorella salina*, *Tetraselmis chuii*, *Nannochloropsis salina*, and *N. oculata*) was evaluated in the two water sources. When compared to EH, MW with a high nitrate level increased the algal biomass and the biochemical makeup of all species. Among the species under investigation, MW-N. salina had the highest growth and biochemical contents. It also produced *Artemia franciscana*, which had much higher levels of arachidonic acid (ARA), eicosapentaenoic acid (EPA), and docosahexaenoic acid (DHA) than EH. Secondly, from 10–48 days post-hatch at a density of 15 larvae/L, *Artemia*-enriched MW-N salina was employed to improve *S. aegyptiaca* quality in both water sources. When compared to the strain raised on EH, the MW-S. *aegyptiaca* showed a noteworthy rise in morphometric parameters, albino percentages, and the greatest concentrations of ARA, EPA, and DHA (35.9, 6.1, and 15.9 µg/g, respectively). According to the study, MW-S. *aegyptiaca* albinism is caused by a high dietary and ARA content. From microalgae to *S. aegyptiaca*, the quality of the entire food chain is greatly influenced by the seawater supply.

Keywords : albinism, *Artemia franciscana*, fatty acids, microalgae, seawater sources, *Solea aegyptiaca*

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