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Effect of mono and binary diets on growth and reproduction of cyclopoid copepod (Article)

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Abstract

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This study compared the efficiency of different diets on the growth, survival and reproduction of the cyclopoid copepod *Apocyclops ramkhamhaengi* as a potential live food species for fish larvae and crustaceans in aquaculture. The experimental diets consisted of four mono diets (chicken manure, palm kernel cake (PKC), *Tetraselmis* sp. and *Nannochloropsis* sp. (control) and two binary diets (chicken manure + PKC and *Tetraselmis* sp. + *Nannochloropsis* sp.). The experiment was carried out for 15 days and the population growth, specific population growth rate, survival and reproductive performance (hatching time, hatching rate, generation time, life spawning times, daily offspring production, lifespan and sex ratio) were used to assess the responses of *A. ramkhamhaengi* to different food types. The diets were given at the concentration of 500 mg L⁻¹. Population growth (10.18±1.84 ind mL⁻¹; p = 0.245) and survival (126.16±23.27%; p = 0.370) of copepods were not significantly affected (p = 0.245, p = 0.370; p > 0.05) by the mono and binary diets. However, the reproductive performance of the copepods was significantly affected by the diets used (p < 0.05). Among all the diets used, the mono diets; *Tetraselmis* sp. produce the highest population growth (10.59±1.93 ind mL⁻¹), survival (130.35±25.77%) and reproduction (e.g. hatching rate, 84.01±6.02%) compared with other mono and binary diets. The present study indicates that organic fertilizers used in this study are able to substitute microalgae as an alternative feed and assists in the production of *A. ramkhamhaengi* as live food for marine larvae in hatcheries. © 2018, BIOFLUX SRL. All rights reserved.

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