

Role of Natural Food in Enhancing the Productivity of Saline Nile Tilapia in the Mangrove Ecosystem of Segara Anakan Lagoon, Brackish Water Culture

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Abstract	<p>Saline Nile Tilapia, <i>Oreochromis niloticus</i> (Linnaeus, 1758) and Milkfish, <i>Chanos chanos</i> (Forsk., 1775) polyculture systems in brackish water culture require natural food to sustain their brackish water fish production. Brackish water culture of Saline Nile Tilapia is developed to improve the productivity of abandoned shrimp or crab pond. At present, there are no studies examining the potential of natural food to improve the productivity of these polyculture systems in the brackish water pond located in Tritih Kulon Village, Cilacap, Central Java. To assess the availability of this food source, the diversity and abundance of plankton in the water body were evaluated through analysis. Therefore, this study aimed to analyze plankton diversity in the water body and the relationship between plankton abundance as a natural feed and saline Nile Tilapia productivity in the brackish water polyculture. Phytoplankton and zooplankton were identified according the plankton characteristic available in the references. The results showed that 21 planktons, comprising 12 phytoplankton species and 9 zooplankton groups, were identified. In spite of low plankton diversity, however, this study proved that the plankton abundance positively supported Saline Nile tilapia productivity in the polyculture system with milkfish, as indicated by low mortality ($17,5 \pm 8,59 \%$; $R^2 = 0.825-0.908$), absolute high weight gain ($208.2 \pm 22,5 \text{ gr}$; $R^2 = 0.881-0.874$), and high specific growth ($2,28 \pm 0.77 \%$ day⁻¹; $R^2 = 0.87-0.91$). The productivity of Saline Nile Tilapia in brackish water polyculture with milkfish is supported by the availability of natural food, with 5.95 to 18.50% of their gut content obtained from plankton.</p>
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