PENGARUH PEMBERIAN CAMPURAN TEPUNG ECENG GONDOK (*Eichhornia crassipes*) TERFERMENTASI DAN PAKAN KOMERSIAL TERHADAP PERTUMBUHAN BENIH IKAN NILA (*Oreochromis niloticus*)

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ABSTRAK

Penelitian ini bertujuan untuk mengetahui pengaruh pemberian campuran tepung eceng gondok (*Eichhornia crassipes*) terfermentasi dan pakan komersial terhadap pertumbuhan benih ikan nila (*Oreochromis niloticus*), menentukan formulasi campuran yang menghasilkan pertumbuhan terbaik, serta mengevaluasi pengaruhnya terhadap rasio konversi pakan (FCR) dan tingkat kelangsungan hidup (SR). Penelitian menggunakan metode eksperimen dengan Rancangan Acak Lengkap (RAL) yang terdiri atas tiga perlakuan dan lima ulangan, yaitu A (100% pakan komersial), B (85% pakan komersial + 15% tepung eceng gondok nonfermentasi), dan C (85% pakan komersial + 15% tepung eceng gondok terfermentasi). Benih ikan nila berukuran 4–6 cm dipelihara selama 30 hari. Parameter yang diamati meliputi pertumbuhan berat mutlak, pertumbuhan panjang mutlak, laju pertumbuhan spesifik (SGR), rasio konversi pakan (FCR), tingkat kelangsungan hidup (SR), kualitas air, serta kadar protein tepung eceng gondok. Data dianalisis menggunakan uji ANOVA satu arah yang dilanjutkan dengan uji Least Significant Difference (LSD), sedangkan data yang tidak memenuhi asumsi parametrik dianalisis menggunakan uji Welch, Brown-Forsythe, dan Kruskal-Wallis. Hasil penelitian menunjukkan bahwa fermentasi meningkatkan kadar protein tepung eceng gondok dari 16,3488% menjadi 17,6067%. Perlakuan C menghasilkan pertumbuhan terbaik dengan berat mutlak 9,34 g, panjang mutlak 3,82 cm, SGR 4,47%, dan FCR 1,66, sedangkan SR sebesar 92,00%. Hasil analisis menunjukkan bahwa perlakuan berpengaruh nyata terhadap pertumbuhan berat mutlak, panjang mutlak, dan SGR ($p<0,05$), tetapi tidak berpengaruh nyata terhadap FCR dan SR ($p>0,05$). Dengan demikian, penggunaan campuran 85% pakan komersial dan 15% tepung eceng gondok terfermentasi efektif meningkatkan pertumbuhan benih ikan nila dan berpotensi menjadi alternatif bahan baku pakan yang ekonomis serta ramah lingkungan.

Kata kunci: benih ikan nila, eceng gondok, fermentasi, pertumbuhan, pakan alternatif.

THE EFFECT OF A MIXTURE OF FERMENTED WATER HYACINTH (*Eichhornia crassipes*) MEAL AND COMMERCIAL FEED ON THE GROWTH OF NILE TILAPIA (*Oreochromis niloticus*) FRY

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ABSTRACT

This study aimed to determine the effect of a mixture of fermented water hyacinth (*Eichhornia crassipes*) meal and commercial feed on the growth of Nile tilapia (*Oreochromis niloticus*) fry, to identify the mixture formulation that produces the best growth, and to evaluate its effect on the feed conversion ratio (FCR) and survival rate (SR). The study employed an experimental method with a Completely Randomized Design (CRD) consisting of three treatments and five replications, namely A (100% commercial feed), B (85% commercial feed + 15% unfermented water hyacinth meal), and C (85% commercial feed + 15% fermented water hyacinth meal). Nile tilapia fry measuring 4–6 cm in length were reared for 30 days. The observed parameters included absolute weight growth, absolute length growth, specific growth rate (SGR), feed conversion ratio (FCR), survival rate (SR), water quality, and the protein content of the water hyacinth meal. The data were analyzed using a one-way ANOVA test followed by the Least Significant Difference (LSD) test, while data that did not meet the parametric assumptions were analyzed using the Welch, Brown-Forsythe, and Kruskal-Wallis tests. The results showed that fermentation increased the protein content of the water hyacinth meal from 16.3488% to 17.6067%. Treatment C resulted in the best growth, yielding an absolute weight of 9.34 g, an absolute length of 3.82 cm, an SGR of 4.47%, and an FCR of 1.66, with an SR of 92.00%. The analysis indicated that the treatments had a significant effect on absolute weight growth, absolute length growth, and SGR ($p < 0.05$), but had no significant effect on FCR and SR ($p > 0.05$). Thus, the use of a mixture of 85% commercial feed and 15% fermented water hyacinth meal is effective in enhancing the growth of Nile tilapia fry and has the potential to become an economical and environmentally friendly alternative feed ingredient.

Keywords: Alternative Feed, Fermentation, Growth, Nile Tilapia Fry, Water Hyacinth.