

RINGKASAN

Penelitian ini bertujuan untuk menganalisis pengaruh penambahan sumber karbon berupa tepung tapioka dalam sistem bioflok terhadap pertumbuhan dan sintasan ikan gurami (*Osphronemus goramy*). Permasalahan dalam budidaya ikan gurami meliputi pertumbuhan yang relatif lambat dan rendahnya efisiensi pakan akibat penurunan kualitas air pada sistem budidaya konvensional. Teknologi bioflok diterapkan sebagai alternatif budidaya karena mampu memperbaiki kualitas air dan menyediakan sumber nutrisi tambahan melalui aktivitas mikroorganisme heterotrof.

Penelitian dilaksanakan pada bulan Desember 2025 di Laboratorium IPA Terpadu Fakultas Sains dan Teknologi Universitas Nahdlatul Ulama Purwokerto menggunakan metode eksperimen dengan Rancangan Acak Lengkap (RAL). Perlakuan terdiri atas P1 tanpa penambahan tepung tapioka, P2 dengan penambahan 5%, P3 sebesar 10%, dan P4 sebesar 15%, masing-masing dengan tiga kali ulangan. Parameter yang diamati meliputi pertumbuhan bobot dan panjang mutlak, laju pertumbuhan spesifik (*Specific Growth Rate/SGR*), rasio konversi pakan (*Feed Conversion Ratio/FCR*), efisiensi pakan, sintasan (*Survival Rate/SR*), serta kualitas air. Data dianalisis menggunakan uji ANOVA dan dilanjutkan dengan uji Beda Nyata Terkecil (BNT).

Hasil penelitian menunjukkan bahwa penambahan tepung tapioka memberikan pengaruh terhadap pertumbuhan ikan gurami. Perlakuan terbaik diperoleh pada P2 dengan penambahan tepung tapioka sebesar 5% yang menghasilkan bobot mutlak tertinggi sebesar 8,67 g. Sementara itu, perlakuan P3 dan P4 menunjukkan penurunan pertumbuhan yang diduga akibat akumulasi bahan organik berlebih yang memengaruhi kualitas air dan metabolisme ikan. Secara keseluruhan, penambahan tepung tapioka sebesar 5% dalam sistem bioflok merupakan dosis paling efektif untuk meningkatkan pertumbuhan dan efisiensi budidaya ikan gurami.

Kata kunci: bioflok, ikan gurami (*Osphronemus goramy*), pertumbuhan, tepung tapioka, sintasan

SUMMARY

This study aimed to analyze the effect of adding tapioca flour as a carbon source in a biofloc system on the growth performance and survival rate of gouramy fish (*Osphronemus goramy*). The study was motivated by the relatively slow growth rate of gouramy fish and the low feed utilization efficiency caused by declining water quality in conventional aquaculture systems. Biofloc technology was applied as an alternative culture system because it is capable of improving water quality and providing additional natural nutrients through the activity of heterotrophic microorganisms.

The research was conducted in December 2025 at the Integrated Science Laboratory, Faculty of Science and Technology, Nahdlatul Ulama University of Purwokerto, using an experimental method with a Completely Randomized Design (CRD). The treatments consisted of four levels of tapioca flour addition, namely 0% (control), 5%, 10%, and 15%, with three replications for each treatment. The observed parameters included absolute weight gain, absolute length gain, *Specific Growth Rate* (SGR), *Feed Conversion Ratio* (FCR), feed efficiency, survival rate (SR), and water quality parameters. Data were analyzed statistically using Analysis of Variance (ANOVA) followed by the Least Significant Difference (LSD) test.

The results showed that the addition of tapioca flour in the biofloc system affected the growth performance of gouramy fish. The best treatment was obtained at 5% tapioca flour addition, which produced the highest absolute weight gain of 8.67 g. Higher concentrations of tapioca flour (10% and 15%) resulted in lower growth performance, presumably due to excessive organic matter accumulation that reduced water quality and disturbed fish metabolism. Overall, the addition of 5% tapioca flour in the biofloc system was considered the most effective treatment for improving the growth and culture efficiency of gouramy fish.

Keywords: *biofloc system, gouramy fish (Osphronemus goramy), growth, tapioca flour, survival rate*

