

**PENGARUH JENIS TANAMAN BERBEDA TERHADAP KUALITAS AIR
UDANG GALAH (*MACROBRACHIUM ROSENBERGII*) YANG
DIPELIHARA DENGAN SISTEM AKUAPONIK**

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ABSTRAK

Telah dilakukan penelitian tentang peranan tanaman sebagai biofilter untuk menjaga kualitas air media. Penelitian ini dilakukan dengan beberapa rangkaian kerja yang dimulai pada bulan Juni - Agustus 2022 di UPT Laboratorium Terpadu Unkhair Kota Ternate. Penelitian ini dirancang dengan menggunakan Rancangan Acak Lengkap (RAL) yang terdiri 3 perlakuan dan 3 ulangan selama 60 hari. Pengukuran dilakukan terhadap suhu, salinitas, DO dan pH, amoniak, nitrat dan nitrit pada setiap minggu. Estimasi dilakukan terhadap efektifitas biofilter tanaman terhadap ammonia (N) dan fosfor (P) pada setiap perlakuan, pertumbuhan mutlak dan sintasan (SR) udang galah dan dianalisis menggunakan ANOVA dengan uji F pada taraf kepercayaan 95%. Uji Fisher (LSD) dilakukan apabila perlakuan berpengaruh nyata terhadap peubah yang diukur ($P > 0,05$), sedangkan sintasannya signifikan berpengaruh ($P < 0,05$) Meskipun demikian, ketiga tanaman dapat digunakan sebagai biofilter dalam system akuaponik.

Kata Kunci : Biofilter, tanaman, akuaponik, limbah, udang galah

ABSTRACT

It has been studied how plants can act as biofilters to preserve the standard of media water. The UPT Unkhair Integrated Laboratory in Ternate City will be the site of this research, with work series beginning in June 2022 and lasting through August 2022. Three treatments and three replications were used in this study's completely randomized design (CRD), which lasted for 60 days. Temperature, salinity, DO and pH, ammonia, nitrate, and nitrite were all measured on a weekly basis. ANOVA with the F test and a 95% confidence level were used to estimate the efficiency of the plant biofilter against ammonia (N) and phosphorus (P) in each treatment, absolute growth, and survival (SR) of gigantic prawns. When the treatment had a significant impact on the measured variables ($P < 0.05$), Fisher's test (LSD) was applied. The analysis's findings demonstrated that N absorption from the giant prawn industry's waste did not differ between the three plant treatments. Regarding the three treatments' P absorption, pakchoi (0.725 mgL^{-1}) absorbed P more efficiently than celery (0.540 mgL^{-1}) and lettuce (0.186 mgL^{-1}) ($P < 0.05$). Additionally, there was a tendency for the study's ammonia concentration to decline. Survival had a significant influence ($P < 0.05$), although the absolute growth and specific growth rates of the three treatments did not ($P > 0.05$). However, all three plants can be utilized in aquaponic systems as biofilters.

Keyword: *Biofilter, plants, aquaponics, waste, giant prawns*