

INTISARI

**Pengaruh Dosis Pupuk Kotoran Burung Puyuh pada
Air Limbah Budidaya Lele terhadap Pertumbuhan Populasi
Daphnia magna (Straus, 1820)**

Penelitian ini bertujuan untuk mengetahui pertumbuhan populasi *Daphnia magna* yang dibudidayakan pada media air limbah budidaya lele yang diperkaya dengan pupuk kotoran burung puyuh. Air limbah budidaya lele berasal dari 25% air limbah budidaya lele ditambah dengan 75% air tawar. Penelitian menggunakan metode Rancangan Acak Lengkap yang terdiri dari empat perlakuan dan tiga ulangan. Perlakuan meliputi pemberian pupuk kotoran burung puyuh dengan dosis yaitu 0 g/L, 0,75 g/L, 1,5 g/L, dan 2,25 g/L. *D. magna* dibudidayakan selama 24 hari dengan kepadatan awal 20 ind./L dan waktu pemupukan setiap empat hari. Data yang diperoleh dianalisis menggunakan analisis varian dengan tingkat ketelitian 95%, jika hasil menunjukkan beda nyata maka dilanjutkan dengan *Duncan's Multiple Range Test*. Data kemudian diuji menggunakan polinomial ortogonal untuk mengetahui dosis pupuk kotoran burung puyuh optimal. Puncak populasi *D. magna* yang dihasilkan dari tiap-tiap perlakuan dosis pupuk 0 g/L, 0,75 g/L, 1,5 g/L, dan 2,25 g/L yaitu 248 ind./L (hari ke-11), 712 ind./L (hari ke-16), 676 ind./L (hari ke-18), dan 226 ind./L (hari ke-15). Dosis pupuk kotoran burung puyuh optimal adalah 1,12 g/L dengan kepadatan populasi *D. magna* sebesar 501 ind./L. Kandungan nutrisi *D. magna* tertinggi ditunjukkan oleh dosis pupuk 0,75 g/L meliputi kadar protein sebesar 57,15%, lemak sebesar 5,81%, karbohidrat sebesar 3,55%, abu sebesar 9,19%, dan serat kasar sebesar 24,28%.

Kata kunci: air limbah budidaya lele, *Daphnia magna*, laju pertumbuhan, populasi, pupuk kotoran burung puyuh

ABSTRACT

The Effect of Quail Manure Fertilizer Dose in Catfish Cultivation Wastewater on Population Growth of *Daphnia magna* (Straus, 1820)

This study aims to determine the population growth of *Daphnia magna* cultivated on catfish cultivation wastewater media enriched with quail manure fertilizer. Catfish cultivation wastewater comes from 25% catfish cultivation wastewater and 75% fresh water. The study used a completely randomized design method consisting of four treatments and three replicates. Treatments included the application of quail manure with doses of 0 g/L, 0.75 g/L, 1.5 g/L, and 2.25 g/L. *D. magna* was cultivated for 24 days with an initial density of 20 ind./L and fertilization time every four days. The data obtained were analyzed using analysis of variance with an accuracy level of 95%, if the results showed significant differences then continued with Duncan's Multiple Range Test. Data were then tested using orthogonal polynomial to determine the optimal dose of quail manure fertilizer. The peak population of *D. magna* produced from each fertilizer dose treatment of 0 g/L, 0.75 g/L, 1.5 g/L, and 2.25 g/L were 248 ind./L (day 11), 712 ind./L (day 16), 676 ind./L (day 18), and 226 ind./L (day 15). The optimal quail manure fertilizer dose was 1.12 g/L with a *D. magna* population density of 501 ind./L. The highest nutrient content of *D. magna* was shown by the fertilizer dose of 0.75 g/L including contained 57.15% protein, 5.81% fat, 3.55% carbohydrate, 9.19% ash, and 24.28% crude fiber.

Keywords: catfish cultivation wastewater, *Daphnia magna*, growth rate, population, quail manure