

## **Pengaruh zeolit, karbon aktif, dan minyak cengkeh pada transportasi tertutup benih udang galah**

### **Effect of zeolite, active carbon, and clove oil in closed transportation of giant freshwater prawn juvenile**

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#### **ABSTRACT**

The objective of this study was to determine the effect of zeolite, active carbon, and clove oil on water quality (dissolved oxygen/DO, total ammonia nitrogen/TAN, temperature) and biological quality (glucose concentration, total protein, survival/SR) of giant freshwater prawn juvenile (*Macrobrachium rosenbergii*) in closed transportation system. The study was conducted in laboratory scale with a completely randomized design. The biota used was juvenile giant prawn with an average weight  $0.407 \pm 0.005$  g/ind. The type and dose of additive used were A (20 g/L zeolite + 10 g/L active carbon + 14  $\mu$ L/L clove oil), B (20 g/L zeolite + 10 g/L active carbon + 9.33  $\mu$ L/L clove oil), C (20 g/L zeolite + 10 g/L active carbon + 4.67  $\mu$ L/L clove oil), D (20 g/L zeolite + 10 g/L active carbon + 1.87  $\mu$ L/L clove oil), K+ (20 g/L zeolite + 10 g/L active carbon), and K- (without material addition). The glucose concentration of treatment B and C significantly different with treatment A, D, K+, K-. Total protein of treatment A, B, C and K+ significantly different with treatment K-. DO, TAN, and temperature of the transportation media were still in the suitable concentration for living of giant prawn. The highest survival of the prawn was observed in group C. The result showed the combination of 20 g/L zeolite + 10 g/L active carbon + 4.67  $\mu$ L/L clove oil in the water is suitable for closed transportation system for juvenile giant freshwater prawn.

Keywords: glucose concentration, total protein, DO, TAN, temperature

#### **ABSTRAK**

Penelitian ini bertujuan untuk menentukan pengaruh pemberian zeolit, karbon aktif, dan minyak cengkeh terhadap kualitas air (*dissolved oxygen/DO*, *total ammonia nitrogen/TAN*, suhu) dan kualitas biologi (konsentrasi glukosa, total protein, tingkat kelangsungan hidup/TKH) benih udang galah (*Macrobrachium rosenbergii*) pada sistem transportasi tertutup. Penelitian dilakukan pada skala laboratorium dengan rancangan acak lengkap. Biota yang digunakan yaitu benih udang galah dengan bobot rata-rata  $0,407 \pm 0,005$  g/ekor. Dosis bahan tambahan yang digunakan adalah: A (20 g/L zeolit + 10 g/L karbon aktif + 14  $\mu$ L/L minyak cengkeh), B (20 g/L zeolit + 10 g/L karbon aktif + 9,33  $\mu$ L/L minyak cengkeh), C (20 g/L zeolit + 10 g/L karbon aktif + 4,67  $\mu$ L/L minyak cengkeh), D (20 g/L zeolit + 10 g/L karbon aktif + 1,87  $\mu$ L/L minyak cengkeh), K+ (20 g/L zeolit + 10 g/L karbon aktif), dan K- (tanpa bahan tambahan). Konsentrasi glukosa perlakuan B dan C berbeda nyata dengan perlakuan A, D, K+, K-. Total protein perlakuan A, B, C, D, dan K+ berbeda nyata dengan perlakuan K-. DO, TAN dan suhu media transportasi masih sesuai dengan kehidupan udang galah. Tingkat kelangsungan hidup transportasi tertinggi yaitu pada perlakuan C. Hasil menunjukkan bahwa kombinasi 20 g/L zeolit + 10 g/L karbon aktif + 4,67  $\mu$ L/L minyak cengkeh adalah perlakuan yang sesuai untuk transportasi tertutup benih udang galah.

Kata kunci: konsentrasi glukosa, total protein, DO, TAN, suhu