

## INTISARI

### PERTUMBUHAN DAN KUALITAS AIR PEMELIHARAAN UDANG VANAME (*Litopenaeus vannamei* Boone, 1931) SKALA LABORATORIUM PADA PADAT TEBAR BERBEDA

Penelitian ini bertujuan untuk mengetahui pengaruh padat tebar berbeda terhadap pertumbuhan dan kualitas air pemeliharaan udang vaname (*Litopenaeus vannamei*, Boone 1931) skala laboratorium. Penelitian ini dilaksanakan di Unit Kolam Percobaan Stasiun Penelitian Departemen Perikanan, Fakultas Pertanian, Universitas Gadjah Mada. Penelitian dilakukan dengan metode Rancangan Acak Lengkap yang terdiri dari 4 perlakuan dan 3 ulangan. Perlakuan yang diberikan berupa padat tebar 100 ekor/m<sup>3</sup>, 150 ekor/m<sup>3</sup>, 200 ekor/m<sup>3</sup>, dan 250 ekor/m<sup>3</sup>. Udang vaname diberikan pakan dua kali sehari dengan pakan komersil dengan dosis berdasarkan biomassa udang. Pemberian probiotik dilakukan setiap 3 hari sekali dengan dosis berdasarkan berat pakan. Probiotik yang digunakan merupakan probiotik yang mengandung *Lactococcus garvieae* dan *Bacillus* sp.. Parameter yang diamati adalah pertumbuhan dan kualitas air. Data pertumbuhan dianalisis menggunakan *Analysis of Varians* (ANOVA) dan jika antar perlakuan terdapat beda nyata dilakukan uji lanjut menggunakan uji *Duncant's Multiple Range Test* (DMRT). Data kualitas air diinterpretasikan secara deskriptif. Padat tebar 100 ekor/m<sup>3</sup> menghasilkan nilai pertumbuhan dan kualitas air terbaik dengan nilai pertumbuhan berat mutlak sebesar 1,02 g; pertumbuhan berat spesifik sebesar 0,012%; pertumbuhan panjang mutlak sebesar 1,36 cm; pertumbuhan panjang spesifik sebesar 0,0059%; sintasan sebesar 92% dan nisbah konversi pakan sebesar 1,04. Kualitas air yang diperoleh yaitu suhu 25,1 – 27,4 °C; pH 7,6 – 7,9; salinitas 30 – 33 ppt; alkalinitas 119 – 178 mg/L; oksigen terlarut 2,3 – 2,4 mg/L; CO<sub>2</sub> bebas 22,5 – 34,8 mg/L; dan amonia 0,02 – 0,1 mg/L.

Kata kunci: kualitas air, padat tebar, pertumbuhan, probiotik, udang vaname

## ABSTRACT

### GROWTH AND WATER QUALITY OF WHITELEG SHRIMP (*Litopenaeus vannamei* Boone, 1931) AT LABORATORIUM SCALE WITH DIFFERENT STOCKING DENSITIES

This research aims to determine the effect of different stocking densities on the growth and water quality of whiteleg shrimp (*Litopenaeus vannamei*, Boone 1931) at laboratory scale. This research was conducted at the Experimental Pond Unit of the Research Station, Department of Fisheries, Faculty of Agriculture, Gadjah Mada University. A Complete Randomized Design with four treatments and three replications was used for this experimental research. The treatments given were stocking densities of 100 individuals/m<sup>3</sup>, 150 individuals/m<sup>3</sup>, 200 individuals/m<sup>3</sup>, and 250 individuals/m<sup>3</sup>. Whiteleg shrimp are fed twice a day with commercial feed with dose based on biomass. Probiotics were given every 3 days with adose based on the weight of the feed. The probiotics used were containing *Lactococcus garvieae* and *Bacillus* sp. The parameters observed were growth and water quality. Growth data were analyzed using Analysis of Variance (ANOVA) and if there were significant differences between treatments, further tests were carried out using Duncan's Multiple Range Test (DMRT). Water quality data was interpreted descriptively. The stocking density 100 individuals/m<sup>3</sup> produces best growth value and water quality which resulted absolute weight of 1.02 g; specific weight growth 0.012%; absolute length growth 1.36 cm; the specific length growth 0.0059%; the survival rate 92% and the feed conversion ratio 1.04. The results of water temperatures 25.17 – 27.37 °C; pH 7.64 – 7.97; salinity 30 – 33 ppt; alkalinity 119 – 178 mg/L; dissolved oxygen 2.27 – 2.37 mg/L; free CO<sub>2</sub> 22.53 – 34.8 mg/L and ammonia 0.02 – 0.13 mg/L.

Keywords: growth, probiotics, stocking density, water quality, whiteleg shrimp