

## Intisari

Probiotik merupakan suplemen tambahan yang dapat memberikan manfaat bagi hewan inang, salah satunya sebagai penstimulasi sistem imun pada ikan. Penelitian ini bertujuan untuk mengetahui pengaruh aplikasi probiotik secara oral terhadap respon imun non-spesifik seluler nila (*Oreochromis sp.*) yang dipelihara dengan aerasi *microbubble*. Penelitian ini menggunakan Rancangan Acak Lengkap (RAL) dengan 4 perlakuan dan 3 ulangan, yaitu kontrol negatif (tanpa penambahan probiotik), penambahan probiotik dosis  $10^4$  CFU/g pakan, penambahan probiotik dosis  $10^5$  CFU/g pakan dan penambahan probiotik dosis  $10^6$  CFU/g pakan. Ikan dipelihara selama 100 hari dan pengujian parameter dilakukan pada hari ke-50 dan 100. Pemberian pakan dilakukan dua kali sehari sebanyak 3% biomassa. Parameter yang diamati meliputi aktivitas fagositosis, indeks fagositosis, *superoxide dismutase* (SOD), ledakan respirasi ekstraseluler, diferensiasi leukosit, hematokrit dan leukokrit serta kualitas air. Hasil penelitian menunjukkan pemberian probiotik dengan dosis berbeda tidak dapat meningkatkan parameter imun non-spesifik seluler ikan nila yang dipelihara dengan aerasi *microbubble*. Tidak terdapat beda nyata antar perlakuan dosis probiotik yang berbeda. Penelitian ini menunjukkan bahwa pemberian dosis probiotik untuk ikan nila yang dipelihara dengan aerasi *microbubble* perlu dikaji lebih lanjut.

Kata kunci : *microbubble*, nila, oral, pertahanan non-spesifik seluler, probiotik

### *Abstract*

Probiotics are additional supplements that can provide benefits for host animals, one of them is stimulating the immune system in fish. The purpose of this study was to determine the effect of oral probiotic application on the non-specific cellular immune response of tilapia (*Oreochromis sp.*) maintained by microbubble aeration. This study used Completely Randomized Design (CRD) with 4 treatments and 3 replications. The treatments were negative control (without the addition of probiotics), addition of probiotics at  $10^4$  CFU/ g feed, addition of probiotics at  $10^5$  CFU/ g feed and addition of probiotics at  $10^6$  CFU/ g feed. The fish were reared for 100 days and the immune parameter tests were performed on days 50 and 100. Feeding was done twice daily with a feeding rate of 3% biomass. The observed parameters included phagocytic activity, phagocytosis index, superoxide dismutase (SOD), respiratory burst, leukocyte differentiation, hematocrit and leukocrit and water quality. The results showed that the administration of probiotics with different doses did not improve the non-specific cellular immune parameters of tilapia maintained by microbubble aeration. There was no significant difference between the treatment of different probiotic doses. This study shows that administration of probiotic doses for tilapia which is maintained by microbubble aeration needs to be studied further.

Keywords: microbubble, non-specific cellular immune, oral, probiotics, tilapia