

## ABSTRAK

### EFEKTIVITAS PEMBERIAN KOMBINASI IMUNOSTIMULAN *Saccharomyces* sp. DAN PROBIOTIK *Bacillus* sp. TERHADAP RESPON IMUN NONSPESIFIK DAN KELANGSUNGAN HIDUP IKAN NILA, *Oreochromis niloticus* (Linnaeus, 1758)

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Ikan nila (*Oreochromis niloticus*) merupakan komoditas ikan air tawar dunia yang toleran terhadap kondisi budi daya yang kurang baik tetapi rentan terserang penyakit yang disebabkan oleh *Aeromonas hydrophila*. Pencegahannya dapat memberikan imunostimulan berupa campuran probiotik pada pakan seperti *Saccharomyces* sp. dan *Bacillus* sp. Penelitian ini bertujuan untuk menguji kinerja dari kombinasi imunostimulan *Saccharomyces* sp. dan probiotik *Bacillus* sp. dengan dosis yang berbeda terhadap tingkat kelangsungan hidup ikan nila yang diuji tantang dengan menggunakan *Aeromonas hydrophila*. Penelitian ini dilakukan di Instalasi Pengendalian Penyakit Ikan, Depok, Jawa Barat pada September-Desember 2020. Rancangan percobaannya terdiri dari lima perlakuan dengan tiga ulangan. Setiap perlakuan diamati selama 30 hari untuk melihat gejala klinis, diferensial leukosit, aktifitas fagositosis dan tingkat kelangsungan hidup ikan. Hasil penelitian menunjukkan perlakuan pakan komersial yang dicampur *Saccharomyces* sp. 1,5% + *Bacillus* sp. 1% dapat meningkatkan kinerja respon imun nonspesifik dan tingkat kelangsungan hidup ikan nila yang diinfeksi dengan *Aeromonas hydrophila* memberikan pengaruh yang nyata ( $P < 0,05$ ) terhadap parameter pengamatan. Berdasarkan hasil penelitian, maka perlu dilakukan penelitian lebih lanjut mengenai pengaplikasian kombinasi *Saccharomyces* sp. 1,5 % dan *Bacillus* sp. 1 % dalam budi daya ikan nila.

**Kata kunci :** *Aeromonas hydrophila*, *Bacillus* sp., diferensial leukosit, probiotik, respon imun, *Saccharomyces* sp., tingkat kelangsungan hidup

## ABSTRACT

### THE EFFECTIVITY OF IMMUNOSTIMULANT COMBINATION *Saccharomyces* sp. AND PROBIOTIC *Bacillus* sp. FOR NONSPECIFIC IMMUNE RESPONSE AND SURVIVAL OF NILE TILAPIA, *Oreochromis niloticus* (Linnaeus, 1758)

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Nile tilapia (*Oreochromis niloticus*) is a global freshwater fish commodity that has tolerant of unfavorable cultivation conditions but vulnerable to disease caused by *Aeromonas hydrophila*. The prevention could be provided by immunostimulant mixture of probiotics in feed such as *Saccharomyces* sp. and *Bacillus* sp. The study intended to examine the performance of the combination of immunostimulant *Saccharomyces* sp. and probiotic *Bacillus* sp. with different doses on the survival rate of Nile tilapia which was infected using *Aeromonas hydrophila*. This study was conducted at Research Installation for Fish Disease Control, Depok, West Java in September-December 2020. The experimental design had consisted of five treatments with three replications. Each treatment was observed for 30 days to see clinical symptoms, leucocyte differential, phagocytic activity and survival rate. The results showed that the treatment of commercial feed mixed with *Saccharomyces* sp. 1.5% + *Bacillus* sp. 1% could be improved the performance of the nonspecific immune response and the survival rate of Nile tilapia infected with *Aeromonas hydrophila* and gave a significant effect ( $P < 0.05$ ) on the observed parameters. Based on the results of the study, it was necessary to conduct further research on the application of the combination of *Saccharomyces* sp. 1.5% and *Bacillus* sp. 1% in tilapia cultivation.

**Key words :** *Aeromonas hydrophila*, *Bacillus* sp., immune response, leucocyte differential, probiotics, *Saccharomyces* sp., survival rate