ABSTRAK

RESPON IMUN NON-SPESIFIK IKAN GABUS, *Channa striata* (BLOCH, 1793) YANG DIBERI PAKAN BERBASIS PROTEIN NABATI TERHADAP INFEKSI BAKTERI *Aeromonas hydrophila*

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Pakan buatan berbahan dasar tepung ikan dapat digantikan dengan pakan berbasis nabati yaitu dengan mensubtitusi sumber protein tepung ikan dengan *distillers dried grain with solubles* (DDGS) dan taurin. Penambahan probiotik diperlukan untuk meningkatkan kelangsungan hidup dan performa kesehatan ikan gabus. Tujuan dari penelitian ini untuk mengevaluasi pengaruh pemberian DDGS dan taurin dalam formulasi pakan tanpa tepung ikan dengan penambahan probiotik *Bacillus* sp. terhadap respon imun non-spesifik ikan gabus (*Channa striata*). Rancangan penelitian yang digunakan yaitu rancangan acak lengkap (RAL) yang terdiri dari 6 perlakuan dengan masing-masing 3 ulangan: P1 (DDGS 0%+taurin 0%) P2 (DDGS 5%+taurin 0,5%) P3 (DDGS 5%+taurin 0%) P4 (DDGS 10%+taurin 0,5%) P5 (DDGS 15%+taurin 1%) dan P6 (DDGS 20%+taurin 1,5%). Probiotik *Bacillus* sp. diberikan pada semua perlakuan sebanyak 10 ml/kg pakan. Ikan uji yang digunakan memiliki rerata awal panjang 9,60±0,05 cm dan berat 7,16±0,04 gram dipelihara selama 60 hari. 5 ekor ikan disampling darah setelah diinfeksi bakteri 0,1 mL/ekor *A. hydrophila* dengan kepadatan bakteri 10^6 CFU/mL diambil pada H64, H67, H70 untuk analisis respon imun non-spesifik. Variabel penelitian yang diamati yaitu kadar hematokrit, total eritrosit, total leukosit, aktivitas fagositosis, indeks fagositosis, tingkat kelangsungan hidup, *relative percent survival* dan gejala klinis. Hasil penelitian menunjukkan bahwa perlakuan yang diberikan memberikan pengaruh yang sama terhadap kadar hematokrit, leukosit, indeks fagositosis, dan tingkat kelangsungan hidup sebelum dan setelah infeksi bakteri *Aeromonas hydrophila*. Penelitian ini membuktikan bahwa penambahan DDGS dan taurin dalam formulasi pakan tanpa tepung ikan dengan penambahan probiotik *Bacillus* sp. dapat meningkatkan respon imun non-spesifik ikan gabus (*Channa striata*).

Kata kunci: *distillers dried grains with solubles* (DDGS), ikan gabus, respon imun non-spesifik, taurin.

ABSTRACT

NON-SPECIFIC IMMUNE RESPONSE OF SNAKEHEAD FISH, *Channa striata* (BLOCH, 1793) WHICH WAS FEED WITH PLANT-BASED PROTEIN FISH FEED AGAINST *Aeromonas hydrophila* BACTERIAL INFECTION

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Formulated feed made from fish meal can be replaced with plant protein-based feed, namely by substituting the fish meal protein source with distillers dried grain with solubles (DDGS) and taurine. The addition of probiotics is needed to improve the survival and health performance of snakehead fish. The aim of this study was to evaluate the effect of providing DDGS and taurine in feed formulations without fish meal with the addition of the probiotic *Bacillus* sp. against the non-specific immune response of snakehead fish (*Channa striata*). The research design used was a completely randomized design (CRD) consisting of 6 treatments with 3 replications each: P1 (DDGS 0%+taurine 0%) P2 (DDGS 5%+taurine 0.5%) P3 (DDGS 5%+taurine 0%) P4 (DDGS 10%+taurine 0.5%) P5 (DDGS 15%+taurine 1%) and P6 (DDGS 20%+taurine 1.5%). Probiotic *Bacillus* sp. given to all treatments as much as 10 ml/kg feed. The test fish used had an initial average length of 9,60±0,05 cm and a weight of 7,16 ± 0,04 grams and were kept for 60 days. 5 fish were blood sampled after being infected with the bacteria 0.1 mL/head *A. hydrophila* with density of 10^6 CFU/mL taken on H64, H67, H70 for analysis of non-specific immune responses. The research variables observed were hematocrit levels, total erythrocytes, total leukocytes, phagocytic activity, phagocytosis index, survival rate, relative percent survival and clinical symptoms. The results of the study showed that the treatment given provided the same effects for hematocrit levels, leukocytes, phagocytosis index, and survival rate before and after infection with the *A. hydrophila*. This research proves that the addition of DDGS and taurine in feed formulations without fish meal with the addition of the probiotic *Bacillus* sp. can increase the non-specific immune response of snakehead fish (*Channa striata*).

Keywords: Distillers dried grains with solubles (DDGS), snakehead fish, non-specific immune response, taurine.