

Windy Seftiarini, 2020, Pengaruh Pemberian Pakan Suplemen Probiotik Terhadap Kadar Malondialdehid dan *Gonadosomatic Index* Ikan Nila (*Oreochromis niloticus*) yang Terpapar Tembaga. Skripsi ini dibawah bimbingan Dr. Alfiah Hayati, M. Kes. dan Drs. Agus Supriyanto, M. Kes. Departemen Biologi, Fakultas Sains dan Teknologi, Universitas Airlangga, Surabaya.

ABSTRAK

Tujuan penelitian ini adalah untuk mengetahui pengaruh pemberian pakan suplemen probiotik terhadap kadar malondialdehid dan *gonadosomatic index* ikan nila (*Oreochromis niloticus*) yang terpapar tembaga. Dua puluh empat ikan nila jantan (berat 110 - 130 gram) dibagi menjadi delapan kelompok perlakuan, yaitu empat variasi konsentrasi tembaga (0; 0,75; 1,5; dan 3 ppm) dan dua variasi pakan (pakan tanpa probiotik dan pakan probiotik *Lactic Acid Bacteria*) dengan 3 kali replikasi. Probiotik *Lactic Acid Bacteria* (LAB) diberikan satu kali setiap hari selama 14 hari. Kadar malondialdehid (MDA) dan *gonadosomatic index* (GSI) diperiksa pada akhir penelitian. Pengukuran kadar malondialdehid menggunakan metode *Thiobarbituric acid reactive substance* (TBARS). Hasil penelitian menunjukkan bahwa pada ikan nila yang terpapar tembaga, terdapat peningkatan kadar malondialdehid yang signifikan, sedangkan penambahan probiotik LAB dapat menurunkan secara signifikan kadar malondialdehid ikan nila akibat paparan tembaga. *Gonadosomatic index* tidak terpengaruh oleh penambahan probiotik LAB setelah paparan tembaga. Oleh karena itu, dapat disimpulkan bahwa semakin tinggi konsentrasi logam berat tembaga di perairan dapat meningkatkan kadar malondialdehid ikan nila dan pakan suplemen probiotik mampu mengurangi stres oksidatif dan berpotensi mengurangi toksisitas logam berat.

Kata kunci: Tembaga, Probiotik LAB, Malondialdehid, *Gonadosomatic index*

Windy Seftiarini, 2020, Effect of Probiotic Supplements Feeding on Malondialdehyde Levels and Gonadosomatic Index of Tilapia (*Oreochromis niloticus*) Exposed to Copper. This script is guided by Dr. Alfiah Hayati, M. Kes. and Drs. Agus Supriyanto, M. Kes. Department of Biology, Faculty of Science and Technology, Airlangga University, Surabaya.

ABSTRACT

This research aimed to determine the effects of probiotic supplements feed on malondialdehyde levels and gonadosomatic index of tilapia (*Oreochromis niloticus*) exposed to copper. Twenty-four male tilapia (average weight 110 - 130 gram) are divided into eight treatment groups, four copper concentration variation (0; 0,75; 1,5 and 3 ppm) and two variation of feed diets (commercial feed and probiotics Lactic Acid Bacteria feed) with 3 replications. Probiotics Lactic Acid Bacteria (LAB) feed are administered once daily for 14 days. Malondialdehyde (MDA) levels and gonadosomatic index (GSI) values were examined at the end of the study. Measurement of malondialdehyde levels using Thiobarbituric acid reactive substance (TBARS) method. The results show that in copper-exposed fishes, there is a significant increase in malondialdehyde levels, whereas the addition of LAB probiotics can significantly decrease malondialdehyde levels of fish after exposure to copper. Gonadosomatic index was not affected by the addition of LAB due to copper exposure. Therefore, it can be concluded that a higher concentration of heavy metal copper can increase malondialdehyde levels and probiotics supplementation was able to alleviate oxidative stress and has the potential to reduce the toxicity of heavy metals.

Keywords: Copper, LAB Probiotic, Malondialdehyde, Gonadosomatic Index