PENGARUH INSEKTISIDA KLORPIRIFOS TERHADAP STRUKTUR HISTOLOGI INTESTINUM IKAN WADER PARI (*Rasbora lateristriata* Bleeker, 1854)

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INTISARI

Di Indonesia penggunaan pestisida untuk memberantas hama guna meningkatkan produktivitas hasil pertanian umum dilakukan. Salah satu insektisida yang sering digunakan yaitu klorpirifos. Namun, penggunaan insektisida di bidang pertanian menimbulkan dampak negatif seperti pencemaran lingkungan, serta kematian organisme non-target seperti ikan. Ikan wader pari (*Rasbora lateristriata* Bleeker, 1854) merupakan jenis ikan air tawar yang banyak hidup di sawah atau sungai serta dapat dijadikan sebagai salah satu indikator pencemaran perairan. Tujuan dari penelitian ini adalah untuk mengetahui struktur histologis intestinum ikan wader pari, mengetahui pengaruh histopatologis intestinum ikan wader pari yang terpapar insektisida klorpirifos, serta mengetahui pengaruh paparan insektisida klorpirifos terhadap jumlah sel goblet. Pertama, dilakukan uji pendahuluan dan dilanjutkan uji sebenarnya dengan konsentrasi 0,001; 0,005; dan 0,01 ppm. Pada setiap tempat perlakuan digunakan 5 ekor ikan dengan 3 kali ulangan. Ikan kemudian dipaparkan selama 7 hari (168 jam) dan diberikan pakan 2 kali sehari, pembersihan kotoran, dan penggantian air konsentrasi setiap hari. Frekuensi bukaan operkulum dan *heart rate*, perilaku ikan, serta kualitas air diukur. Ikan yang masih hidup sampai hari terakhir pemaparan kemudian dibuat preparat histologis intestinum dengan metode paraffin dan pewarnaan *Haematoxylin Eosin* (HE), *Mallory Acid Fuchsin* (MAF), *Periodic Acid Schiff* (PAS) untuk pengamatan sel goblet. Hasil menunjukkan bahwa struktur histologis intestinum ikan wader pari terdiri dari tunika mukosa, tunika submukosa, tunika muskularis, dan tunika serosa. Selanjutnya, klorpirifos berpengaruh signifikan terhadap frekuensi jumlah sel goblet. Sedangkan pada pengamatan histologis intestinum didapatkan hasil bahwa ikan wader pari mengalami kerusakan pada bagian intestinum berupa edema, vakuolisasi, bengkak keruh, hemoragi, lisis, dan fusi vili.

Kata kunci : Klorpirifos, Histologi, Intestinum, Wader Pari

THE EFFECT OF CHLORPYRIFOS INSECTICIDE ON THE HISTOLOGY STRUCTURE OF WADER PARI FISH INTESTINE (*Rasbora lateristriata* Bleeker, 1854)

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ABSTRACT

In Indonesia, the use of pesticides to eradicate pests in order to increase productivity of agricultural products is very common. Chlorpyrifos is one of commonly used insecticides. However, the use of insecticides in agriculture has negative impacts including environmental pollution, as well as lethal effect to non-target organisms such as fish. Wader pari fish (*Rasbora lateristriata* Bleeker, 1854) is a type of freshwater fish that lives in rice fields or rivers and can be used as an indicator of water pollution. The purpose of this study was to determine the intestinal histological structure, the histopathological effect of chlorpyrifos on intestine, and population number of goblet cells, respectively. The treatment concentration of 0.001; 0.005; and 0.01 ppm were determined by preliminary trial. Five fish were set on each treatment with 3 replications. The fish were then exposed for 7 days (168 hours) and were fed 2 times a day, water quality were monitored, meanwhile the aquarium were cared and cleaned every day. Operculum opening frequency, heart rate, and fish behavior were measured. The fish were still alive until the last day of exposure were then made intestinal histological preparations using the paraffin method and staining with Haematoxylin Eosin (HE), Mallory Acid Fuchsin (MAF), Periodic Acid Schiff (PAS) for observation of goblet cells. The results showed that the histological structure of the wader pari intestine consisted of mucosal tunica, submucosal tunica, muscularis tunica, and serous tunica. Furthermore, chlorpyrifos has a significant effect on population number of goblet cells. Meanwhile, on the intestinal histological observations, it was found that the wader pari fish was damaged in the intestinal tract in the form of edema, vacuolization, cloudy swelling, hemorrhage, lysis, and fusion of vili.

Key words : Chlorpyrifos, Histology, Intestine, Wader Pari