

ABSTRAK

PEMBERIAN TAMBAHAN PAKAN NABATI DAUN PEPAYA (*Carica papaya* L.) SEBAGAI ANTIBIOTIK ALAMI TERHADAP KADAR LEUKOSIT IKAN GURAMI (*Osphronemus gouramy*) YANG DIINFEKSI BAKTERI (*Aeromonas hydrophila*)

Oleh

FADHILAH LAILLATUL ZAHRA

Budidaya ikan air tawar saat ini menghadapi tantangan penyakit akibat kerusakan lingkungan, salah satunya infeksi bakteri *Aeromonas hydrophila*. Pemberian antibiotik kimia secara terus menerus dapat menimbulkan resistensi, sehingga dibutuhkan alternatif alami seperti daun pepaya (*Carica papaya* L.) yang mengandung senyawa aktif antimikroba, proteolitik, dan imunomodulator untuk meningkatkan sistem kekebalan tubuh. Penelitian ini bertujuan untuk mengetahui pengaruh pemberian tambahan pakan nabati daun pepaya sebagai antibiotik alami terhadap kadar leukosit dan diferensial leukosit ikan gurami (*Osphronemus gouramy*) yang diinfeksi *A. hydrophila*, serta untuk mengetahui senyawa yang terkandung dalam larutan daun pepaya dengan uji FTIR. Metode yang digunakan adalah metode eksperimen dengan Rancangan Acak Lengkap (RAL), terdiri atas 6 perlakuan: KN, K(-) (Kontrol Negatif), K(+) (Kontrol Positif), P1 (16 ml/kg), P2 (18 ml/kg), P3 (20 ml/kg) masing-masing dengan 3 ulangan. Parameter utama yang diamati adalah jumlah leukosit (sel/mm^3) dan diferensial (limfosit, monosit, dan neutrofil). Parameter penunjang, yaitu kualitas air (suhu, DO, dan pH). Data yang diperoleh pada saat penelitian berupa kadar leukosit dan diferensial leukosit (limfosit, monosit, dan neutrofil) dianalisis menggunakan ANOVA dan uji lanjut Beda Nyata Terkecil (BNT) pada taraf 5%. Hasil analisis FTIR larutan daun pepaya terbukti mengandung senyawa alkaloid, flavonoid, saponin dan tanin. Hasil penelitian menunjukkan bahwa pemberian larutan daun pepaya berpengaruh nyata terhadap peningkatan kadar leukosit ikan gurami pada konsentrasi P3 (20 ml/kg), tetapi tidak berpengaruh nyata terhadap diferensial leukosit (limfosit, monosit, neutrofil). Kualitas air berada dalam kisaran normal diantaranya suhu ($25,7^{\circ}\text{C}$ - $26,3^{\circ}\text{C}$), pH (7,56-8,01), dan DO (5.55 ppm - 5.72 ppm).

Kata kunci: Daun pepaya (*Carica papaya* L.), Ikan gurami (*Osphronemus gouramy*), Leukosit

ABSTRACT

THE ADDITION OF PAPAYA LEAF (*Carica papaya* L.) AS NATURAL ANTIBIOTIC IN THE DIET ON THE LEUKOCYTE LEVELS OF GOURAMI (*Osphronemus gouramy*) INFECTED WITH *Aeromonas hydrophila*

By

FADHILAH LAILLATUL ZAHRA

Freshwater fish farming currently faces disease challenges due to environmental degradation, one of which is infection by the bacterium *Aeromonas hydrophila*. Continuous use of chemical antibiotics can lead to resistance; therefore, natural alternatives are needed, such as papaya leaves (*Carica papaya* L.), which contain active antimicrobial, proteolytic, and immunomodulatory compounds to enhance the immune system. This study aimed to determine the effect of supplementing fish feed with papaya leaves as a natural antibiotic on the leukocyte count and leukocyte differential of giant gourami (*Osphronemus gouramy*) infected with *A. hydrophila*, as well as to identify the compounds contained in papaya leaf extract using FTIR analysis. The study employed an experimental method with a Completely Randomized Design (CRD), consisting of six treatments: KN, K(-) (Negative Control), K(+) (Positive Control), P1 (16 ml/kg), P2 (18 ml/kg), and P3 (20 ml/kg), each with three replications. The main parameters observed were total leukocyte count (cells/mm³) and differential leukocytes (lymphocytes, monocytes, and neutrophils). Supporting parameters included water quality (temperature, DO, and pH). Data on leukocyte counts and leukocyte differential (lymphocytes, monocytes, and neutrophils) were analyzed using ANOVA followed by the Least Significant Difference (LSD) test at a 5% significance level. FTIR analysis of papaya leaf extract confirmed the presence of alkaloids, flavonoids, saponins, and tannins. The results showed that papaya leaf extract significantly increased the leukocyte count of giant gourami at the P3 concentration (20 ml/kg) but had no significant effect on leukocyte differential (lymphocytes, monocytes, neutrophils). Water quality parameters remained within the normal range, including temperature (25.7°C–26.3°C), pH (7.56–8.01), and DO (5.55–5.72 ppm).

Keywords: Papaya leaf (*Carica papaya* L.), Gourami (*Osphronemus gouramy*), Leukocytes