PENGARUH PEMBERIAN EKSTRAK KULIT BAWANG MERAH (*Allium cepa L*) TERHADAP DAYAHAMBAT BAKTERI *Aeromonas hidrophilla* PENYEBAB PENYAKIT PADA IKAN SECARA *in vitro*

Oleh

Andi Welly Wiliandhana Pranata, NIM 2013111004

Program Studi Akuakultur

ABSTRAK

Aeromonas hydrophila merupakan bakteri Gram negatif yang patogen bagi perikanan, menyebabkan penyakit seperti hemorrhagic septicemia atau *Motile Aeromonas Septicemia* (MAS) pada beragam spesies ikan air tawar. Kulit bawang merah (*Allium cepa L*.) berpotensi sebagai antibakteri karena kandungan senyawa flavonoidnya. Penelitian ini bertujuan mengkaji perbandingan aktivitas antibakteri ekstrak etanol 99% kulit bawang merah (*Allium cepa L*.) pada berbagai konsentrasi (5%, 10%, 15%, 20%, dan 25%) terhadap pertumbuhan *Aeromonas hydrophila*, dengan Tetrasiklin sebagai kontrol. Uji aktivitas antibakteri dilakukan menggunakan metode difusi cakram selama 24 jam pada suhu 37°C, dengan mengukur diameter zona hambat yang terbentuk. Hasil penelitian menunjukkan bahwa ekstrak kulit bawang merah (*Allium cepa L*.) mampu menghambat pertumbuhan *Aeromonas hydrophila* dengan terbentuknya zona hambat. Rata-rata diameter zona hambat ekstrak kulit bawang merah (*Allium cepa L*.) meningkat seiring dengan kenaikan konsentrasi, yaitu 1,21 mm (5%), 2,43 mm (10%), 3,36 mm (15%), 5,70 mm (20%), dan 6,23 mm (25%). Konsentrasi ekstrak kulit bawang merah (*Allium cepa L*.) sebesar 20% dan 25% menunjukkan efektivitas penghambatan pertumbuhan bakteri yang paling optimal. Analisis statistik menggunakan *One Way* ANOVA menunjukkan perbedaan signifikan (p=0,000) antar konsentrasi ekstrak kulit bawang merah (*Allium cepa L*.) terhadap zona hambat, sehingga dilanjutkan dengan uji *Least Significant Difference* (LSD) atau Beda Nyata Terkecil (BNT) untuk mengidentifikasi perbedaan antar perlakuan secara lebih spesifik.

Kata Kunci: Antibakteri, Kulit bawang merah, *Aeromonas hydrophilla*

THE EFFECT OF RED ONION SKIN EXTRACT (*Allium cepa L*) ON THE INHIBITORY POWER OF *AEROMONAS HYDROPHILA* THE CAUSATIVE BACTERIUM OF FISH DISEASE IN VITRO

By

Andi Welly Wiliandhana Pranata, NIM. 2013111004

Aquaculture Study Program

ABSTRACT

Aeromonas hydrophila is a Gram negative bacterium that is pathogenic to fisheries, causing diseases such as *hemorrhagic septicemia* or *Motile Aeromonas Septicemia* (MAS) in various freshwater fish species. Red onion (*Allium cepa L.*) has the potential to serve as an antibacterial agent due to its flavonoid content. This study aims to evaluate the antibacterial activity of 99% ethanol extract from red onion skin (*Allium cepa L.*) against *Aeromonas hydrophila*, a bacterium that causes diseases like *hemorrhagic septicemia and Motile Aeromonas Septicemia* (MAS) in freshwater fish. Red onion skin contains flavonoid compounds that may have antibacterial properties. The method used was the disc diffusion test with different concentrations of the onion skin extract (5%, 10%, 15%, 20%, and 25%), and tetracycline was used as a positive control. After 24 hours of incubation at 37°C, antibacterial activity was measured by the diameter of the inhibition zone. The results showed that the red onion skin extract inhibited the growth of *Aeromonas hydrophila* at all concentrations tested. The inhibition zone increased with higher concentrations of the extract: 1.21 mm at 5% concentration, 2.43 mm at 10% concentration, 3.36 mm at 15% concentration, 5.70 mm at 20% concentration, 6.23 mm at 25% concentration. The 20% and 25% concentrations showed the most effective inhibition. Statistical analysis using *One Way* ANOVA showed significant differences (p=0.000) between the concentrations, which was followed by a *Least Significant Difference* (LSD) test to identify specific differences between treatments. In conclusion, the red onion skin extract has potential as an antibacterial agent against *Aeromonas hydrophila*, with the 20% and 25% concentrations being the most effective.

***Keywords**: Antibacterial, Red onion skin, Aeromonas hydrophila*