ABSTRACT

Yolanda Olivia Harya Wibawa (24020221140087) **Antibacterial Activity of Wall Paint with the Addition of Essential Oils from Patchouli, Clove, and Citronella against *Pseudomonas aeruginosa*** (supervised by Hermin Pancasakti Kusumaningrum)

Wall paint damage can be caused by the activity of microorganisms, one of which is *Pseudomonas aeruginosa* bacteria. The purpose of this study was to characterize the *P. aeruginosa* FNCC 0063 isolate macroscopically, microscopically, and physiologically, and to analyze the differences in antibacterial activity of Danalac wall paint mixtures with patchouli essential oil (*Pogostemon cablin*), clove (*Syzygium aromaticum*), and citronella (*Cymbopogon nardus*) at various concentrations (25%, 50%, 75%) against *P. aeruginosa* FNCC 0063. The study used a Completely Randomized Design (CRD) with nine treatments. The positive control used 25 µg/disc amoxicillin antibiotic, the negative control was blank paper discs, while the comparison control was pure Danalac paint. Each treatment was repeated three times. Antibacterial activity testing using the disc diffusion method to measure the diameter of the inhibition zone against *P. aeruginosa* FNCC 0063. The results showed that *P. aeruginosa* FNCC 0063 is a Gram-negative bacteria with bacillus-shaped cells, cream-colored colonies, round, convex elevation, wavy edges, smooth texture, formed with short chains, aerobic and motile, and grows at a temperature of 37°C with a pH of 7. The optimal formulation in developing essential oil-based antibacterial cats to protect cats from *P. aeruginosa* FNCC 0063 is a mixture of 50% Danalac paint and clove essential oil at a concentration of 50%.

Keywords: *Antibacterial, Citronella, Clove, Essential oils, Patchouli, Pseudomonas aeruginosa, Paint*