

**UJI EFEKTIVITAS ANTIBIOTIK EKSTRAK ETANOL DAUN KAYU
MANIS (*CINNAMOMUM BURMANNII*) TERHADAP *SALMONELLA* SPP.
SECARA *IN VITRO***

Oleh

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ABSTRAK

Tingginya kasus infeksi *Salmonella* spp. dan meningkatnya resistensi serta biaya antibiotik sintetis mendorong urgensi pencarian alternatif terapi yang efektif dan terjangkau. Daun kayu manis (*Cinnamomum burmannii*), yang selama ini pemanfaatannya belum menjadi prioritas utama dibandingkan bagian kulit batangnya, memiliki potensi bioaktif yang belum dieksplorasi secara maksimal. Penelitian terdahulu umumnya menggunakan pelarut air, padahal penggunaan pelarut etanol dinilai lebih efektif dalam menarik senyawa polar dan semi-polar. Penelitian ini bertujuan untuk mengevaluasi potensi ekstrak etanol daun kayu manis sebagai agen antibiotik terhadap *Salmonella* spp. serta aktivitas antioksidannya. Penelitian eksperimental ini meliputi uji kuantitatif fitokimia, uji aktivitas antioksidan metode DPPH, dan uji aktivitas antibakteri metode sumur difusi dengan variasi konsentrasi 125, 250, 500, dan 1000 ppm. Data dianalisis menggunakan *One Way ANOVA* dan uji lanjut *Duncan* ($\alpha = 0,05$). Hasil penapisan fitokimia menunjukkan bahwa ekstrak didominasi oleh senyawa fenol (20.247,07 mg GAE/100 mL), diikuti flavonoid (3.867,56 mg QE/100 mL), tanin, dan alkaloid. Uji antioksidan menghasilkan nilai IC_{50} sebesar 140 ppm (kategori sedang). Hasil uji antibakteri menunjukkan bahwa ekstrak etanol daun kayu manis mampu menghambat pertumbuhan *Salmonella* spp. secara signifikan ($p < 0,001$). Konsentrasi 1000 ppm menunjukkan efektivitas tertinggi dengan rata-rata diameter zona hambat sebesar $19,31 \pm 0,74$ mm (kategori sedang), sedangkan konsentrasi 125-500 ppm dikategorikan lemah. Dapat disimpulkan bahwa ekstrak etanol daun kayu manis berpotensi dikembangkan sebagai antibiotik alami dan antioksidan, dengan aktivitas penghambatan bakteri terbaik pada konsentrasi 1000 ppm.

Kata kunci: *Cinnamomum burmannii*, *Salmonella* spp., resistensi antibiotik, antibiotik herbal

**IN VITRO EVALUATION OF THE ANTIBIOTIC EFFECTIVENESS OF
CINNAMON LEAF (*CINNAMOMUM BURMANNII*) ETHANOL
EXTRACT AGAINST *SALMONELLA* SPP.**

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ABSTRACT

The high incidence of *Salmonella* spp. infections, coupled with rising resistance and the high cost of synthetic antibiotics, underscores the urgent need for effective and affordable therapeutic alternatives. *Cinnamomum burmannii* (cinnamon) leaves, whose utilization has historically been secondary to the bark, possess bioactive potential that remains underexplored. While previous studies primarily utilized aqueous solvents, ethanol is considered more effective for extracting polar and semi-polar compounds. This study aims to evaluate the potential of the ethanol extract of *Cinnamomum burmannii* leaves as an antibiotic agent against *Salmonella* spp., as well as its antioxidant activity. This experimental study included quantitative phytochemical analysis, antioxidant activity testing via the DPPH method, and antibacterial activity testing using the well diffusion method at concentrations of 125, 250, 500, and 1000 ppm. Data were analyzed using One Way ANOVA followed by Duncan's post hoc test ($\alpha = 0.05$). Phytochemical screening results indicated that the extract was dominated by phenolic compounds (20,247.07 mg GAE/100 mL), followed by flavonoids (3,867.56 mg QE/100 mL), tannins, and alkaloids. Antioxidant testing yielded an IC₅₀ value of 140 ppm (moderate category). Antibacterial test results showed that the ethanol extract of *Cinnamomum burmannii* leaves significantly inhibited the growth of *Salmonella* spp. ($p < 0.001$). The 1000 ppm concentration demonstrated the highest effectiveness with a mean inhibition zone diameter of 19.31 ± 0.74 mm (moderate category), while concentrations of 125-500 ppm were categorized as weak. It can be concluded that the ethanol extract of *Cinnamomum burmannii* leaves has the potential to be developed as a natural antibiotic and antioxidant, with the best bacterial inhibition activity observed at a concentration of 1000 ppm.

Keywords: *Cinnamomum burmannii*, *Salmonella* spp., antibiotic resistance, herbal antibiotics.