

Antibacterial activity of the crude extract of *Piper Sarmentosum* against *Pseudomonas fuscovaginae*

ABSTRACT

Kadok or *P. Sarmentosum* Roxb. is a terrestrial herb of the Piperaceae family widely distributed throughout South East Asian in the sub-tropical and tropical region of the world. All part of the plant is used as vegetables, commercially and medicinally valuable in many regions for treating many ailments. The possible benefits of *P. sarmentosum* are enormous which supported by a number of investigations which suggest the existence of antimicrobial compounds in the all plant parts. A study was conducted to evaluate the antibacterial activity of the methanolic fruit extract of *P. sarmentosum* against *P. fuscovaginae* by agar well diffusion assay and macro broth dilution method. The results were measured by diameter of inhibition zones produced, determination of Minimum Inhibition Concentration (MIC) and Minimum Inhibition Concentration (MBC) and the Inhibition Concentration (IC). The fruit extract which showed positive inhibition against the tested bacteria with diameter ranging from 9.33 ± 0.58 mm to 19.33 ± 1.15 mm. At lowest concentration, 25 mg/mL of fruit extract recorded inhibition zone value of 9.33 ± 0.58 mm for *P. fuscovaginae*. The highest concentrations of 200 mg/mL of fruit extract showed higher inhibition zone for 18.33 ± 0.58 mm for *P. fuscovaginae* compared to positive control, Streptomycin sulphate 15.67 ± 5.13 mm. The MIC and MBC value obtained was 12.5 mg/mL and 25 mg/mL, respectively. The IC₅₀ and IC₉₀ values were also determined. The fruit extract exhibited IC₅₀ values of 28.08 mg/mL and IC₉₀ values of 353.77 mg/mL against *P. fuscovaginae*. The antibacterial activity of streptomycin was clearly higher (50% growth inhibition at 0.072 mg/mL and 90% growth inhibition at 1.049 mg/mL against *P. fuscovaginae*. The results obtained from this study suggest that the fruit extract of *P. sarmentosum* has a potential to be developed as a novel bactericide.

Keyword: Antibacterial; Inhibition concentration; Medicinal plant; Plant extracts; Rice plant

