PHYTOCHEMICAL SCREENING AND ANTIFUNGAL ACTIVITIES OF THE ROOT EXTRACT OF *Casuarina equisetifolia*

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ABSTRACT

PHYTOCHEMICAL SCREENING AND ANTIFUNGAL ACTIVITY OF ROOT EXTRACT OF *Casuarina equisetifolia*

Casuarina equisetifolia also known as "Pokok rhu" by Malaysian belong to family Casuarinacea was one of wind break tree. The root was selected because of its numerous benefits in traditional folk medicine to treat astringent, diabetes and ulcers. This study was done to evaluate the antifungal activity on *C. albicans* and *A. niger* as well as to identify the phytochemical compounds that present in the roots of *C. equisetifolia*. The methods used in this study started by obtaining crude extract through extraction procedure with three selected solvents such as petroleum ether (non-polar solvent), chloroform (medium polar solvent) and methanol (polar solvent). The antifungal activity of each extract was tested using disc diffusion method for fungi *C. albicans* and well diffusion method for *A. niger* fungi. The detection and identification of the phytochemical compound was performed through phytochemical screening. Thin layer chromatography (TLC) analysis was developed to detect the number of compounds present in each extract. The highest antifungal activities showed by *C. albicans* that extracted with methanol solvent with zone of inhibition (4.9 mm) followed by chloroform (5.7 mm) and petroleum ether (2.6 mm). Meanwhile *A. niger* showed no inhibition in this study. The phytochemical screening showed positive result for the presence of alkaloid, flavonoid, tannin, terpenoids, and saponin. Each secondary metabolite has medicinal value in antifungal activity exhibited by *C. equisetifolia*. The TLC analysis revealed that number of compound present in petroleum ether and methanol extract similar which was 6 compounds while chloroform produces 5 compounds. *C. equisetofolia* root extract could be source of antifungal drugs as it can inhibit growth of *C. albicans,* so further investigation should be conducted.