

**ANTIMICROBIAL POTENCY OF MISTLETOE
(*Scurrula ferruginea* (Roxb. ex Jack) Danser)
EXTRACT FROM ORANGE PLANTS AND ITS
ANTIOXIDANT ACTIVITIES**

BIOLOGY UNDERGRADUATE THESIS



FACULTY OF MATH AND NATURAL SCIENCE

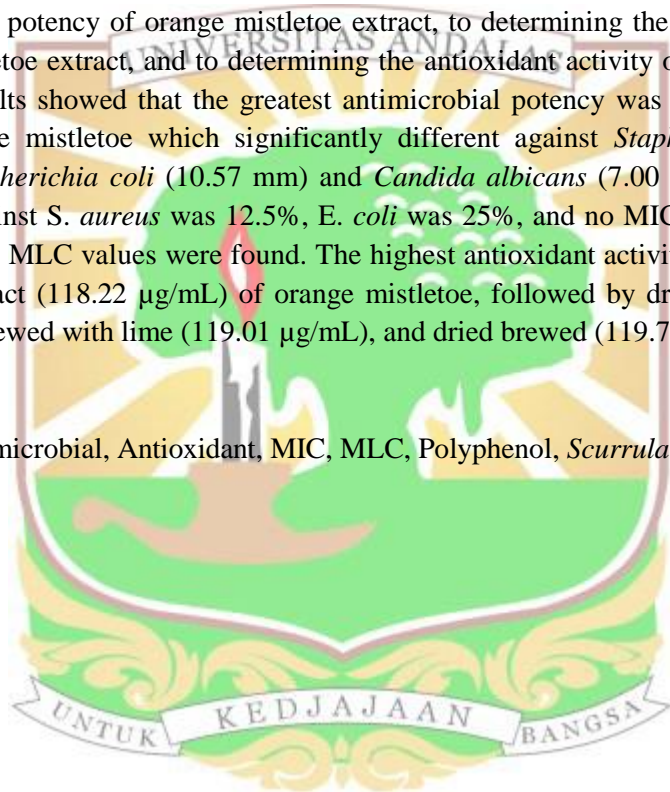
UNIVERSITAS ANDALAS, PADANG

2022

ABSTRACT

Orange mistletoe (*Scurrula ferruginea* (Roxb. ex Jack) Danser) is a common mistletoe found in Indonesia and often used as a herbal drink. This mistletoe has active compound such as terpenoids, tannins, saponins and flavonoids acts as antimicrobial and antioxidant. Research about "Antimicrobial Potency of Mistletoe (*Scurrula ferruginea* (Roxb. ex Jack) Danser) Extract From Orange Plants and Its Antioxidant Activities" was conducted at the Microbiology Research Laboratory, Department of Biology, Faculty of Mathematics and Natural Sciences, Universitas Andalas. The method used in this research was experiment method with CRD nested pattern with 3 repetitions. The aims of this study were to clarifying the antimicrobial potency of orange mistletoe extract, to determining the MIC and MLC of the orange mistletoe extract, and to determining the antioxidant activity of orange mistletoe extract. The results showed that the greatest antimicrobial potency was found in the fresh extract of orange mistletoe which significantly different against *Staphylococcus aureus* (14.05 mm), *Escherichia coli* (10.57 mm) and *Candida albicans* (7.00 mm). The MIC of fresh extract against *S. aureus* was 12.5%, *E. coli* was 25%, and no MIC values against *C. albicans*, then no MLC values were found. The highest antioxidant activity value was found in the fresh extract (118.22 $\mu\text{g/mL}$) of orange mistletoe, followed by dried boiled (118.86 $\mu\text{g/mL}$), dried brewed with lime (119.01 $\mu\text{g/mL}$), and dried brewed (119.78 $\mu\text{g/mL}$).

Keywords: Antimicrobial, Antioxidant, MIC, MLC, Polyphenol, *Scurrula ferruginea*



ABSTRAK

Benalu jeruk (*Scurrula ferruginea* (Roxb. ex Jack) Danser) adalah benalu yang umum ditemukan di Indonesia dan sering dimanfaatkan sebagai minuman herbal. Benalu ini memiliki kandungan aktif berupa terpenoid, tannin, saponin dan flavonoid yang bertindak sebagai antimikroba dan antioksidan. Penelitian tentang “Potensi Antimikroba Ekstrak Benalu (*Scurrula ferruginea* (Roxb. ex Jack) Danser) dari Tanaman Jeruk dan Aktivitas Antioksidannya” telah dilakukan di Laboratorium Penelitian Mikrobiologi, Jurusan Biologi, Fakultas MIPA Metode yang digunakan dalam penelitian ini adalah metode RAL bersarang dengan 3 kali pengulangan. Penelitian ini bertujuan untuk mengetahui potensi antimikroba dari ekstrak benalu jeruk, untuk menentukan KHM dan KBM dari ekstrak benalu jeruk, dan untuk menentukan aktivitas antioksidan ekstrak benalu jeruk. Hasil penelitian menunjukkan bahwa potensi antimikroba terbesar terdapat pada ekstrak segar benalu jeruk yang berbeda nyata terhadap *Staphylococcus aureus* (14,05 mm), *Escherichia coli* (10,57 mm) dan *Candida albicans* (7,00 mm). KHM ekstrak segar terhadap *S. aureus* adalah 12,5%, *E. coli* adalah 25%, dan tidak ada nilai KHM terhadap *C. albicans*, serta tidak ditemukan nilai KBM pada masing-masing mikroba. Nilai aktivitas antioksidan tertinggi terdapat pada ekstrak benalu segar (118, 22 g/mL), diikuti dengan kering rebusan (118, 86 g/mL), kering seduhan dengan jeruk nipis (119, 01 g/mL), dan kering seduhan (119, 78 g/mL).

Kata kunci: Antimikroba, Antioksidan, KBM, KHM, Polifenol, *Scurrula ferruginea*

