

# **FITOKIMIA, AKTIVITAS ANTIOKSIDAN DAN TOKSISITAS EKSTRAK AKAR AREN (*Arenga pinnata*) HASIL MASERASI DAN SOXHLETASI**

## **ABSTRAK**

Akar aren (*Arenga pinnata*) dapat digunakan sebagai obat tradisional namun isolasi, uji fitokimia, aktivitas antioksidan, dan toksisitasnya belum banyak diteliti. Penelitian ini bertujuan untuk mengetahui rendemen, golongan senyawa kimia, aktivitas antioksidan, dan toksisitas ekstrak akar aren. Ekstrak akar aren diperoleh dengan metode maserasi dan soxhletasi menggunakan pelarut etanol teknis 96%. Rendemen ekstrak akar aren dengan metode soxhletasi lebih banyak (3,40%) dibandingkan dengan hasil maserasi (1,47%). Uji fitokimia ekstrak akar aren menunjukkan adanya senyawa alkaloid, flavanoid, tanin, dan triterpenoid. Namun, tidak teridentifikasi adanya steroid. Aktivitas antioksidan (IC<sub>50</sub>) akar aren dengan menggunakan metode DPPH adalah 10,09 µg/mL (maserasi) dan 10,04 µg/mL (soxhletasi). Toksisitas (LC<sub>50</sub>) menggunakan metode *Brine Shrimp Lethality Test* (BSLT) yaitu 925,67 µg/mL (maserasi) dan 691,82 µg/mL (soxhletasi). Berdasarkan analisis data terdapat perbedaan yang nyata ( $P < 0,05$ ) untuk rendemen dan toksisitas sedangkan aktivitas antioksidan tidak ada perbedaan yang nyata ( $P > 0,05$ ). Berdasarkan penelitian ini diperoleh adanya potensi ekstrak akar aren sebagai obat tradisional batu ginjal.

Kata kunci: aktivitas antioksidan, *arenga pinnata*, fitokimia, maserasi, soxhletasi, toksisitas.

# **PHYTOCHEMICAL, ANTIOXIDANT ACTIVITY AND TOXICITY OF AREN ROOTS (*Arenga pinnata*) EXTRACT RESULTS FROM MACERATION AND SOXHLETATION**

## **ABSTRACT**

Palm root (*Arenga pinnata*) can be used as a traditional medicine but its isolation, phytochemical tests, antioxidant activity, and toxicity have not been widely studied. This study aims to determine the yield, chemical compound class, antioxidant activity, and toxicity of palm root extract. Palm root extract was obtained by maceration and soxhletation methods using 96% technical ethanol solvents. The yield of palm root extract by soxhletation method was more (3,40%) compared to the maceration yield (1,47%). Phytochemical tests of palm root extract showed the presence of alkaloid compounds, flavanoids, tannins, and triterpenoids. However, no steroids were identified. The antioxidant activity ( $IC_{50}$ ) of palm root using the DPPH method was 10,09  $\mu\text{g/mL}$  (maceration) and 10,04  $\mu\text{g/mL}$  (soxhletation). Toxicity ( $LC_{50}$ ) used the Brine Shrimp Lethality Test (BSLT) method, which was 925,67  $\mu\text{g/mL}$  (maceration) and 691,82  $\mu\text{g/mL}$  (soxhletation). Based on data analysis, there was a significant difference ( $P < 0,05$ ) for yield and toxicity while there was no significant difference in antioxidant activity ( $P > 0,05$ ). Based on this research, the potential of palm root extract as a traditional medicine for kidney stones was obtained.

Keywords: antioxidant activity, *arenga pinnata*, maceration, phytochemical, soxhletasi, antioxidant activity, toxicity.