

**ABSTRAK**

Judul Skripsi : Pengaruh Jenis Pelarut Terhadap Kandungan Total Fenol, Flavonoid dan Aktivitas Antioksidan Ekstrak Daun Gaharu (*Aquilaria malaccensis* Lam.) Dengan Metode UAE

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Daun gaharu (*Aquilaria malaccensis* Lam.) merupakan tanaman yang memiliki kandungan metabolite sekunder seperti flavonoid, steroid, dan tanin yang berpotensi sebagai antioksidan. Penelitian ini bertujuan untuk membuktikan pengaruh jenis pelarut terhadap kandungan total fenol, total flavonoid dan aktivitas antioksidan dari ekstrak daun gaharu. Ekstrak daun gaharu diekstraksi dengan metode *Ultrasound Assisted Extraction* (UAE). Pelarut yang digunakan merupakan pelarut polar dan semi polar yang dapat menarik senyawa fenol dan flavonoid. Uji kandungan total fenol, flavonoid, dan antioksidan menggunakan spektrovotometer UV-Vis (Tecan Infinite 200 M pro®). Uji kandungan total fenol menggunakan pereaksi folin ciocalteau dan asam galatnya sebagai standar, sedangkan total flavonoid menggunakan pereaksi  $AlCl_3$ , dan kuersetinnya sebagai standar. Nilai kadar total fenol pelarut etanol 96% sebesar  $(233,62 \pm 13,90$  mgGAE/g), pelarut metanol  $(214,86 \pm 15,14$  mgGAE/g), aseton  $(221,13 \pm 8,99$  mgGAE/g) dan pelarut etil asetat  $(48,59 \pm 11,39$  mgGAE/g). Adapun nilai kadar total flavonoid pelarut etanol 96% sebesar  $(22,86 \pm 0,81$  mgQE/g), pelarut metanol  $(21,38 \pm 0,56$  mgQE/g), pelarut aseton  $(28,79 \pm 0,43$  mgQE/g) dan pelarut etil asetat  $(46,65 \pm 0,83$  mgQE/g). Uji aktivitas antioksidan menggunakan metode DPPH dan menggunakan asam askorbat sebagai kontrol positif. Nilai aktivitas antioksidan pelarut etanol 96% sebesar  $(56,90$   $\mu$ g/mL), pelarut metanol  $(52,79$   $\mu$ g/mL), pelarut aseton  $(49,98$   $\mu$ g/mL), dan pelarut etil asetat  $(74,89$   $\mu$ g/mL). Dapat disimpulkan bahwa ekstrak daun gaharu memiliki  $IC_{50}$  yang termasuk kategori sangat kuat dan kuat.

**Kata kunci :** Gaharu, *Aquilaria malaccensis*, UAE, jenis pelarut, antioksidan

**ABSTRACT**

Title : Effect of Solvent Type on Total Phenol Content, Flavonoids and Antioxidant Activity of Gaharu Leaf Extract (*Aquilaria malaccensis* Lam.) Using the UAE Method

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Gaharu leaves (*Aquilaria malaccensis* Lam.) is a plant that contains secondary metabolites such as flavonoids, steroids, and tannins which have potential as antioxidants. This study aims to prove the effect of the type of solvent on the total phenol content, total flavonoids and antioxidant activity of gaharu leaf extract. Gaharu leaf extract was extracted using the *Ultrasound Assisted Extraction* (UAE) method. The solvents used are polar and semi-polar solvents which can attract phenol and flavonoid compounds. Test the content of total phenols, flavonoids, and antioxidants using a UV-Vis spectrophotometer (Tecan Infinite 200 M pro®). The total phenolic content was tested using folin ciocalteau reagent and gallic acid as standard, while for total flavonoids using  $\text{AlCl}_3$  reagent and quercetin as standard. The value of total phenol content in 96% ethanol solvent was  $(233.62 \pm 13.90 \text{ mgGAE/g})$ , methanol solvent  $(214.86 \pm 15.14 \text{ mgGAE/g})$ , acetone  $(221.13 \pm 8.99 \text{ mgGAE/g})$  and ethyl acetate solvent  $(48.59 \pm 11.39 \text{ mgGAE/g})$ . The value of total flavonoid content in 96% ethanol solvent was  $(22.86 \pm 0.81 \text{ mgQE/g})$ , methanol solvent  $(21.38 \pm 0.56 \text{ mgQE/g})$ , acetone solvent  $(28.79 \pm 0.43 \text{ mgQE/g})$  and ethyl acetate solvent  $(46.65 \pm 0.83 \text{ mgQE/g})$ . Antioxidant activity test using the DPPH method and using ascorbic acid as a positive control. The antioxidant activity value of 96% ethanol solvent  $(56.90 \text{ } \mu\text{g/mL})$ , methanol solvent  $(52.79 \text{ } \mu\text{g/mL})$ , acetone solvent  $(49.98 \text{ } \mu\text{g/mL})$ , and ethyl acetate solvent  $(74.89 \text{ } \mu\text{g/mL})$ . It can be concluded that gaharu leaf extract has  $\text{IC}_{50}$  which is included in the very strong and strong category.

Keywords : Agarwood, *Aquilaria malaccensis*, UAE, type of solvent, antioxidant