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**ANALISIS KUANTITATIF DAN UJI AKTIVITAS
ANTIOKSIDAN EKSTRAK DAUN GETIH-GETIHAN (*Rivina
humilis* L.) DENGAN METODE DPPH (2,2-difenil-1-
pikrilhidrazil)**

ABSTRAK

Latar Belakang: Indonesia yang terletak di garis khatulistiwa memiliki paparan sinar matahari yang tinggi, sehingga risiko paparan radikal bebas juga meningkat. Radikal bebas dapat menyebabkan stres oksidatif yang berujung pada kerusakan kulit dan penuaan dini. Senyawa antioksidan diperlukan untuk menetralkan radikal bebas tersebut. Tanaman getih-getihan (*Rivina humilis* L.) diketahui mengandung metabolit sekunder seperti flavonoid, tanin, saponin dan steroid yang berpotensi sebagai antioksidan. Namun, data ilmiah mengenai potensi antioksidan daun tanaman ini masih terbatas.

Tujuan: Menganalisis kadar flavonoid total dan mengevaluasi aktivitas antioksidan ekstrak daun getih-getihan (*Rivina humilis* L.) dengan metode DPPH.

Metode: Ekstraksi metode maserasi dengan pelarut etanol 70%. Ekstrak diuji kandungan senyawa aktif melalui uji fitokimia (flavonoid, tanin, saponin, steroid dan alkaloid). Kadar flavonoid total ditentukan secara spektrofotometri UV-Vis menggunakan kuersetin sebagai pembanding. Aktivitas antioksidan dengan konsentrasi 60, 80, 100, 120 dan 140 ppm diuji dengan metode DPPH dan dianalisis menggunakan perangkat lunak SPSS.

Hasil: Hasil uji fitokimia menunjukkan bahwa ekstrak mengandung flavonoid, saponin, tanin, dan steroid. Kadar flavonoid total sebesar 81,47 mgQE/g ekstrak. Presentase inhibisi pada konsentrasi 60, 80, 100, 120 dan 140 ppm secara berturut-turut sebesar 10,69%, 21,66%, 33,17%, 42,76% dan 53,49%. Nilai IC₅₀ sebesar 133,069 ppm sebagai pembanding kuersetin menunjukkan IC₅₀ sebesar 4,68 ppm.

Kesimpulan: Ekstrak daun getih-getihan (*Rivina humilis* L.) terbukti mengandung senyawa flavonoid dan memiliki aktivitas antioksidan dengan kategori sedang berdasarkan nilai IC₅₀.

Kata kunci: *Rivina humilis* L., flavonoid total, antioksidan, DPPH, IC₅₀

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**QUANTITATIVE ANALYSIS AND ANTIOXIDANT TEST
ACTIVITY OF GETIH-GETIHAN LEAF EXTRACT (*Rivina
humilis* L.) USING DPPH (2,2-difenil-1-pikrilhidrazil) METHOD**

ABSTRACT

Background: Indonesia's location along the equator exposes it to high levels of sunlight, increasing the risk of free radical exposure. Free radicals can cause oxidative stress, leading to skin damage and premature aging. Antioxidant compounds are required to neutralize these free radicals. *Rivina humilis* L., a tropical plant, is known to contain secondary metabolites such as flavonoids, tannins, saponins, and steroids, which have potential antioxidant properties. However, scientific data on the antioxidant potential of its leaves remain limited.

Objective: To determine the total flavonoid content and evaluate the antioxidant activity of *Rivina humilis* L. leaf extract using the DPPH method.

Method: The extraction was carried out using the maceration method with 70% ethanol as the solvent. The extract was tested for active compounds through phytochemical screening, including flavonoids, tannins, saponins, steroids, and alkaloids. Total flavonoid content was determined spectrophotometrically using a UV-Vis spectrophotometer with quercetin as the standard. Antioxidant activity was evaluated using the DPPH method and analyzed with SPSS.

Result: Phytochemical screening results showed that the extract contained flavonoids, saponins, tannins, and steroids. The total flavonoid content was 81.47 mgQE/g of extract. The percentage of inhibition at concentrations of 60, 80, 100, 120, and 140 ppm were 10.69%, 21.66%, 33.17%, 42.76%, and 53.49%, respectively. The IC_{50} value was determined to be 133.069 ppm as a comparison quercetin showed an IC_{50} value of 4.68 ppm.

Conclusion: The leaf extract of *Rivina humilis* L. contains flavonoid compounds and exhibits moderate antioxidant activity based on its IC_{50} value.

Keywords: *Rivina humilis* L., total flavonoid, antioxidant, DPPH, IC_{50}