

**PERBANDINGAN KADAR TOTAL FENOLIK DAN FLAVONOID  
EKSTRAK ETANOL DAUN, BATANG, DAN AKAR KIRINYUH  
(*Chromolaena odorata* L.) DENGAN MENGGUNAKAN METODE  
SPEKTROFOTOMETRI UV-Vis**

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**INTISARI**

**Latar Belakang:** Kirinyuh merupakan gulma yang hidup di daerah tropis maupun subtropis. Tanaman tersebut memiliki kandungan senyawa bioaktif utama seperti alkaloid, saponin, fenolik, tanin, steroid dan flavonoid. Penelitian sebelumnya, dilakukan uji eksperimen terkait kandungan senyawa bioaktif pada bagian daunnya saja, sedangkan pada bagian batang dan akar masih sangat sedikit.

**Tujuan Penelitian:** Mengetahui kadar total fenolik dan flavonoid dalam ekstrak etanol daun, batang, dan akar Kirinyuh serta mengetahui bagian mana yang memiliki kandungan senyawa bioaktif terbesar.

**Metode Penelitian:** Penelitian ini dilakukan secara kuantitatif menggunakan metode eksperimental di laboratorium. Masing-masing bagian Kirinyuh dimaserasi menggunakan pelarut etanol 70%. Hasil maserasi yang didapatkan yaitu berupa filtrat, lalu diuapkan sampai menjadi ekstrak kental. Perhitungan jumlah kadar total fenolik dan flavonoid dilakukan dengan mensubstitusikan nilai absorbansi sampel ke dalam hasil regresi kurva baku asam galat dan kuersetin yang diperoleh menggunakan metode spektrofotometri UV-Vis.

**Hasil Penelitian:** Nilai kadar total fenolik dihitung %b/b sebagai nilai GAE dan flavonoid dihitung %b/b sebagai nilai QE ekstrak etanol Kirinyuh dengan metode spektrofotometri UV-Vis adalah daun sebesar  $44,970 \pm 3,725$  %b/b dan  $38,306 \pm 0,195$  %b/b, batang sebesar  $20,403 \pm 4,002$  %b/b dan  $3,959 \pm 1,891$  %b/b, dan akar  $21,381 \pm 28,824$  %b/b dan  $3,289 \pm 3,943$  %b/b.

**Kesimpulan:** Nilai kadar total fenolik dan flavonoid terbanyak berada pada bagian daun sebesar  $44,970 \pm 3,725$  %b/b dan  $38,306 \pm 0,195$  %b/b.

**Kata Kunci:** Fenolik, Flavonoid, Daun, Batang, Akar, *Chromolaena odorata* L.

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## COMPARISON OF TOTAL PHENOLIC AND FLAVONOID LEVELS OF ETHANOL EXTRACTS IN LEAVE, STEM AND ROOT OF KIRINYUH (*Chromolaena odorata* L.) THROUGH UV-Vis SPECTROPHOTOMETRY METHOD

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### ABSTRACT

**Background:** Kirinyuh is a weed that lives in tropical and subtropical areas. These plants contain major bioactive compounds such as alkaloids, saponins, phenolics, tannins, steroids and flavonoids. Previous research mostly conducted experimental tests on the content of bioactive compounds in the leaves, while very few examined the stems and roots.

**Objective:** Aims of this study is to determine of phenolic and flavonoid content in the ethanolic extract of leaves, stems, and roots of Kirinyuh also to find out which parts contain the largest bioactive compounds.

**Method:** This research was conducted quantitatively using experimental methods in the laboratory. Each part of Kirinyuh was macerated using 70% ethanol as solvent. The result of maceration was in the form of filtrate, then evaporated until it became a thick extract. The total levels of phenolic and flavonoid were calculated by substituting the absorbance value of the sample into the standard curve regression results for gallic acid and quercetin obtained through the UV-Vis spectrophotometric method.

**Result:** The total phenolic content was calculated %b/b as GAE value and flavonoid was calculated %b/b as QE value of Kirinyuh ethanol extract using UV-Vis spectrophotometry method in the leaves were  $44,970 \pm 3,725$  %b/b and  $38,306 \pm 0,195$  %b/b, stems with  $20,403 \pm 4,002$  %b/b and  $3,959 \pm 1,891$  %b/b, and roots with  $21,381 \pm 28,824$  %b/b and  $3,289 \pm 3,943$  %b/b.

**Conclusion:** The highest total phenolic and flavonoid content values were in the leaves with  $44,970 \pm 3,725$  %b/b and  $38,306 \pm 0.195$  %b/b.

**Keywords:** Phenolic, Flavonoid, Leave, Stem, Root, *Chromolaena odorata* L.

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