

VEGETATION ANALYSIS OF *Oxalis barrelieri* L. IN GAMA GIRI MANDIRI REGION, MANGUNAN VILLAGE, IMOGIRI, BANTUL DISTRICT AND ITS BIOACTIVITY AS ANTIBACTERIAL AGENT AGAINST *Escherichia coli* ATCC 35218

Andena Silaen
11/312678/FA/08669

ABSTRACT

The study on the role of Calincing (*Oxalis barrelieri* L.) in Gama Giri Mandiri region has been conducted. The purpose of this study was to determine the role of wild Calincing in Gama Giri Mandiri region based on its domination to the region's vegetation and to analyze its antibacterial compounds group against *Escherichia coli* ATCC 35218. Its secondary metabolites profile has also been analyzed to reveal the correlations between its environmental factors and its total phenolic content.

Vegetation analysis performed on 50 plots laid out systemically in 5 location samples. Total phenolic test and TLC-Bioautography was conducted to ethanol condensed of Calincing extract found in 2 location samples (on bare land and under pine trees). Independent sample t-test with 95% confident level was used to analyze the results statistically. Correlation analysis was conducted between total phenolic content on each locations and environmental factors, such as air temperature, light intensity, air humidity, soil pH and humidity, and also soil content (N, P and K) using Pearson Correlation method.

Calincing dominated on bare land locations (location II) with Importance Value Index 81,43%, and was found growing along with Asteraceae and Verbenaceae family. Calincing on an open location (bare land) contains more phenolic ($0,471 \pm 0,03\%$ b/b EAG) than calincing under pine trees shadings ($0,406 \pm 0,02\%$ b/b EAG). Its group of secondary compounds that is responsible for antibacterial activity hasn't yet known in this study. Calincing was proved to contain phenolic and flavonoids compounds.

Keywords: *Oxalis barrelieri* L., vegetation analysis, *Escherichia coli*, total phenolic content, Gama Giri Mandiri

ANALISIS VEGETASI *Oxalis barrelieri* L. DI WILAYAH GAMA GIRI MANDIRI, DESA MANGUNAN, KECAMATAN IMOGIRI, KABUPATEN BANTUL DAN KAJIAN BIOAKTIVITASNYA SEBAGAI ANTIBAKTERI TERHADAP *Escherichia coli* ATCC 35218

Andena Silaen
11/312678/FA/08669

INTISARI

Telah dilakukan penelitian mengenai peranan calincing (*Oxalis barrelieri* L.) di wilayah Gama Giri Mandiri. Tujuan penelitian ini adalah untuk mengetahui peranan tumbuhan calincing (*Oxalis barrelieri* L.) liar di wilayah Gama Giri Mandiri berdasarkan dominasinya terhadap vegetasi wilayah tersebut dan menganalisis golongan senyawa antibakteri calincing terhadap bakteri *E.coli* ATCC 35218. Profil kandungan metabolit sekunder dari calincing juga dianalisis untuk melihat hubungan faktor lingkungan tumbuh terhadap kandungan fenolik totalnya.

Analisis vegetasi dilakukan pada 50 plot yang diletakkan secara sistematis di 5 sampel lokasi. Uji fenolik total dan KLT-Bioautografi dilakukan terhadap ekstrak kental etanol calincing yang ditemukan pada 2 lokasi, yaitu di lokasi terbuka dan di bawah pohon mahoni. Analisis statistik dilakukan dengan metode *independent sample t-test* taraf kepercayaan 95%. Analisis korelasi dilakukan antara kadar fenolik total calincing di setiap lokasi dengan parameter lingkungan tempat tumbuh, yaitu suhu, kelembaban udara, pH dan Rh tanah, intensitas cahaya serta kandungan tanahnya (N, P, dan K) menggunakan metode *Pearson Correlation*.

Calincing paling mendominasi di lokasi terbuka (lokasi II) dengan nilai penting 81,43% dan banyak ditemukan tumbuh bersama dengan tumbuhan anggota suku Asteraceae dan Verbenaceae. Calincing di lokasi terbuka memiliki kandungan fenolik lebih banyak ($0,471 \pm 0,03\%$ b/b EAG) dari lokasi di bawah pohon pinus ($0,406 \pm 0,02\%$ b/b EAG). Belum dapat diketahui golongan senyawa yang bertanggung jawab terhadap aktivitas antibakteri ekstrak calincing. Calincing terbukti mengandung senyawa fenolik dan flavonoid.

Kata kunci : *Oxalis barrelieri* L., Gama Giri Mandiri, analisis vegetasi, *Escherichia coli*, fenolik total