

**Kholiqul Hermawati. 2018. Analisis Kadar Klorofil Dan Indeks Stomata Daun Widuri (*Calotropis gigantea* L.) Di Sekitar Pabrik Semen Di Tuban. Skripsi ini dibawah bimbingan Dra. Thin Soedari, CESA dan Drs. Trisnadi Widyaleksono, C.P., M.Si. Program Studi S1 Biologi, Departemen Biologi, Fakultas Sains dan Teknologi Universitas Airlangga Surabaya.**

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### ABSTRAK

Penelitian bertujuan mengetahui jumlah klorofil a, kadar klorofil b dan indeks stomata serta mengetahui ada tidaknya perbedaan antara kadar klorofil a, klorofil b, dan indeks stomata daun widuri (*Calotropis gigantea* L.) terhadap sumber pencemar dari kawasan yang searah dengan angin dan kawasan yang tidak searah dengan angin di sekitar pabrik semen di Tuban. Kawasan yang searah dengan arah angin pada zona 1 radius 0 Km – 2 Km dari sumber pencemar, zona 2 radius 2 Km – 4 Km dari sumber pencemar, dan zona 3 radius 4 Km – 6 Km dari sumber pencemar. Sedangkan pada kawasan yang tidak searah dengan arah angin pada zona 4 radius 0 Km – 2 Km dari sumber pencemar, zona 5 radius 2 Km – 4 Km dari sumber pencemar, dan zona 6 radius 4 Km – 6 Km dari sumber pencemar. Setiap zona dipilih 4 tanaman widuri. Pemilihan sampel daun secara sistematis nilai tengah. Data kadar klorofil dianalisis dengan Uji Anova (Uji T) pada  $\alpha$  0,05 sedangkan data indeks stomata dianalisis dengan Uji Mann Whitney pada  $\alpha$  0,05. Hasil penelitian menunjukkan kadar klorofil a pada zona 1 sebesar 6.852 mg/L, zona 2 sebesar 12.562 mg/L, dan zona 3 sebesar 10.683 mg/L. Sedangkan pada zona 4 sebesar 8.609 mg/L, zona 5 sebesar 10.795 mg/L, dan zona 6 sebesar 11.408 mg/L. Nilai rata-rata kadar klorofil b pada pada zona 1 sebesar 10.529 mg/L, zona 2 sebesar 5.978 mg/L, dan zona 3 sebesar 10.212 mg/L. Sedangkan pada zona 4 sebesar 11.440 mg/L, zona 5 sebesar 12.230 mg/L, dan zona 6 sebesar 14.449 mg/L. Dari pengamatan indeks stomata pada zona 1 sebesar 45, zona 2 sebesar 36, dan zona 3 sebesar 13. Sedangkan pada zona 4 sebesar 39, zona 5 sebesar 25, dan zona 6 sebesar 17. Terdapat beda kadar klorofil a, kadar klorofil b, dan indeks stomata pada kawasan yang searah dengan arah angin dan kawasan yang tidak searah dengan arah angin dari sumber pencemar.

**Kata kunci:** kadar klorofil a, kadar klorofil b, indeks stomata, daun widuri (*Calotropis gigantea* L.), dan radius.

**Kholiql Hermawati. 2018. Analysis of Chlorophyll and Stomata Index Widuri (*Calotropis gigantea* L.) Around Cement Factory in Tuban. This Thesis is under the guidance of Dra. Thin Soedari, CESA and Drs. Trisnadi Widyaleksono, C.P., M.Si. Biology S1 Program, Biology Department, Faculty of Science and Technology Airlangga University Surabaya.**

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### ABSTRACT

The aim of this research is to know of chlorophyll a, chlorophyll b and stomata index also to know whether there is a difference between chlorophyll a, chlorophyll b and stomata leaf of widuri (*Calotropis gigantea* L.) within radius of pollutant source from a region in the direction to wind and an area which is not in the direction of wind around a cement factory in Tuban. The area is in the direction of wind direction at zone 1 radius 0 Km – 2 Km from pollutant source, zone 2 radius 2 Km – 4 Km from pollutant source, and zone 3 radius 4 Km – 6 Km from pollutant. While the area is not in the direction of wind direction in zone 4 radius 0 Km – 2 Km from pollutant source, zone 5 radius 2 Km – 4 Km from pollutant source, and zone 6 radius 4 Km – 6 Km from pollutant source. Each zone is selected 4 Widuri plants. Selection of leaf samples systematically the middle value. Data of chlorophyll content were analyzed by Anova Test (T Test) at  $\alpha$  0,05 while stomata index data was analyzed with Mann Whitney Test at  $\alpha$  0,05. The research results showed that chlorophyll a in zone 1 was 6,852 mg/L, zone 2 was 12,562 mg/L, and zone 3 was 10,683 mg/L. While in zone 4 is 8,609 mg/L, zone 5 is 10,795 mg/L, and zone 6 is 11,408 mg/L. The mean value of chlorophyll b in zone 1 was 10,529 mg/L, zone 2 was 5,978 mg/L, and zone 3 was 10,212 mg/L. While in zone 4 is 11,440 mg/L, zone 5 is 12.230 mg/L, and zone 6 is 14,449 mg/L. From the observation of stomata index in zone 1 of 45, zone 2 of 36, and 3 of 13. While in zone 4 of 39, zone 5 of 25, and zone 6 of 17. At amount of chlorophyll a, stomata index and chlorophyll amount b of the region in the direction of the wind is significantly different to the radius. While the chlorophyll amount of b in the area that is not in the direction of the wind direction does not differ significantly to the radius. While in zone 4 of 39, zone 5 of 25, and zone 6 of 17. There are different levels of chlorophyll a, chlorophyll b levels, and stomata indexes in areas that are in the direction of wind and areas that are not in the direction of wind direction from pollutant sources.

**Keywords:** Amount of chlorophyll a, Amount chlorophyll b, Stomata index, Widuri leaf (*Calotropis gigantea* L.), radius.