Lokasi Golongan Senyawa Potensial Fotoprotektif Daun Bogem (*Sonneratia caseolaris* (L.) Engler)

INTISARI

Bogem (*Sonneratia caseolaris* (L.) Engler) merupakan salah satu spesies mangrove di pantai utara pulau Jawa. Ekstrak daun bogem berpotensi dikembangkan sebagai bahan tabir surya karena mengandung senyawa fenolik. Kajian lokasi golongan senyawa fenolik pada jaringan daun bogem penting dilakukan untuk mengetahui pola akumulasinya. Penelitian ini bertujuan untuk menganalisis hasil ekstraksi jaringan epidermis yang terpisah dari mesofil, serta menganalisis perbedaan nilai SPF, kadar fenol, flavonoid, dan tanin ekstrak epidermis, mesofil, dan daun utuh. Epidermis diisolasi dengan teknik *Carborundum Abration* (CA). Pengukuran nilai SPF (*Sun Protection Factor*) dilakukan dengan metode Petro, sedangkan pengukuran kadar fenol, flavonoid, dan tanin total dilakukan metode kolorimetris. Hasil penelitian menunjukkan bahwa ekstraksi jaringan epidermis dan mesofil daun bogem menghasilkan total ekstrak yang lebih sedikit daripada ekstrak daun utuh. Pengukuran SPF epidermis memberikan nilai paling tinggi (1,538 ± 0,08), disusul mesofil (1,516 ± 0,08), dan daun utuh (1,517 ± 0,03). Kadar fenol total epidermis juga paling tinggi (18,65 mgEAG/g ± 0,14), disusul mesofil (17,71 mgEAG/g ± 0,24), dan daun utuh (13,30 mgEAG/g ± 0,24). Kadar flavonoid total dari yang paling tinggi ke rendah adalah epidermis (79,95 mgEQE/g ± 3,44), mesofil (52,03 mgEQE/g ± 0,57), dan daun utuh (47,66 mgEQE/g ± 0,95). Kadar tanin total epidermis paling tinggi (100,33 mgEAT/g ± 4,42), disusul mesofil (64,46 mgEAT/g ± 0,72), dan daun utuh (58,83 mgEAT/g ± 1,22). Berdasarkan hasil tersebut, disimpulkan bahwa teknik CA dapat digunakan untuk ekstraksi jaringan epidermis daun bogem. Selanjutnya, nilai SPF serta kadar fenol, flavonoid, dan tanin total epidermis lebih tinggi daripada mesofil.

Kata kunci: *Sonneratia caseolaris* (L.) Engler, metabolit sekunder, fotoprotektif, SPF, anatomi daun

Location of Bogem (*Sonneratia caseolaris* (L.) Engler) Leaves Potential Photo-protective Group Compounds

ABSTRACT

Bogem (*Sonneratia caseolaris* (L.) Engler) is one of mangrove species in Java island north beach. Bogem leaf extract has potency to be developed as sunscreen because it contains phenolic compounds. Study on location of potential photo-protective group compounds in bogem leaves is important for getting information about accumulation pattern of compounds. This research has purposes to analyze extract that is resulted from epidermis extraction which is done separated from mesophyll, and also to analyze the differences of SPF value, total levels of phenols, flavonoids, and tannins in epidermis, mesophyll, and whole leaf extracts. The epidermis was isolated by Carborundum Abrasion (CA) technique. Measurement of SPF (Sun Protection Factor) value was conducted by Petro method, while measuring the total levels of phenols, flavonoids, and tannins carried colorimetries method. The results showed that the extraction of epidermal and mesophyll tissue of bogem leaf produce a total extract that fewer than whole leaf extract. SPF measurements of epidermis gives the highest value (1,538 ± 0,08), followed by mesophyll (1,516 ± 0,08), and leaves intact (1,517 ± 0,03). Total phenol content of the epidermis is also the highest (18,65 mgEAG/g ± 0,14), followed by mesophyll (17,71 mgEAG/g ± 0,24), and leaves intact (13,30 mgEAG/g ± 0,24). Total flavonoid levels from the highest to the lowest are the epidermis (79,95 mgEQE/g ± 3,44), followed by mesophyll (52,03 mgEQE/g ± 0,57), and leaves intact (47,66 mgEQE/g ± 0,95). Total tannin levels of the epidermis is highest (100,33 mgEAT/g ± 4,42), followed by mesophyll (64,46 mgEAT/g ± 0,72), and leaves intact (58,83 mgEAT/g ± 1,22). Based on these results, it was concluded that the CA technique can be used for the epidermal extraction of bogem leaf. Furthermore, the value of SPF and total levels of phenols, flavonoids, and tannins of epidermis are higher than mesophyll.

Keyword: *Sonneratia caseolaris* (L.) Engler, secondary metabolite, photo-protective, SPF, leaf anatomy