

Komposisi Kimia Ekstraktif Kulit Luar dan Dalam Kayu *Araucaria cunninghamii*, *Araucaria papuana*, *Agathis loranthifolia* dan *Podocarpus imbricartus*

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INTISARI

Kulit merupakan bagian pohon yang proporsinya sekitar 10-15%. Penggunaan kulit kayu masih sebatas untuk bahan bakar walaupun kandungan polifenolnya yang tinggi. Penelitian ini bertujuan untuk mengetahui kandungan kimia yang ada di kulit kayu dari empat spesies pohon konifer yaitu *Araucaria cunninghamii*, *Araucaria papuana*, *Agathis loranthifolia*, dan *Podocarpus imbricartus*.

Uji kimia berupa analisis ekstraktif, diharapkan bermanfaat untuk pengetahuan penyediaan bahan baku dasar organik alam. Kadar ekstraktif, kadar suberin, fenolat, flavanoid, flavanol, bilangan Stiasny, dan nilai pH merupakan parameter yang diamati. Ekstraksi secara berurutan dilakukan pada masing-masing sampel kulit diekstrak menggunakan pelarut toluena, etanol, air panas, dan kelarutan dalam NaOH 1%. Uji senyawa berupa kadar fenolat total, kadar flavonoid, kadar flavanol dilakukan metode Follin-Ciocalteu, uji vanilin-HCl, dan uji aluminium triklorida (AlCl₃). Uji bilangan Stiasny mengacu pada metode tanin formaldehida dan kadar suberin dengan pelarut sodium metoksida.

Hasil kadar ekstrak toluena, etanol, dan air panas berkisar antara 1,66 - 2,02%; 4,66 - 5,25%; dan 1,85 - 2,61% secara berurutan. Nilai kadar ekstraktif tertinggi terdapat pada spesies *P. imbricartus*. Selanjutnya, hasil suberin tertinggi (3,5%) terdapat pada spesies *A. cunninghamii* dan terendah (1,7%) spesies *P. imbricartus*. Tingginya nilai kadar fenolat total (114,7 - 228,4 mg SAG/ g ekstrak), kadar flavonoid (93,3 - 196,2 mg QE/g ekstrak), dan kadar flavanol (113,6 - 196,9 mg SK/ g ekstrak) pada keempat spesies ini mengindikasikan potensi sebagai bahan dasar antioksidan, antibakteri, dan perekat. Nilai kelarutan dalam NaOH 1% berkisar antara 31,8 - 56,5% dan bilangan Stiasny antara 23,6 - 38,6% sedangkan kisaran pH 4,25—6,35. Secara umum, penelitian ini menunjukkan kulit luar lebih tinggi nilainya dibandingkan kulit dalam untuk parameter kadar polifenolat, suberin, bilangan Stiasny, larutan dalam NaOH 1%, dan pH.

Kata kunci : kulit luar, kulit dalam, polifenol, konifer, suberin, bilangan Stiasny.

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Chemical Composition of Outer and Inner Bark Extractives of Wood *Araucaria cunninghamii*, *Araucaria papuana*, *Agathis loranthifolia*, and *Podocarpus imbricartus*

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ABSTRACT

Bark is part of the tree which is about 10-15% proportion. The utilization of bark remains only for the fuel even its has high content of polyphenols. This research aimed to determine the content of the bark. The extractive from four coniferous tree species are *A. cunninghamii*, *A. papuana*, *A. Loranthifolia*, and *P. Imbricartus*.

Chemical determination is expected to provide the knowledge of the provision of nature organic raw materials. Extractive content, suberin content, phenolic, flavonoid, flavanol, Stiasny number, and pH value were observed as the parameters for this research. The succesively extraction on bark sample was extracted using toluene, ethanol, hot water, and NaOH 1%. The content of phenolic, flavonoid, and flavanol were analyzed by Follin-Ciocalteu assay, vanilin HCl assay, and AlCl₃ assay. The Stiasny number test refered to the tannin formaldehyde method as well as the suberin content was obtained the sodium methoxide.

The results showed the content of toluene extract, ethanol, and hot water extracts ranged 1.66 - 2.02%; 4.66 - 5.25%; and 1.85 - 2.61% respectively. The highest extractive content was obtained from the bark of *P. Imbricartus*. Further, the highest suberin content (3.5%) was found in *A. Cunninghamii* and the lowest (1.7 %) was in *P. Imbricartus*. The high levels of total phenolic content (114.7-228.4 mg SAG/ g extract), flavonoid content (93.3-196.2 mg QE/g extract), and flavanol content (113.6-196.9 mg SK/ g extract) in these four species indicate that the potentially source of organic chemicals for antioxidant, antibacterial, and adhesive agents. The value of solubility in NaOH 1% ranged from 31.8-56.5% and Stiasny number between 23.6-38.6%, while the pH range was 4.25-6.35. Generally, this research showed outer bark has higher value than the inner bark for the amount of poliphenol, suberin, Stiasny number, NaOH 1%, and pH value.

Keywords: outer bark, inner bark, poliphenol, coniferous, suberin, Stiasny number.

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