

**PEMANFAATAN ASAP CAIR LIMBAH DESTILASI DAUN DAN  
RANTING KAYU PUTIH SEBAGAI KOAGULAN GETAH KARET  
(*Hevea brasiliensis* M.)**

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**INTISARI**

Kapasitas produksi daun kayu putih di Indonesia mencapai 37.669,59 ton/tahun dengan produksi rata-rata minyak kayu putih sebesar 400 ton/tahun. Di pabrik pengolahan kayu putih, limbah destilasi dibiarkan menjadi limbah. Salah satu alternatif pemanfaatan limbah biomassa tersebut adalah memanfaatkannya menjadi bahan baku asap cair. Asap cair memiliki banyak kegunaan, diantaranya menggumpalkan getah karet. Penelitian ini bertujuan untuk mengetahui pengaruh komposisi ranting dan daun limbah destilasi kayu putih dan konsentrasi asap cair terhadap kualitas penggumpalan getah karet.

Penelitian ini menggunakan komposisi ranting dan daun 1:0, 2:1, 3:1, 4:1, dan 0:1, kemudian dilakukan proses pirolisis pada suhu 300°C selama 3 jam dan diperoleh asap cair. Lima jenis asap cair tersebut diuji kualitasnya meliputi nilai pH, berat jenis, kadar asam asetat, kadar fenol, dan kadar karbonil. Masing-masing asap cair diencerkan menjadi konsentrasi 5%, 10%, dan 15%. Asap cair dari tiap konsentrasi diambil 2 ml dan diaplikasikan untuk menggumpalkan getah karet. Selanjutnya dihitung waktu penggumpalan, rendemen, kadar karet kering, warna, tekstur, dan aromanya.

Hasil penelitian menunjukkan bahwa asap cair dapat menggumpalkan getah karet dalam waktu 7,82-97 menit, rendemen koagulum yang dihasilkan antara 8,19%-32,26%, kadar karet kering sebesar 11,01%-30,56%, warna koagulum putih dan beraroma asap cair. Semua koagulum yang dihasilkan bertekstur lunak. Interaksi faktor perbandingan bahan baku asap cair dan konsentrasi berpengaruh sangat nyata terhadap lama penggumpalan, rendemen, kadar karet kering, dan warna lateks yang digumpalkan. Sementara itu, aroma koagulum hanya dipengaruhi oleh faktor konsentrasi asap cair. Berdasarkan hasil penelitian, terbukti bahwa asap cair mampu mempercepat waktu penggumpalan dan memberikan aroma asap cair pada koagulum dibandingkan dengan koagulum hasil penggumpalan alami/tanpa asap cair.

Kata kunci : asap cair; koagulasi; getah karet; limbah destilasi kayu putih.

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**UTILIZATION OF LIQUID SMOKE FROM CAJUPUT TWIGS AND  
LEAVES DISTILLATION WASTE AS LATEX COAGULANT (*Hevea  
brasiliensis* M.)**

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**ABSTRACT**

Production capacity of cajuput leaves in Indonesia is up to 37,669.59 ton/year and produces for about 400 ton/year of cajuput oil. In the cajuput processing factory, solid waste will be trash. One of the alternative way to handle the waste was by using it as a raw material for liquid smoke. Liquid smoke has some benefits, one of them is for latex coagulation. The objective of this research is to give an overview about the effect of composition between twigs and leaves from waste of cajuput distillation and its concentration in the quality of latex coagulation.

This research used composition twigs and leaves 1:0, 2:1, 3:1, 4:1, and 0:1, then it was pyrolysed in 300°C for 3 hours to get liquid smoke. The five types of liquid smoke quality were tested included pH, specific gravity, acid content, phenol content, and carbonil content. Each of them were diluted in 5%, 10%, and 15% concentration. The liquid smoke from each concentration is taken for about 2 ml and applicated in latex coagulation. Furthermore, the coagulating time, coagulum yield, dry rubber content, color, texture, and latex odour were measured.

The result of this study showed that liquid smoke could coagulate latex in 7.82-97 minutes, coagulum yields were ranged 8.19%-32.26%, dry rubber content ranged from 11.01%-30.56%, the color of coagulum was white and it had liquid smoke odour. All the coagulum had soft texture properties. Interaction between two factors significantly affects the coagulation time, coagulum yield, dry rubber content, and color of coagulum. While the odour of coagulum was solely affected by concentration of liquid smoke factor. Based on this research, liquid smoke could accelerate the coagulating time and gives coagulum a liquid smoke odour than coagulum that naturally coagulated/without liquid smoke addition.

Keywords: liquid smoke; coagulation; latex; waste of cajuput distillation.

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