

**PENGARUH KONSENTRASI BAHAN KIMIA MALEAT ANHIDRIDA
TERHADAP GONDORUKEN MALEAT DARI GETAH PINUS MERKUSII
(Effect of Maleic Anhydride Concentration on Properties of Maleo-pimaric Rosin
Directly Made from Merkus Pine Resin)**

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ABSTRACT

This research aimed to look at the influence of maleic anhydride concentration on yield and properties of maleopimaric rosin directly processed from pine (*Pinus merkusii*) resin. In this process, pine resin was added with maleic anhydride solution, turpentine oil and water. A mixture was afterward distilled for 5 hours in total, covering 2 hours to reach the temperature 175 oC and 3 hours to maintain this temperature. The maleic anhydride concentration used in this research varied 0, 4, 6, 8, 10 and 12%, respectively. Maleopimaric rosins were then tested of their physico-chemical properties, and the obtained data were analysed using the GLM (Generated linear model) procedure in a computer package. Results of the research indicated that addition of maleic anhydride into pine resin during its processing increased yield and improved the acid and saponification values of the resulting maleopimaric rosin. It was also tended to increase impurities content in maleopimaric rosin. This product had a similar colour quality to WW standard rosin and had better quality compared to Chinese and American maleopimaric rosin. Processing pine resin with the addition of maleic anhydride at 6% gave a quality that fulfilled the requirement of Chinese and American maleopimaric rosin softening point. Meanwhile, the addition of maleic anhydride at 12% gave a similarity to the first quality of American maleopimaric rosin. Based on the acid and saponification values, the maleopimaric rosin of that resulted in this research fulfilled the requirement of the second quality of Chinese maleopimaric rosin.

Key words: Maleic anhydride, merkus pine resin, distilling process, maleopimaric rosin1

ABSTRAK

Penelitian ini bertujuan untuk mengetahui pengaruh konsentrasi asam maleat terhadap rendemen dan kualitas gondorukem maleat yang diolah langsung dari getah pinus. Dalam pengolahan getah pinus ditambah larutan asam maleat, minyak terpentin dan air secukupnya. Setelah itu disuling selama 5 jam, di mana untuk mencapai suhu 175 oC diperkirakan memerlukan waktu 2 jam, lalu dijaga pada suhu tersebut selama 3 jam. Persentase asam maleat yang digunakan terdiri dari 0, 4, 6, 8, 10 dan 12%. Gondorukem maleat yang dihasilkan selanjutnya diuji rendemen dan sifat fisiko-kimianya. Data yang diperoleh dianalisis dengan prosedur GLM paket komputer. Hasil penelitian menunjukkan bahwa penambahan persentase asam maleat pada pengolahan getah pinus meningkatkan rendemen, titik lunak, bilangan asam dan bilangan penyabunan, serta cenderung meningkatkan kadar kotoran gondorukem maleat yang dihasilkan. Gondorukem maleat yang dihasilkan mempunyai kualitas WW dan kualitas ini lebih baik dibandingkan dengan gondorukem maleat produksi Cina dan Amerika. Pengolahan getah pinus dengan penambahan asam maleat 6% menghasilkan gondorukem maleat yang memenuhi persyaratan kualitas titik lunak gondorukem maleat dari Cina maupun Amerika, sedangkan penambahan asam maleat 12% menghasilkan gondorukem maleat yang setara dengan kualitas pertama gondorukem maleat Amerika. Berdasarkan nilai bilangan asam dan bilangan penyabunan, gondorukem maleat yang dihasilkan dari penelitian ini sudah memenuhi persyaratan kualitas kedua dari gondorukem maleat produksi Cina.

Kata kunci: Asam maleat, getah pinus, penyulingan, gondorukem maleat