PENGARUH KETINGGIAN TEMPAT DAN MUTU GETAH *Pinus merkusii* TERHADAP KUALITAS TERPENTIN DI KPH BANYUMAS BARAT PERUM PERHUTANI

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INTISARI

Terpentin merupakan produk hasil olahan dari getah *Pinus merkusii* yang mempunyai nilai jual tinggi. Kualitas terpentin salah satunya dipengaruhi oleh mutu getah pinus yang diambil dari beberapa ketinggian tempat. Penelitian ini dilakukan untuk mengetahui pengaruh ketinggian tempat dan mutu getah *Pinus merkusii* terhadap rendemen, komposisi kimia, dan sifat fisiko kimia minyak terpentin.

Penelitian ini dilakukan dengan menggunakan percobaan dua faktor dengan rancangan dasar Rancangan Acak Lengkap. Faktor pertama yaitu ketinggian tempat tumbuh pohon (121 mdpl dan 722 mdpl), faktor kedua yaitu mutu getah pinus (super premium, premium, mutu I, dan mutu II) Getah yang diperoleh dari beberapa ketinggian tempat dan mutu tersebut kemudian dimasak untuk menghasilkan gondorukem dan terpentin Selanjutnya terpentin yang dihasilkan oleh masing-masing faktor diuji komponen kimia dengan GC-MS dan diuji kualitannya berdasarkan SNI 7633:2020.

Hasil penelitian menunjukkan faktor ketinggian tempat dan mutu getah berpengaruh nyata terhadap rendemen minyak terpentin. Komponen kimia utama minyak terpentin berupa *α-pinene* menunjukkan hasil yang berbeda antar ketinggian tempat dan mutu getah. Hasil menunjukkan bahwa ketinggian tempat merupakan faktor utama dalam menentukan kandungan *α-pinene* pada minyak terpentin *Pinus merkusii*, sedangkan mutu getah hanya berperan kecil. Kadar *α-pinene* lebih tinggi pada ketinggian tempat 121 mdpl dibanding dengan ketinggian tempat 722 mdpl. Ketinggian tempat tidak berpengaruh nyata terhadap sifat fisik minyak terpentin, sedangkan mutu getah memberikan pengaruh signifikan terhadap beberapa sifat seperti putaran optik dan sisa penguapan. Interaksi ketinggian tempat dan mutu getah pinus berpengaruh nyata terhadap putaran optik dan sisa penguapan minyak terpentin.

Kata kunci: ketinggian tempat, terpentin, kualitas getah pinus, rendemen, kualitas terpentin

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EFFECT OF ALTITUDE AND GRADE OF *Pinus merkusii* OLEORSIN ON QUALITY OF TERPENTINE IN KPH BANYUMAS BARAT PERUM PERHUTANI

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ABSTRACT

Turpentine is product from *Pinus merkusii* oleoresin which has a high selling value. The quality of turpentine is influenced by the quality of pine oleoresin collected from several altitudes. Therefore, it is necessary to conduct research on the effect of altitude and quality of *Pinus merkusii* tapping on the quality of turpentine. The purpose of this study were to determine the effect of altitude and quality of *Pinus merkusii* oleoresin on the yield, physical properties, and chemical compounds of turpentine oil.

The study was conducted using a two-factor experiment with a basic design of a Completely Randomized Design. The first factor is the height of the tree growing (121 masl and 722 masl), the second factor is the quality of pine oleoresin (super premium, premium, quality I, and quality II). Pine oleoresin obtained from several heights and qualities is then cooked to produce rosin and turpentine. Furthermore, the turpentine produced by each factor is tested for chemical components using GC-MS and its quality is tested based on SNI 7633:2020.

The results showed that the interaction between altitude and pine resin quality was not statistically significant of turpentine oil yield. The main chemical component of turpentine oil, *α-pinene*, showed different results between altitude and resin quality. Altitude was the main factor in determining the *α-pinene* content in *Pinus merkusii* turpentine oil, while resin quality played only a small role. *α-pinene* levels were higher at an altitude of 121 masl compared to an altitude of 722 masl. The physical properties of turpentine oil were not significantly affected by altitude, whereas several properties, such as optical rotation and residual evaporation, were significantly affected by resin quality. In addition, the optical rotation and residual evaporation of turpentine oil were significantly affected by the interaction between altitude and pine resin quality

Keywords: height, turpentine, pine quality, yield, turpentine quality

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