PENGARUH SUHU DAN LAMA WAKTU PEMASAKAN TERHADAP KUALITAS GONDORUKEM TUSAM DI KPH BANYUMAS BARAT

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INTISARI

Gondorukem sebagai Hasil Hutan Bukan Kayu (HHBK) memiliki nilai ekonomi tinggi dan berperan penting dalam industri kimia sebagai bahan baku cat, vernis, tinta cetak, sabun, dan kosmetik. Kualitas gondorukem sangat dipengaruhi oleh parameter pemasakan terutama suhu dan lama waktu pemanasan. Penelitian ini bertujuan mengkaji pengaruh suhu dan lama pemasakan terhadap kualitas gondorukem tusam (*Pinus merkusii*) dari Kesatuan Pemangkuan Hutan (KPH) Banyumas Barat serta menentukan perlakuan optimal berdasarkan parameter kualitas sesuai Standar Nasional Indonesia (SNI) 7636:2020.

Penelitian menggunakan metode eksperimental dengan Rancangan Acak Lengkap (RAL) dua faktor: suhu (130°C, 140°C, dan 150°C) dan lama pemasakan (1 jam, 1,5 jam, dan 2 jam), masing-masing dengan tiga ulangan. Getah tusam diperoleh melalui metode sadap koakan pada pohon kelas umur IV dengan umur 18 tahun dan diameternya sebesar 28 cm . Proses pemasakan menggunakan mantel pemanas dan gondorukem yang dihasilkan diuji berdasarkan parameter rendemen, titik lunak, bilangan asam, bilangan penyabunan, kadar abu, kadar bahan tak larut toluena, bagian yang menguap, dan warna.

Hasil penelitian menunjukkan bahwa faktor waktu dan suhu berpengaruh signifikan terhadap sebagian besar parameter kualitas. Lama pemasakan berpengaruh sangat signifikan terhadap kadar abu dan titik lunak, sementara suhu pemasakan berpengaruh signifikan terhadap kadar bahan tak larut toluena dan bilangan asam. Perlakuan terbaik ditemukan pada kombinasi suhu 150°C dan waktu 1 jam yang menghasilkan gondorukem dengan kadar abu rendah (0,014%), titik lunak tinggi (76,33°C), warna cerah (nilai warna 2,83), serta bilangan asam dan penyabunan dalam kisaran mutu A/super menurut SNI. Temuan ini menegaskan pentingnya kontrol suhu dan waktu pemasakan untuk menghasilkan gondorukem berkualitas tinggi yang kompetitif di pasar internasional.

Kata kunci: gondorukem, *Pinus merkusii*, suhu pemasakan, lama waktu pemasakan, kualitas.

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THE EFFECT OF TEMPERATURE AND DURATION ON THE QUALITY OF GONDORUKEM IN KPH BANYUMAS BARAT

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ABSTRACT

Rosin as a valuable non-timber forest product plays a crucial role in various chemical industries including paints, varnishes, inks, soaps, and cosmetics. The quality of rosin is strongly influenced by processing conditions, particularly cooking temperature and duration. This study aimed to examine the effects of temperature and cooking duration on the quality of *Pinus merkusii* rosin from the Banyumas Barat Forest Management Unit (KPH), and to determine the optimal treatment that yields the best product quality according to Indonesian National Standard (SNI) 7636:2020.

An experimental approach was employed using a Completely Randomized Design (CRD) with two factors: temperature (130°C, 140°C, and 150°C) and cooking duration (1 hour, 1.5 hours, and 2 hours), each replicated three times. Pine resin was collected using the boring method from trees in age class IV the age of trees is 18 years old and the diameter of the trees is 28 cm . The distillation process was conducted using a mantle heater, and the resulting rosin was tested for various quality parameters including yield, softening point, acid number, saponification number, ash content, toluene-insoluble matter, volatile content, and color.

Results indicated that both cooking time and temperature significantly affected several quality parameters. Cooking time had a highly significant effect on ash content and softening point, while temperature significantly influenced acid number and toluene-insoluble content. The best treatment was found at 150°C for 1 hour, yielding rosin with low ash content (0.014%), high softening point (76.33°C), bright color (color value 2.83), and acid number and saponification number within the superior/premium grade as classified by SNI. These findings highlight the importance of precise temperature and time control in rosin production to ensure consistent high-quality products that meet international market standards.

Keywords: rosin, *Pinus merkusii*, cooking temperature, cooking time, quality.

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