

POLA SEBARAN DIAMETER TEGAKAN HUTAN RAKYAT DI WILAYAH KERJA CABANG DINAS KEHUTANAN MALANG

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INTISARI

Wilayah kerja Cabang Dinas Kehutanan (CDK) Malang memiliki potensi hutan rakyat yang luas. Hutan rakyat memiliki potensi ekonomi dan berperan memberikan manfaat jasa lingkungan, serta manfaat sosial budaya. Salah satu informasi penting dalam pengelolaan hutan rakyat yang berkelanjutan adalah struktur tegakan, terutama sebaran diameter pohon. Penelitian ini bertujuan untuk menerapkan sebaran Weibull dalam menggambarkan sebaran diameter hutan rakyat serta mengidentifikasi pola sebaran diameter dan arah pengelolaan tegakan hutan rakyat di wilayah kerja CDK Malang.

Penelitian menggunakan data sekunder hasil inventarisasi CDK Malang pada 50 petak ukur yang tersebar di wilayah kerja CDK Malang dengan teknik sampling *multistage random sampling*. Data dianalisis dengan mengelompokkan diameter ke dalam kelas-kelas yang selanjutnya dilakukan *distribution fitting* dengan metode estimasi *Moments* dan divalidasi dengan uji *Kolmogorov-smirnov*. Pengelompokkan ragam pola sebaran diameter dilakukan berdasarkan rentang jumlah pohon per hektar dan rentang diameter.

Hasil penelitian menunjukkan bahwa Weibull parameter tiga mampu menggambarkan sebaran diameter tegakan hutan rakyat di wilayah kerja CDK Malang pada berbagai kondisi kepadatan pohon. Terdapat 9 pola sebaran diameter yang teridentifikasi dengan rekomendasi arah pengelolaan yang berbeda. Rekomendasi arah pengelolaan pada setiap pola, yaitu: Pola 1 pembangunan hutan rakyat dan pemeliharaan intensif, Pola 2 pembangunan hutan rakyat dan pemeliharaan lanjutan, Pola 3 pembangunan hutan rakyat dan pemanenan selektif, Pola 4 pengayaan tanaman dan pemeliharaan intensif, Pola 5 pengayaan tanaman dan pemeliharaan lanjutan, Pola 6 pengayaan tanaman dan pemanenan selektif, Pola 7 penanaman dengan pola *agroforestry* dan pemeliharaan intensif, Pola 8 penanaman dengan pola *agroforestry* dan pemeliharaan lanjutan, serta Pola 9 penanaman dengan pola *agroforestry* dan pemanenan selektif.

Kata Kunci: Hutan rakyat, sebaran Weibull Parameter tiga, pola sebaran diameter

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DIAMETER DISTRIBUTION PATTERN OF PRIVATELY OWNED FOREST STANDS IN THE CABANG DINAS KEHUTANAN MALANG

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ABSTRACT

The working area of the Cabang Dinas Kehutanan (CDK) Malang has vast privately owned forest potential. Privately owned forests have economic potential and provide environmental services as well as socio-cultural benefits. One important piece of information in sustainable private forest management is stand structure, especially tree diameter distribution. This study aims to apply the Weibull distribution to describe the diameter distribution of privately owned forests and identify the diameter distribution pattern and direction of privately owned forest stand management in the working area of the CDK Malang.

The study uses secondary data from the CDK Malang inventory of 50 sample plots spread across the working area of the CDK Malang using multistage random sampling techniques. The data were analyzed by grouping the diameters into classes, which were then subjected to distribution fitting using the Moments estimation method and validated with the Kolmogorov-smirnov test. The grouping of various diameter distribution patterns was based on the range of trees per hectare and the diameter range.

The results showed that the three Weibull parameters were able to describe the diameter distribution of privately owned forests in the CDK Malang working area under various tree density conditions. There were nine identified diameter distribution patterns with different management recommendations. The management recommendations for each pattern were as follows: Pattern 1: privately owned forest development and intensive maintenance; Pattern 2: privately owned forest development and continued maintenance; Pattern 3: privately owned forest development and selective harvesting; Pattern 4: plant enrichment and intensive maintenance; Pattern 5: tree enrichment and continued maintenance, Pattern 6: tree enrichment and selective harvesting, Pattern 7: planting with agroforestry patterns and intensive maintenance, Pattern 8: planting with agroforestry patterns and continued maintenance, Pattern 9: planting with agroforestry patterns and selective harvesting.

Keywords: Privately owned forests, three-parameter Weibull distribution, diameter distribution pattern

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