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**Pendugaan Intersepsi Tajuk Tegakan Jati Mega (Tectona grandis) Menggunakan Revisi Model Gash 1995 di
Petak 13 Hutan Pendidikan Wanagama I Gunungkidul**
Agian Wahyu Ningrum, Dr.Agr.Sc. Ir. Hatma Suryatmojo, S.Hut., M.Si., IPU., ASEAN Eng.
Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

PENDUGAAN INTERSEPSI TAJUK TEGAKAN JATI MEGA (*Tectona grandis*) MENGGUNAKAN REVISI MODEL GASH 1995 DI PETAK 13 HUTAN PENDIDIKAN WANAGAMA I GUNUNGKIDUL

Agian Wahyu Ningrum[1], Hatma Suryatmojo[2]

INTISARI

Intersepsi tajuk merupakan proses tertahannya air hujan oleh kanopi vegetasi sebelum mencapai permukaan tanah yang berperan penting dalam neraca air dan pengurangan limpasan permukaan pada ekosistem hutan. Penelitian terdahulu di Petak 13 Hutan Pendidikan Wanagama I menunjukkan nilai intersepsi tajuk sebesar 33,72% pada jati lokal dan 51,99% pada jati mega, tetapi keduanya masih menggunakan pendekatan pengukuran langsung tanpa penerapan model hidrologi. Penelitian ini bertujuan menganalisis nilai aliran tembus (*throughfall*), aliran batang (*stemflow*), dan intersepsi tajuk, serta menguji kesesuaian Revisi Model Gash 1995 dalam menduga intersepsi tajuk pada tegakan Jati Mega (*Tectona grandis*) di lokasi tersebut.

Penelitian dilaksanakan selama November 2025–April 2026 pada plot tegakan Jati Mega berukuran 10 × 12 m menggunakan pendekatan keseimbangan volume, meliputi pengukuran curah hujan, *throughfall*, dan *stemflow* pada setiap kejadian hujan. Kerapatan tajuk diukur menggunakan tabung okuler untuk menghitung *Leaf Area Index* (LAI) berdasarkan persamaan Beer-Lambert, sedangkan parameter Revisi Model Gash 1995 diperoleh melalui regresi linear antara curah hujan dengan intersepsi, *throughfall*, dan *stemflow* hasil pengukuran lapangan, kemudian dievaluasi terhadap hasil pengukuran langsung.

Dari 75 kejadian hujan tercatat, 34 kejadian memenuhi kriteria analisis. Diketahui kerapatan tajuk 73,34% (kategori rapat) dan LAI 2,60 (kategori tinggi), hasil menunjukkan rata-rata aliran tembus 86,21%, aliran batang 1,18%, dan intersepsi tajuk 15,42% dari total curah hujan. Pendugaan Revisi Model Gash 1995 menghasilkan intersepsi 14,01%, dengan selisih hanya 1,41% terhadap pengukuran lapangan, menunjukkan model layak digunakan sebagai pendekatan analitis dalam menduga intersepsi tajuk pada tegakan Jati Mega di Wanagama I.

Kata Kunci: Intersepsi Tajuk, Jati Mega, Revisi Model Gash 1995, Hidrologi DAS.

[1] Mahasiswa Fakultas Kehutanan UGM
[2] Staff Pengajar Fakultas Kehutanan UGM

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ESTIMATION OF CANOPY INTERCEPTION OF MEGA TEAK (*Tectona grandis*) STANDS USING THE REVISED GASH MODEL 1995 IN PLOT 13 OF WANAGAMA I EDUCATION FOREST, GUNUNGKIDUL

Agian Wahyu Ningrum[1], Hatma Suryatmojo [2]

ABSTRACT

Canopy interception is the process by which rainfall is temporarily retained by plant canopies before reaching the ground surface, playing an important role in the water balance and the reduction of surface runoff within forest ecosystems. Previous studies in Plot 13 of Wanagama I Education Forest reported canopy interception values of 33.72% for local teak stands and 51.99% for Mega teak stands, however, both studies relied solely on direct field measurements without applying a hydrological model. This study aimed to analyze the values of throughfall, stemflow, and canopy interception, as well as to examine the applicability of the Revised Gash Model 1995 in estimating canopy interception in Mega teak (Tectona grandis) stands at the study site.

The research was conducted over six months (November 2025–April 2026) on a 10 × 12 m Mega teak plot using a volume balance approach, involving the measurement of gross rainfall, throughfall, and stemflow for each rainfall event. Canopy density was measured using an ocular tube to estimate the Leaf Area Index (LAI) based on the Beer–Lambert equation, while the parameters of the Revised Gash Model 1995 were derived through linear regression analysis between gross rainfall and the measured interception, throughfall, and stemflow. The model estimates were subsequently evaluated against the field measurement results.

A total of 75 recorded rainfall events, 34 were considered valid for analysis. With a mean canopy density of 73.34% (classified as dense) and a mean LAI of 2.60 (classified as high), The results showed a mean throughfall of 86.21%, mean stemflow of 1.18%, and mean canopy interception of 15.42% of total rainfall,. The Revised Gash Model 1995 estimated interception at 14.01%, differing by only 1.41% from the field measurements, indicating that the model is well-suited as an analytical approach for estimating canopy interception in Mega teak stands at Wanagama I Education Forest.

Keywords: *Canopy Interception*, *Mega Teak*, *Revised Gash Models 1995*, *Watershed Hydrology.*

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[1] Student of Faculty of Forestry UGM
[2] Lecturer of Faculty of Forestry UGM