# Potensi *Dodonaea viscosa* Jacq. Sebagai Pohon Perawat: Memfasilitasi Pertumbuhan *Kopsia arborea* Blume.

Oleh:

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## INTISARI

*Dodonaea viscosa* merupakan jenis pionir asli Taman Nasional Gunung Merapi pasca erupsi Merapi 2010. Di Papua pasca perladangan berpindah, kemunculan *D. viscosa* merupakan indikasi kesuburan lahan. Sebagai jenis pionir, *D. viscosa* berpotensi memfasilitasi pertumbuhan jenis lain melalui interaksi fasilitatif, melalui kontribusi biomassa terhadap ketersediaan hara dan simbiosis jamur mikoriza vesikular-arbuskular (MVA). Pada penelitian ini digunakan *Kopsia arborea* Blume. yang merupakan jenis asli Merapi sebagai tanaman target. Saat ini, keberadaan *K. arborea* jarang ditemukan di lereng Merapi, bahkan di bukit Pronojiwo yang dulunya melimpah. Penelitian ini bertujuan untuk mengeksplorasi potensi fasilitasi *D. viscosa* terhadap *K. arborea*, termasuk kontribusi biomassa, kandungan C-organik, N, P, dan K dalam tanah, serta keberadan jamur mikoriza pada sistem perakaran keduanya.

Penelitian dilakukan pada semai *D. viscosa* dan *K.arborea* hingga umur 3 bulan dengan menggunakan *Randomized Completely Block Design* (RCBD) dengan 5 blok sebagai ulangan. Perlakuan terdiri dari 2 faktor berupa pemberian tanaman perawat *D. viscosa* (2 level) dan pemberian serasah *D. viscosa* (4 level). Parameter yang diukur adalah pertumbuhan tinggi, diameter, biomassa kering semai, perakaran, karakteristik kimia tanah, dan persentase infeksi mikoriza. Data dianalisis menggunakan ANOVA dan dilakukan uji lanjut *Duncan Multiple Range Test* (DMRT).

Hasil penelitian menunjukkan bahwa *D. viscosa* mampu berperan sebagai tanaman perawat melalui serasahnya. Pada penelitian ini pemberian serasah sebanyak 1,5 - 2 gram/500 gram tanah memberikan hasil terbaik pada peningkatan pertumbuhan tinggi, diameter batang, dan biomassa *K.arborea* serta peningkatan kandungan C-organik, N, P, dan K dalam tanah. Kolonisasi mikoriza akar *D. viscosa* mencapai 64% dan meningkatkan infeksi mikoriza pada *K. arborea* sebesar 12%.

**Kata kunci:** *D. viscosa*, *K. arborea,* Tanaman perawat, pertumbuhan

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# *Dodonaea viscosa* Jacq. Potential as a Nurse Plant: Facilitating the Growth of *Kopsia arborea* Blume.

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## *ABSTRACT*

*Dodonaea viscosa* is a pioneer species native to Mount Merapi National Park following the 2010 eruption. In post-shifting cultivation areas in Papua, *D. viscosa* emerges and dominates the landscape. Its presence is considered an important indicator of soil fertility by local communities. As a pioneer species, *D. viscosa* has the potential to facilitate the growth of other plant species through facilitative interactions, symbiosis with vesicular-arbuscular mycorrhizal (VAM) fungi, and biomass contributions to nutrient availability. In this study, *Kopsia arborea* Blume. Merapi native species, was selected as the species target. Currently, *K. arborea* is rarely found in Merapi, including Pronojiwo Hill, where it was once abundant. This research aims to explore the facilitative potential of *D. viscosa* on *K. arborea*, including biomass contribution, soil organic carbon, N, P, and K content, and the role of mycorrhizae in the root systems of both species.

The research was conducted on *D. viscosa* and *K. arborea* seedlings up to three months of age using a Randomized Completely Block Design (RCBD) with five blocks of replicates. The experiment consisted of two treatment factors: the presence of D. viscosa as a nurse plant (2 levels) and the application of *D. viscosa* litter (4 levels). Measured parameters included seedling height, stem diameter, dry biomass, root development, soil chemical properties, and mycorrhizal infection percentage. Observational data were analyzed using ANOVA, followed by Duncan's Multiple Range Test (DMRT) for post-hoc comparison.

The results showed that *D. viscosa* has the potential as a nurse plant through facilitating the plant neighbor's with litter input. In this research, the application of 1,5 - 2 grams of litter per 500 grams of soil produced the best results in enhancing the height, stem diameter, and biomass of *K. arborea,* and increase in soil organic C, N, P, and K contents. Mycorrhizal colonization of *D. viscosa* reached 64%, contributing to a 12% increase in mycorrhizal infection in *K. arborea.*

***Keywords :*** *D. viscosa*, *K. arborea,* nurse plant, pioneer, growth