

RINGKASAN

Mikoriza arbuskular merupakan fungi tanah yang bersimbiosis dengan akar tanaman dan berperan penting dalam membantu penyerapan air serta unsur hara. Mikoriza arbuskular juga dikenal berperan sebagai agen hayati dalam pupuk hayati. Produksi inokulum mikoriza yang berkualitas dan dalam jumlah banyak dilakukan dengan cara perbanyakan mikoriza menggunakan tanaman inang dan media tanam yang sesuai untuk perkembangbiakannya. Penelitian ini bertujuan untuk: 1) Mengetahui pengaruh jenis media tanam terhadap perbanyakan inokulum mikoriza dari sumber yang berbeda dan pertumbuhan vegetatif jiwawut sebagai inang, 2) Membandingkan respon inokulum mikoriza dari sumber lokasi eksplorasi yang berbeda pada perbanyakan dengan tanaman inang jiwawut, dan 3) Mengetahui jenis media tanam dan sumber inokulum terbaik pada perbanyakan mikoriza dengan tanaman inang jiwawut.

Penelitian dilaksanakan di Laboratorium Perlindungan Tanaman, Ilmu Tanah, Agronomi dan Holtikultura, Agroekologi, dan *Screenhouse* Fakultas Pertanian, serta Laboratorium Riset Universitas Jenderal Soedirman. Penelitian dilaksanakan dari bulan April 2025 hingga September 2025. Rancangan yang digunakan adalah Rancangan Acak Kelompok (RAK) Faktorial dengan dua faktor. Faktor pertama adalah sumber inokulum, yaitu P1 = Tanpa Inokulum, P2 = Inokulum Mikoriza Tanaman Kopi Organik, P3 = Inokulum Mikoriza Tanaman Kopi Anorganik. Faktor kedua adalah jenis media tanam, yaitu N1 = Sekam 20% dan Tanah 80%, N2 = Arang Sekam 20% dan Tanah 80%, N3 = Kompos 20% dan Tanah 80%. Setiap perlakuan diulang sebanyak 3 kali. Variabel yang diamati meliputi tinggi tanaman (cm), bobot basah tanaman (g), bobot kering tanaman (g), volume akar (mL), jumlah spora akhir (spora/10 g tanah), infeksi akar (%), dan serapan P tanaman (g/tanaman). Hasil pengamatan dianalisis menggunakan analisis ragam (ANOVA) dengan uji F pada taraf kepercayaan 95%. Hasil analisis yang menunjukkan perbedaan nyata, maka dilanjutkan dengan uji jarak berganda *Duncan's Multiple Range Test/DMRT* pada taraf kepercayaan 95%.

Hasil penelitian menunjukkan bahwa perlakuan sumber inokulum dan jenis media tanam berpengaruh terhadap variabel pengamatan, tetapi interaksi perlakuan sumber inokulum dan jenis media tanam tidak berpengaruh terhadap seluruh variabel pengamatan. Jenis media tanam memengaruhi pertumbuhan vegetatif tanaman jiwawut sebagai inang mikoriza, namun tidak memengaruhi perbanyakan inokulum mikoriza. Jenis media tanam kompos 20% dan tanah 80% berpengaruh terhadap tinggi tanaman (55,1 cm), bobot basah tanaman (52,17 g), bobot kering tanaman (22,95 g), volume akar (15,80 mL), dan serapan P tanaman (1,73 g/tanaman). Inokulum mikoriza dari sumber lokasi eksplorasi yang berbeda menunjukkan kemampuan perbanyakan dan infeksi akar yang sama pada tanaman inang jiwawut. Media tanam kompos 20% dan tanah 80% merupakan media terbaik dalam mendukung pertumbuhan vegetatif tanaman jiwawut sebagai inang, sedangkan kedua sumber inokulum efektif digunakan pada perbanyakan mikoriza.

SUMMARY

Arbuscular mycorrhiza is a soil fungus that forms a symbiotic relationship with plant roots and plays an important role in assisting the absorption of water and nutrients. Arbuscular mycorrhiza is also known to act as a biological agent in biofertilizers. The production of high-quality mycorrhizal inoculum in large quantities is carried out by propagating mycorrhiza using host plants and suitable growing media for its development. This study aims to: 1) Determine the effect of different growing media on the propagation of mycorrhizal inoculum from various sources and on the vegetative growth of jewawut as a host, 2) Compare the responses of mycorrhizal inoculum from different exploration site sources in propagation using jojoba host plants, and 3) Identify the best type of growing media and inoculum source for mycorrhizal propagation with jewawut host plants.

The research was conducted at the Plant Protection, Soil Science, Agronomy and Horticulture, Agroecology, and Screenhouse Laboratories of the Faculty of Agriculture, as well as the Research Laboratory of Jenderal Soedirman University. The study was carried out from April 2025 to September 2025. The design used was a Factorial Randomized Block Design (RBD) with two factors. The first factor was the inoculum source, namely P1 = No Inoculum, P2 = Mycorrhizal Inoculum of Organic Coffee Plants, P3 = Mycorrhizal Inoculum of Inorganic Coffee Plants. The second factor was the type of growing medium, namely N1 = 20% Husk and 80% Soil, N2 = 20% Charred Husk and 80% Soil, N3 = 20% Compost and 80% Soil. Each treatment was repeated three times. The observed variables included plant height (cm), fresh plant weight (g), dry plant weight (g), root volume (mL), final spore count (spores/10 g of soil), root infection (%), and plant phosphorus uptake (g/plant). The observation results were analyzed using analysis of variance (ANOVA) with an F-test at a 95% confidence level. If the analysis results indicated a significant difference, it was then followed by Duncan's Multiple Range Test (DMRT) at a 95% confidence level.

The research results indicate that the treatment of inoculum sources and types of planting media affect the observed variables, but the interaction between inoculum source treatments and types of planting media does not affect any of the observed variables. The type of planting media influences the vegetative growth of sneutrass plants as a mycorrhizal host, but does not affect the multiplication of mycorrhizal inoculum. A planting medium composed of 20% compost and 80% soil significantly affects plant height (55.1 cm), fresh weight (52.17 g), dry weight (22.95 g), root volume (15.80 mL), and P uptake (1.73 g/plant). Mycorrhizal inoculum from different exploration locations shows the same capacity for multiplication and root infection in sneutrass host plants. A planting medium of 20% compost and 80% soil is the best medium to support the vegetative growth of sneutrass as the host plant, while both inoculum sources are effective for mycorrhizal propagation.