

ABSTRAK

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Program Studi : Biologi
Judul : Isolasi, Identifikasi, dan Karakteristik Pertumbuhan
Mikoriza Anggrek *Holomycotrophic Gastrodia crispa*
dalam Medium *Potato Dextrose Agar* dengan Variasi Suhu
Inkubasi
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Gastrodia crispa sebagai anggrek *holomycotrophic* endemik pegunungan Jawa Barat memiliki habitat pada tanah dengan serasah bambu dan pertumbuhannya sangat dipengaruhi oleh mikoriza. Kebutuhan kondisi lingkungan yang spesifik dan keberadaannya yang endemik, diduga memiliki simbiosis dengan fungi tertentu. Isolasi, identifikasi, dan uji pertumbuhan perlu dilakukan untuk mengetahui mikoriza simbiosis *G. crispa* dan pertumbuhan optimalnya. Penelitian telah berhasil mengisolasi dan mengidentifikasi mikoriza simbiosis *G. crispa* yang diperoleh dari Taman Nasional Gunung Halimun-Salak dan Taman Nasional Gunung Gede-Pangrango. Isolasi dilakukan berdasarkan teknik tanam langsung dan diinkubasi pada suhu 25 °C. Empat isolat berhasil diisolasi dari tiga sampel umbi semu *G. crispa*. Identifikasi fenotipik yang dibandingkan dengan kunci identifikasi menduga isolat merupakan genus *Acremonium*, *Penicillium*, *Trichoderma*, dan *mycelia sterilia*. Uji pertumbuhan menggunakan variasi medium dan suhu inkubasi dilakukan pada medium PDA dan PDB modifikasi di suhu 9 °C, 25 °C, dan 30 °C selama 25 hari. Medium PDA dan PDB modifikasi 1 menggunakan pelarut filtrat tanah, sementara PDA dan PDB modifikasi 2 menggunakan pelarut filtrat tanah dengan serasah bambu. Hasil uji keempat isolat mikoriza mendapatkan pertumbuhan optimal pada PDA dan PDB modifikasi di suhu 25 °C. Pertumbuhan *Acremonium* sp., *Penicillium* sp., dan *Trichoderma* sp. di medium PDA dan PDB modifikasi 1 dengan PDA dan PDB modifikasi 2 tidak berbeda signifikan, sementara pertumbuhan *mycelia sterilia* lebih optimal pada medium PDA dan PDB modifikasi 2.

Kata kunci : *Gastrodia crispa*, isolasi, identifikasi, mikoriza, PDA dan PDB modifikasi, suhu inkubasi.
xiii + 61 halaman : 11 gambar; 10 lampiran; 4 tabel
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ABSTRACT

Name : Immanuela Putri Dame Ria
Study Program : Biology
Title : Isolation, Identification, and Growth Characteristic of
Orchid Mycorrhiza in *Holomycotrophic Gastrodia crisper* Orchid
on Modified Potato Dextrose Agar with Variation of Incubation
Temperature
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Gastrodia crisper is an endemic holomycotrophic orchid of West Java mountain area found on soil with bamboo leaf litter and its growth is greatly affected by mycorrhiza. The specific requirement of environmental condition and its endemic presence, might have a symbiosis with specific fungi. Isolation, identification, and growth assay were carried out to identify the mycorrhizae and their optimal growth condition. The research has succeeded in isolation and identification of the symbiont mycorrhizae *G. crisper* from Gunung Halimun-Salak National Park and Gunung Gede-Pangrango National Park. Isolation was carried out using readily cultured isolation technique and incubated at 25 °C. Four mycorrhizae were isolated from three *G. crisper* pseudotuber samples. Mycorrhizae which identified phenotypically and compared by key determination are (Phenotypic identification compared to the key identification assumed that the isolate belongs to the genus) *Acremonium* sp., *Penicillium* sp., *Trichoderma* sp., and *mycelia sterilia*. Variation of medium and incubation temperature were assayed using the modified PDA and PDB medium with three variations of incubation temperature 9 °C, 25 °C, and 30 °C for 25 days. Soil filtrate was used to dissolve modified PDA and PDB 1, while bamboo leaf litter with soil filtrate was used to dissolve modified PDA and PDB 2. The results show that four isolates mycorrhizae had optimal growth on modified PDA and PDB at the temperature of 25 °C. The growth results of *Acremonium* sp., *Penicillium* sp., *Trichoderma* sp. on modified PDA and PDB 1 with modified PDA and PDB 2 did not show a significant distinction, while *mycelia sterilia* had optimal growth on modified PDA and PDB 2.

Keyword : *Gastrodia crisper*, isolation, identification, incubation
temperature, modified PDA and PDB, mycorrhiza.
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