

ABSTRAK

Uji Antagonis Bakteri Endofit H.172 Tanaman Karet Klon BPM 109 Terhadap Dua Isolat *Pestalotiopsis Sp.* yang Menyebabkan Penyakit Gugur Daun secara *In Vitro*

Penelitian ini bertujuan untuk mengetahui karakteristik morfologi dua isolat jamur *Pestalotiopsis sp.* yang berasal dari Sembawa dan Kalimantan serta menguji kemampuan bakteri endofit H.172 sebagai agen antagonis terhadap kedua isolat tersebut secara *in vitro*. Pengamatan morfologi dilakukan secara makroskopis meliputi warna, bentuk, tekstur koloni, serta kecepatan pertumbuhan, dan secara mikroskopis meliputi bentuk konidia, jumlah sekat, serta ukuran konidia. Hasil uji KOH dan pewarnaan Gram menunjukkan bahwa bakteri endofit H.172 termasuk Gram positif, ditandai dengan larutan tetap encer dan tidak berlendir serta hasil pewarnaan berwarna ungu. Uji antagonis menggunakan metode *dual culture* memperlihatkan bahwa bakteri endofit H.172 mampu menghambat pertumbuhan miselium *Pestalotiopsis sp.*, dengan tingkat hambatan yang lebih konsisten pada isolat asal Sembawa dibanding isolat asal Kalimantan yang cenderung fluktuatif. Hasil pengamatan menunjukkan adanya perbedaan morfologi antar isolat yang dipengaruhi oleh asal lokasi. Secara keseluruhan, penelitian ini memberikan informasi penting mengenai keragaman morfologi isolat *Pestalotiopsis sp.* dan potensi bakteri endofit H.172 sebagai agen pengendali hayati penyakit pada tanaman karet.

Kata Kunci : *Tanaman Karet, Pestalotiopsis sp., Bakteri Endofit, Uji Antagonis*

ABSTRACT

Testing the Antagonistic Effect of Endophytic Bacteria H.172 from Rubber Plant Clone BPM 109 Against Two Pestalotiopsis Sp. Isolates Causing Leaf Drop Disease In Vitro

This study aimed to find out the morphological characteristics of two Pestalotiopsis sp. fungal isolates from Sembawa and Kalimantan, as well as to test the ability of endophytic bacteria H.172 as an antagonistic agent against these two isolates in vitro. Morphological observations were carried out macroscopically, including colony color, shape, texture, and growth rate, and microscopically, including conidia shape, septa number, and conidia size. The KOH test and Gram staining showed that the endophytic bacterium H.172 is Gram-positive, indicated by the solution remaining clear and non-mucoid, and the staining results turning purple. The antagonistic test using the dual culture method showed that the endophytic bacterium H.172 was able to inhibit the growth of Pestalotiopsis sp. mycelium, with a more consistent inhibition level in isolates from Sembawa compared to isolates from Kalimantan, which tended to fluctuate. Observations showed differences in morphology between isolates influenced by their location of origin. Overall, this study provides important information about the morphological diversity of Pestalotiopsis sp. isolates and the potential of the endophytic bacterium H.172 as a biological control agent for diseases in rubber plants.

Keywords: *Rubber Plant, Pestalotiopsis sp., Endophytic Bacteria, Antagonist Test*