

## RINGKASAN

Penelitian ini dilaksanakan di Balai Penelitian Sungai Putih, Pusat Penelitian Karet, Kecamatan Galang, Kabupaten Deli Serdang Provinsi Sumatera Utara dengan ketinggian Tempat  $\pm$  54 meter dpl, dengan topografi datar. Penelitian ini dilaksanakan pada bulan Juli sampai dengan bulan Agustus 2022. Penelitian ini dibimbing oleh Bapak Ir. S. Edy Sumantri, M.P, sebagai Ketua Pembimbing dan Ibu Ir. Fenty Maimunah Simbolon, M.P sebagai Anggota Pembimbing. Penelitian bertujuan untuk mengetahui daya hambat bakteri Endofit isolat Balai Sungai Putih terhadap perkembangan penyakit bercak daun *Corynespora cassiicola* di Laboratorium. Penelitian ini menggunakan Rancangan Acak Lengkap (RAL) non faktorial dengan enam taraf perlakuan yaitu: SPE0 = kontrol, SPE1 = Pengguna bakteri endofit isolat 01, SPE2 = Pengguna bakteri endofit isolat 02, SPE3 = Pengguna bakteri endofit isolat 03, SPE4 = Pengguna bakteri endofit isolat 04 dan SPE5 = Pengguna bakteri endofit isolat 05. Parameter yang diamati adalah identifikasi karakteristik secara visual bakteri *Corynespora cassiicola* bakteri endofit (bentuk, warna dan gram), persentase daya hambat, uji antagonis dan uji hipersensitif bakteri endofit terhadap tanaman tembakau.

Hasil penelitian menunjukkan bahwa bakteri endofit secara nyata mampu menghambat perkembangan luas jamur *Corynespora cassiicola*. Isolat bakteri endofit pada perlakuan SPE5 dan SPE2 dengan persentase daya hambat lebih dari 50% menghasilkan daya hambat yang lebih baik dari pada isolat lainnya. Uji antagonis bakteri endofit berbeda nyata dengan kontrol terhadap jamur *Corynespora cassiicola*. Uji hipersensitif isolat bakteri endofit pada perlakuan B2, B3 dan B4 menunjukkan gejala nekrosis pada tanaman tembakau, sedangkan isolat bakteri pada perlakuan B1 dan B5 tidak menunjukkan gejala nekrosis.

*Kata Kunci : Bakteri Endofit, Jamur Corynespora cassiicola*

## SUMMARY

This research was conducted at the Sungai Putih Research Center, Rubber Research Center, Galang District, Deli Serdang Regency, North Sumatra Province with an altitude of  $\pm 54$  meters above sea level, with a flat topography. This research was conducted from July to August 2022. This research was supervised by Mr. Ir. S. Edy Sumantri, M.P, as the Chief Advisor and Mrs. Ir. Fenty Maimunah Simbolon, M.P as Advisory Member. The aim of this study was to determine the inhibition of endophytic bacteria from Balai Sungai Putih on the development of leaf spot disease *Corynespora cassiicola* in the laboratory. This study used a non-factorial completely randomized design (CRD) with six treatment levels, namely: SPE0 = control, SPE1 = users of endophytic bacteria isolates 01, SPE2 = users of endophytic bacteria isolates 02, SPE3 = users of endophytic bacteria isolates 03, SPE4 = users of endophytic bacteria isolate 04 and SPE5 = user of endophytic bacteria isolate 05. Parameters observed were visually identified characteristics of *Corynespora cassiicola* endophytic bacteria (shape, color and gram), percentage of inhibition, antagonist test and hypersensitivity test of endophytic bacteria to tobacco plants.

The results showed that the endophytic bacteria were significantly able to inhibit the widespread growth of the *Corynespora cassiicola* fungus. Endophytic bacterial isolates in the SPE5 and SPE2 treatments with an inhibition percentage of more than 50% produced better inhibition than the other isolates. The antagonist test of endophytic bacteria was significantly different from the control for the fungus *Corynespora cassiicola*. Hypersensitivity test of endophytic bacterial isolates in treatments B2, B3 and B4 showed symptoms of necrosis in tobacco plants, while bacterial isolates in treatments B1 and B5 did not show symptoms of necrosis.

Keywords: Endophytic Bacteria, Fungus *Corynespora cassiicola*