RINGKASAN

Penyakit antraknosa yang disebabkan oleh patogen *Colletotrichum* sp. merupakan penyakit penting pada tanaman cabai merah yang mengakibatkan kerusakan nyata 50-100%. Pengendalian yang ramah lingkungan yakni dengan penggunaan agensia hayati *Trichoderma harzianum* T10 yang dapat diaplikasikan di lapangan. Penelitian ini bertujuan untuk mengetahui efektivitas formulasi *T. harzianum* T10 berbagai medium tepung beragam beras yakni beras putih, beras merah, beras hitam dan beras ketan untuk mengendalikan penyakit antraknosa pada buah cabai merah.

Penelitian dilakukan dari bulan Mei-Juli 2025 dilaksanakan di Laboratorium Perlindungan Tanaman Fakultas Pertanian. Penelitian menggunakan Rancangan Acak Lengkap (RAL) untuk metode eksperimen yang dilaksanakan *in vitro* di dalam laboratorium. Penelitian dimulai dengan isolasi *Colletotrichum* sp., pembuatan *T. harzianum* T10 formula cair tepung beragam beras yakni beras putih, beras merah, beras hitam, dan beras ketan serta PDB sebagai kontrol. Buah cabai merah sehat dicuci dengan air steril kemudian disterilkan alkohol dan NaOCI 3% selama 1 menit dan diinokulasikan formula cair tepung beragam beras disemprotkan ke buah kemudian diinokulasikan *Colletotrichum* sp. Variabel yang diamati yakni kepadatan konidium, masa inkubasi, luas infeksi, indeks sampah, dan kadar gula. Data dianalisis dengan ANOVA 5% kemudian uji lanjut BNJ 5% jika terdapat perbedaan nyata.

Hasil dari pengukuran formula cair pada medium tepung beragam beras didapatkan bahwa perbanyakan *T. harzianum* T10 paling efektif dalam medium tepung beras hitam dengan kepadatan tertinggi yakni sebesar $1{,}18 \times 10^6$ CFU/mL atau 78,19 % lebih besar jika dibandingkan kontrol. Perlakuan formula *T. harzianum* T10 dalam medium tepung beras hitam mampu menekan masa inkubasi *Colletotrichum* sp. hingga 60 % dan menurunkan indeks sampah 39,24 % serta memiliki kadar gula terendah sebesar 20,71% dibandingkan kontrol. Aplikasi formula *T. harzianum* T10 medium tepung beras hitam, beras ketan, beras merah, beras putih, dan PDB mampu menurunkan luas infeksi *Colletotrichum* sp. masing-masing sebesar 27,10, 18,96, 13,5, 12,93, dan 12,93 % dibandingkan kontrol.

SUMMARY

Anthracnose caused by *Colletotrichum* sp. is an important disease of red chili plants that causes significant damage of 50-100%. Safety and friendly environment control is the use of biological agenst *Trichoderma harzianum T10* which can be applied in the field. This study aimed to determine the effectiveness of *T. harzianum* T10 formulation on various types of rice flour media, namely white rice, brown rice, black rice, and glutionous rice, to control anthracnose on red chili fruit.

The research was conducted from May to July 2025 at the Plant Protection Labotary, Faculty of Agriculture, Jenderal Soedirman University. Compeletely randomized design was used for experimental methods. The research began with isolation of *Colletotrichum* sp., preparing *T. harzianum* T10 liquid formula in various rice flours namely white, rice, rice, and glutinous rice and PDB as the control. Then, healthy red chili fruit was washed with sterile water then sterilized with alcohol and 3 % NaOCI for 1 minute and sprayed with the liquid formula onto the fruit then inoculated by *Colletotrichum* sp. Variables observed were viability conidia density, incubation period, area of infection, waste index, and sugar content. Data were analysed with ANOVA 5% then Tukey HSD 5% further test if there was a significant difference.

Results of the research indicated that the propagation of *T. harzianum* T10 in the black rice flour media resulted the highest conidia density at 1.18×10^6 CFU/mL or 78.19 % greater compared to the control. The black rice liquid formula media with *T. harzianum* T10 was able to suppress incubation period of *Colletotrichum* sp. by 60 % and reduce the waste index by 39.24% also has the lowest sugar content as 20.71% than the control. The application of the *T. harzianum* T10 formula of black, glutinous, red, white rice flour, and PDB was able to reduce the infection area of *Colletotrichum* sp. by 27.10, 18.96, 13.5, 12.93, and 12.93 %, respectively, compared to the control.