

## RINGKASAN

Penyakit rebah semai *Pythium* sp. merupakan penyakit penting pada tanaman mentimun yang dapat memengaruhi produksi tanaman mentimun. Salah satu pengendalian yang dapat dilakukan untuk mengendalikan *Pythium* sp. adalah pemberian agensia hayati. *Trichoderma harzianum* merupakan salah satu agensia hayati yang mudah didapatkan dan cepat dibiakkan. Tepung beras ketan dapat digunakan sebagai formula medium cair *T. harzianum*. Penelitian ini dilakukan untuk mengetahui pengaruh aplikasi *T. harzianum* dalam berbagai konsentrasi medium cair tepung beras ketan terhadap penekanan penyakit rebah semai, dan terhadap pertumbuhan bibit mentimun.

Penelitian dilaksanakan dengan metode eksperimen dalam 2 tahap, *in vitro* di Laboratorium Perlindungan Tanaman dan *in planta* di rumah plastik di Fakultas Pertanian, Universitas Jenderal Soedirman pada bulan Agustus 2018 sampai bulan Desember 2018. Pengujian *in vitro* menggunakan Rancangan Acak Lengkap dengan 5 perlakuan dan 5 ulangan, meliputi perlakuan formula cair *Potato Dextrose Broth* (PDB), tepung beras ketan dengan konsentrasi 5, 10, 15, dan 20 g/L. Pengujian *in planta* menggunakan Rancangan Acak Kelompok dengan 6 perlakuan dan 5 ulangan, meliputi kontrol dan 5 formula *T. harzianum*. Variabel yang diamati meliputi kepadatan konidium, masa inkubasi, kejadian penyakit, *area under disease progress curve* (AUDPC), tinggi tanaman, bobot segar tanaman, panjang akar, bobot segar akar, jumlah daun, potensi tumbuh maksimum dan daya kecambah.

Hasil penelitian menunjukkan bahwa pemformulaan tepung beras ketan dapat digunakan sebagai medium alternatif pertumbuhan *T. harzianum*. Kepadatan konidium *T. harzianum* tertinggi pada formula medium cair tepung beras ketan dengan konsentrasi 20 g/L, yaitu sebanyak  $4,80 \times 10^7$  konidium/mL, dan efektif menekan penyakit sebesar 88,89% dan menunda masa inkubasi selama 7 hari bila dibandingkan dengan kontrol. Perlakuan tersebut juga memiliki nilai AUDPC terkecil sebesar 17,5. Pemformulaan tepung beras ketan juga berpengaruh pada komponen pertumbuhan, salah satunya berpengaruh terhadap tinggi tanaman sebesar 13,80% dibanding kontrol.

## SUMMARY

*Damping-off caused by Pythium sp. is one of the cucumber important disease affected cucumber production. One of the disease control is biological control application. Trichoderma harzianum is one of the biological controls agents that is easily obtained and fast multiplication. Glutinous rice flour could be used as a T. harzianum liquid formula media. This research aimed to determine the effect of T. harzianum application in various concentrations of the flour on suppression of the disease, and on cucumber seedlings growth.*

*This research was carried out with two step experimental method, i.e., in vitro test was done at the laboratory of plant protection and in planta one was set up at plastic house, the Faculty of Agriculture, Jenderal Sudirman University from August up to Desember 2018. The In vitro test used a completely randomized design with 5 treatments and 5 replicates, consisted of liquid formula on Potato Dextrose Broth (PDB), and in glutinous rice flour with concentration of 5 g / L, 10 g / L, 15 g / L, and 20 g / L. The in planta one used a randomized block design with 6 treatments and 5 replicates, consisted of control and 5 formula of T. harzianum. Variable observed included conidia density, incubation period, disease incidence, area under disease progress curve (AUDPC), crop height, crop fresh weight, root lengths, root fresh weight, number of leaves, maximum growth potential and germination rate.*

*Results of the research showed that formulation of glutinous rice flour could be used as alternative media for T. harzianum growth. From the research conducted, the density of conidium T. harzianum. The highest conidia density of T. harzianum was found in glutinous rice liquid formula with a concentration of 20 g/L, as high as  $4.80 \times 10^7$  conidia/mL, and effective to suppress the disease as 88,89% and to delay incubation period for 7 days compared to controls. The treatments could obtained the smallest AUDPC value as 17.5. The formula of glutinous rice flour could influenced of growth component, such as on crop height as 13.80% compared to the control.*