RINGKASAN

Komoditas hortikultura yang disukai masyarakat Indonesia salah satunya adalah mentimun (*Cucumis sativus* L.). Penyakit penting tanaman mentimun adalah rebah semai yang disebabkan oleh *Pythium* sp. Petani masih menggunakan pestisida sintetis sebagai pengendaliannya, sehingga dibutuhkan pemanfaatan metabolit sekunder jamur *Trichoderma harzianum* T10 sebagai bahan pestisida ramah lingkungan. *T. harzianum* T10 membutuhkan medium untuk pertumbuhannya, yaitu menggunakan air cucian beragam beras. Penelitian ini bertujuan untuk mengetahui pengaruh air cucian dari berbagai beras terhadap pertumbuhan jamur *T. harzianum* T10, pengaruh aplikasi jamur *T. harzianum* T10 terhadap penyakit rebah semai, dan pertumbuhan bibit mentimun.

Penelitian ini dilaksanakan di *screen house* dan di Laboratorium Perlindungan Tanaman, Fakultas Pertanian, Universitas Jenderal Soedirman, pada bulan November 2023 sampai Januari 2024. Penelitian dilakukan dalam dua tahap, yaitu *in vitro* menggunakan Rancangan Acak Lengkap dengan 4 perlakuan dan 6 ulangan dan tahap *in planta*, yaitu Rancangan Acak Kelompok dengan 5 perlakuan (PDB dan air cucian beras putih, air cucian beras merah, air cucian beras hitam dan air cucian beras ketan) dan 5 ulangan. Variabel yang diamati meliputi kepadatan konidium, masa inkubasi, kejadian penyakit, AUDPC, tinggi tanaman, bobot segar tanaman, dan panjang akar.

Hasil penelitian menunjukkan bahwa aplikasi *T. harzianum* T10 dalam air cucian beras ketan merupakan perlakuan terbaik karena memiliki kepadatan konidium sebesar 66,01%, mampu menunda masa inkubasi sebesar 40,34%, menekan kejadian penyakit sebesar 62,07%, menurunkan nilai AUDPC sebesar 69,41%, serta meningkatkan tinggi tanaman sebesar 91,81%, bobot segar tanaman sebesar 92,42%, dan panjang akar sebesar 95,21% dibandingkan kontrol.

SUMMARY

Cucumber (Cucumber sativa L.) is a favored horticultural commodity in Indonesia. However, cucumber seedlings are frequently damaged by Phytium causing damping off. Farmers often use synthetic pesticides to control, but the pesticides could cause several negative impacts; thus the usage of fungal secondary metabolites is required. Trichoderma harzianum T10 is a bicontrol agent and requires agrowth media obtained from rice various washing water. The purpose of this study was to study the effect of washing water from various rice on growth of T. harzianum T10 on seedlings damping off and seedling growth of cucumber.

This research was carried out in the screen house and at the Plant Protection Laboratory, Faculty of Agriculture, Universitas Jenderal Soedirman, from November 2023 to January 2024. The research was carried out in two stages: in vitro test using a Completely Randomized Design with four ıreatments and six replicates and in planta one using a Randomized Block Design with five treatments (PDB and washing water from white, red, black, and glutinous rice) and five replicates. The variables observed were conidia density, incubation period, disease incidence, Area Under Disease Progress Curve (AUDPC), plant height, plant fresh weight, and root length.

The research results showed that the application of T. harzianum T10 in glutinous rice washing water was the best treatment because it could increase conidia density, delay the incubation period, reduce the disease incidence, reduce the AUDPC value, and increase plant height, plant fresh weight, and root length of 66.01, 40.34, 62.07, 69.41, 91.81, 92.42, and 95.21%, respectively, compared to the control.