

RINGKASAN

Penyakit hawar daun merupakan salah satu penyakit utama pada tanaman kentang yang dapat menyebabkan kehilangan hasil hingga 100%, terutama pada varietas Atlantik yang banyak dibudidayakan di dataran medium. Selama ini, petani masih sangat bergantung pada fungisida sintetis yang berisiko menimbulkan residu dan serta pencemaran lingkungan, sehingga diperlukan alternatif pengendalian yang lebih ramah lingkungan. Penelitian ini bertujuan untuk mengetahui pengaruh serta dosis terbaik biofungisida Greemi-G berbasis *Trichoderma* spp. dalam mengendalikan penyakit hawar daun (*Phytophthora infestans*) serta pengaruhnya terhadap pertumbuhan dan hasil tanaman kentang varietas Atlantik di dataran medium.

Penelitian dilaksanakan di Desa Karangsari, Kecamatan Pulosari, Kabupaten Pemalang pada bulan Mei hingga Agustus 2025 menggunakan Rancangan Acak Kelompok (RAK) dengan lima perlakuan dan delapan ulangan. Perlakuan terdiri dari kontrol (tanpa perlakuan apapun), fungisida sintetis 100%, serta kombinasi fungisida sintetis dan biofungisida Greemi-G dengan perbandingan 75:25, 50:50, dan 25:75. Parameter yang diamati meliputi masa inkubasi, intensitas penyakit, laju perkembangan penyakit, nilai AUDPC, kandungan klorofil, pertumbuhan tanaman, serapan hara, dan biomassa tanaman kentang.

Hasil penelitian menunjukkan bahwa aplikasi biofungisida Greemi-G mampu menunda munculnya gejala penyakit hawar daun, menekan intensitas dan laju perkembangan penyakit, serta menurunkan nilai AUDPC dibandingkan dengan kontrol tanpa perlakuan. Perlakuan kombinasi fungisida sintetis 25% dan Greemi-G 75% memberikan hasil terbaik dalam menekan perkembangan penyakit tanpa merusak lingkungan akibat penggunaan fungisida terus-menerus. Selain itu, aplikasi Greemi-G tidak menurunkan pertumbuhan maupun hasil tanaman kentang, bahkan mampu meningkatkan efisiensi serapan hara. Dengan demikian, biofungisida Greemi-G berpotensi menggantikan penggunaan fungisida sintetis hingga 75% dan dapat direkomendasikan sebagai alternatif pengendalian penyakit hawar daun yang lebih ramah lingkungan dan berkelanjutan.

SUMMARY

*Late blight is one of the most destructive diseases of potato, particularly in the Atlantic variety cultivated in medium-altitude areas, where it can cause yield losses of up to 100%. Disease control still relies heavily on synthetic fungicides, which pose risks of chemical residues and environmental pollution. Therefore, environmentally friendly alternatives are needed. This study aimed to evaluate the effects and determine the optimal dose of the biofungicide Greemi-G based on *Trichoderma* spp. in controlling late blight (*Phytophthora infestans*) and its impact on the growth and yield of Atlantic potato grown in medium-altitude areas.*

The research was conducted from May to August 2025 in Karangsari Village, Pulosari District, Pemalang Regency, using a Randomized Block Design with five treatments and eight replications. The treatments consisted of a control without synthetic fungicide application and combinations of synthetic fungicide and Greemi-G biofungicide at ratios of 75:25, 50:50, and 25:75. Observed parameters included incubation period, disease intensity, disease development rate, AUDPC values, chlorophyll content, plant growth, nutrient uptake, and potato biomass.

The results showed that the application of the biofungicide Greemi-G was able to delay the onset of late blight symptoms, reduce disease intensity and the rate of disease development, and lower AUDPC values compared to the untreated control. The combined treatment of 25% synthetic fungicide and 75% Greemi-G provided the best performance in suppressing disease development without causing environmental damage associated with continuous use of synthetic fungicides. Furthermore, the application of Greemi-G did not reduce potato growth or yield and even improved nutrient uptake efficiency. Therefore, Greemi-G has the potential to replace 50–75% of synthetic fungicide use and can be recommended as an environmentally friendly and sustainable alternative for controlling late blight disease.