RINGKASAN

Padi merupakan tanaman pokok yang sangat penting di Indonesia sebagai sumber makanan utama. Namun, produksinya terus menurun, salah satunya akibat serangan hama berupa putih palsu (*Cnaphalocrocis medinalis*). Hama putih palsu merusak daun padi, terutama saat tanaman pada masa vegetatif, sehingga menurunkan produktifitas tanaman padi. Petani umumnya menggunakan pestisida untuk menangani hama pada tanaman, tetapi penggunaannya berlebihan dapat mencemari lingkungan dan berbahaya bagi kesehatan. Pendekatan lain dengan Pengendalian Hama Terpadu (PHT) perlu dilakukan menggunakan agen hayati, misalnya jamur *Lecanicillium saksenae*. Jamur ini diduga dapat mengendalikan hama, salah satunya dengan hasil metabolit sekundernya. Upaya peningkatan terus ditingkatkan supaya meningkatkan produksi padi dengan memperhatikan keseimbangan ekosistem dan keberlanjutan lingkungan.

Penelitian ini dilaksanakan di Desa Kediri, Kecamatan Karanglewas, Kabupaten Banyumas dan Laboratorium Perlindungan Tanaman Fakultas Pertanian, Universitas Jenderal Soedirman pada bulan Februari sampai Juni 2025. Rancangan percobaan yang digunakan yaitu Rancangan Acak Kelompok (RAK) dengan 2 faktor. Faktor 1 yaitu konsentrasi metabolit sekunder jamur entomopatogen *L. saksenae* yang terdiri dari kontrol (K0), 10% (K1), 20% (K2), 30% (K3) dan pestisida kimiawi berbahan aktif nitenpiram (K4). Faktor 2 yaitu frekuensi aplikasi metabolit sekunder jamur entomopatogen *L.saksenae* yang terdiri dari aplikasi 1 minggu sekali (F1) dan aplikasi 2 minggu sekali (F2). Kombinasi perlakuan ini dibuat sebanyak 3 kali ulangan. Variabel yang diamati dalam penelitian ini yaitu intensitas kerusakan tanaman, populasi hama putih palsu, indeks keragaman dan dominansi musuh alami. Data pengamatan dianalisis dengan *Analisis of Variance* (ANOVA). Apabila terdapat beda nyata dilakukan uji lanjut menggunakan *Duncan Multiple Range Tes*t (DMRT) pada taraf 5%.

Hasil penelitian menunjukkan bahwa 1) konsentrasi metabolit sekunder jamur entomopatogen *L. saksenae* 30% tidak berpengaruh terhadap intensitas kerusakan, populasi hama putih palsu dan musuh alami; 2) frekuensi aplikasi metabolit sekunder jamur entomopatogen *L. saksenae* 1 minggu sekali tidak berpengaruh terhadap intensitas kerusakan, populasi hama putih palsu dan musuh alami; 3) tidak ada interaksi antara konsentrasi dan frekuensi aplikasi metabolit sekunder jamur entomopatogen *L. saksenae,* sehingga tidak berpengaruh terhadap intensitas kerusakan, populasi hama putih palsu, maupun tingkat keanekaragaman dan dominansi musuh alami.

SUMMARY

Rice is a very important staple crop in Indonesia as the main source of food. However, its production continues to decline, one of which is due to pest attacks in the form of rice leaf folder (Cnaphalocrocis medinalis). Rice leaf folder damage rice leaves, especially when the plant is in the vegetative period, thus reducing the productivity of rice plants. Farmers generally use pesticides to deal with pests on plants, but their excessive use can pollute the environment and be harmful to health. Another approach with Integrated Pest Management (IPM) needs to be done using biological agents, such as the fungus Lecanicillium saksenae. This fungus is thought to be able to control pests, one of which is with the results of its secondary metabolites. Improvement efforts continue to be enhanced in order to increase rice production by paying attention to ecosystem balance and environmental sustainability.

This research was conducted in Kediri Village, Karanglewas District, Banyumas Regency and Plant Protection Laboratory, Faculty of Agriculture, Universitas Jenderal Soedirman from February to June 2025. The experimental design used was Randomized Block Design (RBD) with 2 factors. Factor 1 is the concentration of secondary metabolites of the entomopathogenic fungus L. saksenae consisting of control (K0), 10% (K1), 20% (K2), 30% (K3) and chemical pesticides made from nitenpiram (K4). Factor 2 is the frequency of application of secondary metabolites of entomopathogenic fungi L. saksenae consisting of applications once a week (F1) and applications once every 2 weeks (F2). This treatment combination was made as many as 3 replicates. The variables observed in this study were the intensity of plant damage, rice leaf folder population, diversity index and dominance of natural enemies. Observation data were analyzed by Analysis of Variance (ANOVA). If there were significant differences, further tests were conducted using the Duncan Multiple Range Test (DMRT) at the 5%.

The results showed that 1) the concentration of secondary metabolites of the entomopathogenic fungus L. saksenae 30% had no effect on the intensity of damage, the population of rice leaf folder and natural enemies; 2) the frequency of application of secondary metabolites of the entomopathogenic fungus L. saksenae once a week had no effect on the intensity of damage, the population of rice leaf folder and natural enemies; 3) there was no interaction between the concentration and frequency of application of secondary metabolites of the entomopathogenic fungus L. saksenae, so it did not affect the intensity of damage, the population of frice leaf folder, nor the level of diversity and dominance of natural enemies.