

RINGKASAN

Penelitian ini bertujuan untuk: 1) Menguji efektifitas jamur entomopatogen indegenous sebagai bioinsektisida berbahan aktif jamur *Fusarium cf. solani* terhadap hama wereng batang coklat (*Nilaparvata lugens* Stal), 2) Menguji efektifitas Pupuk Organik Cair diperkaya khamir-bambu terhadap pertumbuhan tanaman padi dan penekanan serangan hama wereng coklat, 3) Menguji sinergisme bioinsektisida berbahan aktif jamur *F. cf. solani* dengan POC diperkaya Khamir-bambu terhadap pertumbuhan. Penelitian dilaksanakan di Desa Senon Kecamatan Kemangkong, Kabupaten Purbalingga. Waktu penelitian dimulai dari bulan Maret 2015 sampai dengan bulan Agustus 2015.

Rancangan yang digunakan adalah Rancangan Acak Kelompok Lengkap (RAKL), dengan pola faktorial (2 faktor). Faktor 1 adalah imbalan penggunaan pupuk kimia pabrik dan POC yang terdiri dari 50% NPK + 0% POC (P_1), 50% NPK + 50% POC (P_2), dan 50% NPK + 100% POC (P_3). Faktor 2 adalah frekuensi penyemprotan bioinsektisida berbahan aktif jamur entomopatogen *F. cf. solani* yang terdiri atas tanpa penyemprotan (F_0), disemprot satu, kali umur 1 bulan setelah pindah semai (F_1), disemprot dua kali (F_2), dan disemprot tiga kali (F_3). Gabungan kedua faktor diperoleh 12 satuan percobaan dan diulang sebanyak 3 kali. Variabel yang diamati yaitu intensitas serangan hama wereng batang coklat, tinggi tanaman padi (cm), intensitas serangan hama utama lain dan musuh alamnya, dan jumlah anakan produktif. Data hasil penelitian dianalisis dengan uji F, apabila hasilnya menunjukkan pengaruh yang nyata, maka dilakukan uji lanjut dengan *Duncan's Multiple Range Test* (DMRT) pada taraf kesalahan 5%.

Hasil penelitian menunjukkan bahwa Bioinsektisida berbahan aktif jamur *F. cf. solani* dengan konsentrasi $2,106 \times 10^6$ dan frekuensi penyemprotan tiga kali (F_3) mampu menekan populasi *N. lugens* sebesar 8,86% dan menekan hama lain seperti belalang, walang sangit dan kupu putih palsu. POC diperkaya khamir-bambu belum mampu menekan pertumbuhan hama lain, tingkat serangan hama wereng batang coklat, populasi hama wereng batang coklat dan belum mampu meningkatkan pertumbuhan tanaman. Tidak ada interaksi POC diperkaya khamir bambu dengan *F. cf. solani*.

SUMMARY

This research aimed to determine; 1) tested the effectiveness of indigenous entomopathogen fungi as bioinsecticide for brown plant-hopper with *Fusarium cf. Solani* as the active substance, 2) tested the effectiveness of yeast-bamboo enriched Liquid Organic Fertilizer (LOF) to rice growth and suppressing brown plant-hopper attack, 3) tested the synergism of *F. cf. solani* fungi bioinsecticide with yeast-bamboo enriched Liquid Organic Fertilizer to the growth. The research was conducted in Senon Village, Kemangkön District, Purbalingga Regency. The research started from March to August 2015.

Factorial complete randomized block design (2 factors) was used as the experimental design. First factor was chemical fertilizer and LOF, consisted of 50% NPK + 0% LOF (P_1), 50% NPK + 50% LOF (P_2), and 50% NPK + 100% LOF (P_3). Second factor was frequency of bioinsecticide spraying with *F. cf. solani* fungi, which consisted of no spraying (F_0), one time spraying after 1 month old seedling transplanted (F_1), two times spraying (F_2), and three times spraying (F_3). Twelve experimental units were obtained from the combination of two factors and replicated three times. Observed variables were brown plant-hopper attack intensity, rice plant height (cm), other major pests attack intensity and their natural enemies, and number of productive tillers. Data were analyzed with F test with Duncan's Multiple Range Test with 5% error margin for any significant results.

The results of this research showed that *F. cf. solani* fungi bioinsecticide on $2,106 \times 10^6$ concentration and three times spraying (F_3) was able to suppress *N. lugens* population for 8,86% and was not able to suppress other pest, such as grasshopper, brown leafhopper, and white fly. Yeast-bamboo enriched LOF was not able to suppress other pests, brown plant-hopper attack intensity, population, and was not able to promote plant growth. No interaction between yeast-bamboo enriched LOF with *F. cf. solani*.