RINGKASAN

Pengendalian hama penggerek batang padi kuning (*Scirpophaga incertulas*) pada tanaman padi dengan ramah lingkungan dapat ditempuh melalui aplikasi metabolit sekunder jamur entomopatogen. Metabolit sekunder yang berasal dari jamur entomopatogen dinyatakan mampu menghasilkan berbagai zat kimia yang termasuk ke dalam zat yang patogenik (menyebabkan penyakit pada inang target) yang mempunyai potensi yang dapat mengembangkan industri pertanian. Penelitian ini bertujuan untuk mengetahui pengaruh aplikasi metabolit sekunder jamur entomopatogen di dalam teknik budidaya konvensional, organik dan *System of rice intensification* (SRI) terhadap populasi, intensitas serangan dan populasi musuh alami hama penggerek batang padi kuning (*Scirpophaga incertulas*).

Penelitian ini dilaksanakan di lahan sawah Desa Brobot, Bojongsari, Purbalingga, Jawa Tengah pada bulan Maret 2019 sampai Juli 2019. Penelitian ini dilaksanakan menggunakan rancangan petak tersarang non faktorial dimana teknik budidaya merupakan faktor sarang dan metabolit sekunder merupakan faktor tersarang. Perlakuan yang digunakan adalah insektisida di sistem budidaya konvensional ($P_0(T_1)$), isolat Cipete di sistem budidaya SRI ($P_1(T_2)$), isolat Papringan di sistem budidaya SRI ($P_2(T_2)$), isolat Pasir Kulon di sistem budidaya SRI ($P_3(T_2)$), isolat Kalisalak di sistem budidaya SRI ($P_4(T_2)$), isolat Cipete di sistem budidaya Organik ($P_1(T_3)$), isolat Papringan di sistem budidaya Organik ($P_2(T_3)$), isolat Pasir Kulon di sistem budidaya Organik ($P_3(T_3)$), isolat Kalisalak di sistem budidaya Organik ($P_4(T_3)$). Variabel pengamatan yang diamati adalah populasi hama, jumlah kelompok telur, intensitas serangan, dan populasi musuh alami.

Hasil penelitian menunjukkan bahwa: 1) Aplikasi metabolit sekunder jamur entomopatogen $P_3(T_2)$ (Isolat Pasir kulon di teknik budidaya SRI) dan $P_1(T_3)$ (Isolat Ciepete di teknik budidaya Organik) dimana tidak ditemukan populasi penggerek batang padi kuning (*Scirpophaga incertulas*) pada setiap pengamatan; 2) Populasi hama penggerek batang padi kuning (*Scirpophaga incertulas*) tertinggi pada perlakuan $P_0(T_1)$ yang merupakan perlakuan dengan pestisida kimia yang tersarang di dalam teknik budidaya konvensional sebesar 0,30 imago/rumpun; 3) Aplikasi metabolit sekunder jamur entomopatogen $P_1(T_2)$ (Isolat Ciepete di teknik budidaya SRI) mampu menekan intensitas serangan penggerek batang padi kuning (*Scirpophaga incertulas*) dimana perlakuan tersebut tidak ditemukan kerusakan akibat serangan hama PBPK; 4) Aplikasi metabolit sekunder jamur entomopatogen *Beauveria* sp., *Paecilomyces* sp. dan *Fusarium* sp. di teknik budidaya SRI maupun Organik tidak mempengaruhi populasi musuh alami *Lycosa* sp., *Oxyopes* sp., *Argiope* sp., *Atypena* sp., *Tetrahnatha* sp., *Paederus* sp., *Coccinella* sp., dan *Ophinea* sp.

SUMMARY

Pest control yellow rice stem borer (Scirpophaga incertulas) On rice plants with environmentally friendly can be pursued through the application of secondary metabolite of entomopatogen mushroom. Secondary metabolites derived from fungi fungi are expressed capable of producing a variety of chemicals that belong to the pathogenic substance (causing disease on the target host) that has potential to develop agricultural industries. This research was aimed for knowing the effect of secondary metabolites entomopathogenic fungi in cultivation system on 1) population, 2) intensity of the attack, and 3) population of natural enemy of yellow stem borer (Scirpophaga incertulas).

This research was conducted in the rice fields of Brobot Village, Bojongsari, Purbalingga, Central Java from March 2019 to July 2019. The research was conducted using non-factorial nest plot design where cultivation technique is a hive factor and secondary metabolite is a factor of nest. The treatment used is a conventional insecticide ($P_0(T_1)$), isolat Cipete in SRI cultivation system ($P_1(T_2)$), isolat Papringan in SRI cultivation system ($P_2(T_2)$), isolat Pasir Kulon in SRI cultivation system ($P_3(T_2)$), isolat Kalisalak in SRI cultivation system ($P_4(T_2)$), isolat Cipete in organic cultivation system (P_1 (T_3)), isolat Papringan in organic cultivation system ($P_2(T_3)$), isolat Pasir Kulon in organic cultivation system ($P_3(T_3)$), isolat Kalisalak in organic cultivation system ($P_4(T_3)$). Observed variable observations are the population of pests, the number of egg groups, the intensity of attacks, and the natural enemy population.

The results showed that 1) Application of secondary metabolites of fungi fungi $P_3(T_2)$ (Isolate Pasir Kulon in SRI) and $P_1(T_3)$ (Ciepete isolates in organic) where there is no population of yellow rice stem borer (Scirpophaga incertulas) on every observation 2) Population of the highest yellow rice stem borer (Scirpophaga incertulas) in the treatment of $P_0(T_1)$ which is a treatment with chemical pesticides that were nest in conventional cultivation techniques of 0.30 imago/clump; *3)Application of secondary metabolite of fungi $P_1(T_2)$ (The Isolat Cipete in SRI) was able to suppress the intensity of attacks of yellow rice stem borer (Scirpophaga incertulas) where the treatment is not found damage caused by pest attack yellow rice stem borer; 4) Application of secondary metabolite of fungi fungus Beauveria sp., Paecilomyces sp. and Fusarium sp. In SRI and organic cultivation techniques do not affect the natural enemy population Lycosa sp., Oxyopes sp., Argiope sp., Atypena sp., Tetrahnatha sp., Paederus sp., Coccinella sp., and Ophinea sp.*