STATUS KEBERADAAN OPT PADI DAN PENGGUNAAN PESTISIDA DI TINGKAT PETANI PASCA IMPLEMENTASI PHT

SKRIPSI

diajukan guna memenuhi salah satu persyaratan
untuk menyelesaikan Program Sarjana pada
Program Studi Ilmu Hama dan Penyakit Tumbuhan
Jurusan Hama dan Penyakit Tumbuhan
Fakultas Pertanian Universitas Jember

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RINGKASAN

Status Keberadaan OPT Padi dan Penggunaan Pestisida di Tingkat Petani Pasca Implementasi PHT; Dimas Bagus Prabowo, 041510401060; 2010: 47 halaman; Jurusan Ilmu Hama dan Penyakit Tumbuhan Fakultas Pertanian Universitas Jember.

Penggunaan pestisida kimiawi di tingkat petani pada pertanaman padi, pada sekitar dua dasawarsa pasca implementasi PHT diduga masih menjadi pilihan utama petani dan perkembangan OPT utama pada tanaman padi masih cukup tinggi. Penelitian dilakukan untuk mengetahui status keberadaan OPT padi dan penggunaan pestisida di tingkat petani serta sejauh mana petani masih menerapkan prinsip-prinsip PHT. Penelitian dilakukan pada pertanaman padi musim kemarau di kabupaten Bojonegoro dan kabupaten Ngawi propinsi Jawa Timur. Pada setiap kabupaten dipilih dua desa contoh yaitu desa Mulyorejo kecamatan Balen dan Ngraho kecamatan Kalitidu (kabupaten Bojonegoro) serta desa Dawu kecamatan Paron dan Klitik kecamatan Geneng (kabupaten Ngawi).

Lahan pertanaman padi yang menjadi obyek penelitian dibedakan antara lahan yang dikelola oleh petani SLPHT dan non SLPHT. Pengumpulan data di lahan pertanaman padi meliputi keberadaan OPT (hama dan penyakit) yang dominan, kepadatan populasi dan atau intensitas serangan OPT serta jenis atau varietas padi yang ditanam. Penilaian terhadap kinerja petani dalam menerapkan prinsip-prinsip PHT pada pengendalian OPT dilakukan melalui wawancara dengan petani responden menggunakan kuisioner. Petani responden juga dibedakan antara petani SLPHT dan non SLPHT yang jumlahnya masing-masing 25 responden untuk setiap desa.

Penentuan kepadatan populasi hama di lahan pertanaman dilakukan menggunakan metode nisbi dan metode mutlak. Berdasarkan jenis hama yang ditemukan, metode nisbi digunakan untuk menentukan kepadatan populasi wereng batang coklat (WBC) dan metode mutlak untuk menentukan kepadatan populasi penggerek batang padi putih (PBP). Wereng diperangkap menggunakan jaring serangga dengan gerakan 10 kali ayunan ganda jaring searah diagonal luasan

lahan pertanaman sebanyak 15 kali pada luasan area tanaman padi secara diagonal. Jumlah imago yang tertangkap, kemudian dihitung dan populasinya dibandingkan antara lahan petani SLPHT dan non SLPHT. Kepadatan populasi hama PBP ditentukan pada petak-petak contoh di lahan pertanaman. Petak-petak contoh dengan luasan permukaan tanah 1 x 1 m^2 (berisi sekitar 25 rumpun tanaman) ditentukan secara acak/random dengan metode diagonal (*Diagonal Random Sampling Method*). Pada setiap lahan petani yang diuji (SLPHT dan non SLPHT) digunakan 15 petak contoh. Pengamatan populasi PBP pada setiap petak contoh dilakukan pada tanaman contoh sebanyak lima rumpun per petak. Selain kepadatan populasi, juga ditentukan tingkat kerusakan tanaman yang diakibat PBP dengan menghitung intensitas serangan.

Pengukuran intensitas penyakit yang menggambarkan tingkat keparahan penyakit untuk penyakit yang dominan ditemukan pada penelitian ini yaitu bercak coklat sempit (BCS) ditentukan berdasarkan katagori keparahan infeksi dengan skala 0-5 (berkisar tidak terjadi infeksi pada daun sampai lebih dari 75 persen permukaan daun terinfeksi). Penentuan intensitas penyakit pada lahan petani yang diuji (SLPHT dan non SLPHT) menggunakan petak contoh yang sama dengan yang digunakan untuk menentukan tingkat kerusakan tanaman akibat PBP yaitu 15 petak contoh, dengan 5 tanaman contoh yang terinfeksi BCS per petak contoh.

Pengamatan kepadatan populasi, intensitas serangan hama, dan intensitas penyakit di lahan pertanaman milik petani SLPHT dan non SLPHT mulai dilaksanakan saat tanaman umur 14 hari setelah tanam (hst) sampai dengan 42 hst dengan selang satu minggu. Data yang diperoleh di lahan pertanaman dibandingkan antara petani (SLPHT dan non SLPHT) serta dianalisis menggunakan uji t-student. Data yang diperoleh dari hasil wawancara dengan petani ditetapkan dalam persentase pelaku, dibandingkan juga antara petani SLPHT dan petani non SLPHT.

Jenis OPT yang ditemukan di empat desa contoh pada lahan petani SLPHT maupun non SLPHT ternyata tidak berbeda. Jenis OPT yang dominan yaitu hama wereng batang coklat (WBC) dan penggerek batang padi putih (PBP) serta tidak ditemukan penyakit selain bercak coklat sempit (BCS). Penggerek batang padi

putih di desa Ngraho, Dawu, dan Klitik, ditemukan di lahan petani SLPHT dan non SLPHT pada awal pengamatan (tanaman umur 14 hst), sedangkan di Mulyorejo keberadaan hama tersebut baru terdeteksi pada satu minggu kemudian (tanaman umur 21 hst). Wereng batang coklat di Mulyorejo (pada lahan petani SLPHT dan non SLPHT) seperti halnya PBP juga terdeteksi pada tanaman umur 21 hst, sementara di tiga desa yang lain yaitu Ngraho, Dawu, dan Klitik (lahan petani SLPHT dan non SLPHT) populasi WBC baru terdeteksi pada tanaman umur 28 hst.

Kepadatan populasi hama ternyata rendah, kurang dari 2 ekor per 10 kali ayunan ganda jaring (WBC) dan intensitas serangan kurang dari 15 persen (PBP) masih di bawah ambang ekonomi, kecuali di kabupaten Bojonegoro sudah melebihi ambang ekonomi yaitu lebih dari 20 persen, sedangkan BSC dengan intensitas penyakit lebih dari 25 persen menunjukkan derajat keparahan penyakit termasuk berat.

Penggunaan pestisida terutama insektisida untuk pengendalian OPT masih menjadi pilihan petani, meskipun frekuensinya sudah menurun dan petani yang melakukan aplikasi pestisida secara terjadwal sudah makin berkurang. Petani SLPHT maupun non SLPHT tampak memiliki pemahaman mengenai PHT, ditunjukkan adanya transfer ilmu tetapi prinsip-prinsip PHT belum sepenuhnya dilakukan. Petani belum menerapkan pengendalian biologi, namun beberapa cara pengendalian kultur teknik dalam pengelolaan tanaman telah dilakukan dengan baik misalnya dalam hal penanaman secara serentak, sanitasi, dan penggunaan varietas.

SUMMARY

Present Status of Rice Pest and the Use of Pesticides at Farmer's Level Post Implementation of IPM; Bagus Dimas Prabowo, 041510401060; 2010: 47 pages; Plant Pest and Diseases Department, Faculty of Agriculture, Jember University.

The use of chemical pesticides at farmer's level on rice field for about two decades after the implementation of IPM still suspected becomes the main choice of farmer's and the major development of pest on rice plants is still fairly high. The research is conducted to determine the present status of rice pests and pesticide use at farmer's level and how much farmer's still apply the principles of IPM. The research was conducted at dry season of rice field in the Bojonegoro Regency and Ngawi Regency, East Java province, Indonesian. Two sample villages were selected for each regency, they were Mulyorejo village of Balen District and Ngraho village of Kalitidu District (Bojonegoro Regency), Dawu village of Paron District and Klitik village of Geneng District (Ngawi Regency).

Rice field as the object of research were distinguished between field managed by farmers of "*SLPHT*" and "non-*SLPHT*". Data collection on rice field covered the existence of major pests (insects and diseases), population density and damages intensity of pests, disease intensity, and rice varieties. Appreciation to farmer's performance in IPM principle implementation of pests control conducted through interview with farmer respondent by using questioner. Respondent of farmers were also distinguished between farmers of "*SLPHT*" and "non-*SLPHT*" which each amounted for twenty five respondents per village.

Determination of pest population density in the field was conducted using relative and absolute methods. Based on the species of pests found, the relative method was used to determine the population density of brown planthoppers (BPH) and the absolute method was used to determine the population density of white rice stem borers (WSB). The planthoppers were trapped using net sweeping by 10 times double net sweeps within 15 times at the rice field area in diagonally methode. The number of adults caught was then calculated, and their population

was compared between "*SLPHT*" and "non-*SLPHT*" farmer's field. While WSB population density was measured on the sample plots in the field. Sample plots of rice field with surface area of 1 x 1 m^2 (containing approximately twenty five plants) were determined by diagonal random sampling method. On each farmer's field tested ("*SLPHT*" and "non-*SLPHT*") were fifteen sample plots used. Observations of WSB population at each sample plot were carried out on five hills per plot. In addition to pest population density, the level of plant damage caused by WSB also determined with calculate the damages intensity.

Disease intensity or disease severity of narrow brown spot (NBS) as a major disease found in this research was determined base on infection severity catagories by 0-5 scale (Rating scale ranged from no infection on leaf up to more than 75 % of leaf surface infected or covered by spot). Determination disease intensity in field tested ("*SLPHT*" and "non-*SLPHT*") using the same sample plot with WSB damage intensity determination that is fifteen sample plots used, with five sample infected plants per plots.

Population density of pests, damages intensity, and disease intensity in rice field owned both "*SLPHT*" and "non-*SLPHT*" farmer's were recorded four times at weekly intervals, starting from 14 days old after transplanting (DAP) up to 42 DAP. Data were obtained in rice field were compared between farmer's of "*SLPHT*" and "non-*SLPHT*" was analyzed using t-student test. Data were obtained from interviews with farmers particularly which related with the farmer performance stated in the percentage of the famers respondent and were compared between farmers of "*SLPHT*" and "non-*SLPHT*".

The species of pests found in four sample villages on field of both "*SLPHT*" and "non-*SLPHT*" farmers proved to have no significant differences. The species of major pest were BPH and WSB, and no disease was found other than NBS. White stem borer in Ngraho, Dawu, and Klitik were found in the field of "*SLPHT*" and "non-*SLPHT*" farmers at the beginning of observations (14 days old after transplanting), whereas in Mulyorejo, the existence of the pest was newly detected one week later (21 days old after transplanting). Brown Planthoppers in Mulyorejo (on field of "*SLPHT* and "non-*SLPHT*" farmer's), as well as WSB,

were also detected on 21 days old after transplanting, while in another three villages, namely Ngraho, Dawu, and Klitik (field of “SLPHT” and “non-SLPHT” farmer’s) population of BPH was newly detected on 28 days old after transplanting.

Pest population density was low, less than two individual adults per 10 times double net sweeps (BPH) and damages intensity of less than 15 percent (WSB) was still below the economic threshold, except in Bojonegoro this had exceeded the economic threshold, that is more than 20 percent, while NBS with the disease intensity for more than 25 percent indicated the degree of severity of disease considered severe.

The use of pesticides, especially insecticides for pest control, was still an option for farmers, although the frequency had decreased and farmers who did a pesticide application by calendar system had increasingly decreased. The “*SLPHT*” and ”non-*SLPHT*” farmer’s seemed to have an understanding of IPM, indicated by the existence of knowledge transfer, but the principles of IPM had not been fully performed. Farmer’s had not applied biological control, but some ways of cultural practices control in crop management had been done very well, for example in the case of planting simultaneously, sanitation, and using of varieties.

DAFTAR ISI