

RINGKASAN

Jagung merupakan sereal yang bernilai ekonomis karena kedudukannya sebagai sumber karbohidrat dan protein kedua setelah padi. Salah satu penyakit utama padi adalah penyakit bulai, yang disebabkan oleh *Peronoscleospora maydis*, *P. sorghi* dan *P. philiphinensis*. Penggunaan fungisida kimiawi memberikan dampak buruk terhadap lingkungan. Penggunaan fungisida hayati merupakan salah satu cara pengendalian ramah lingkungan. Penelitian ini bertujuan untuk mengetahui kemempunan Bio P60 dan Bio T10 secara tunggal maupun gabungan dengan fungisida dalam menekan penyakit bulai pada tanaman jagung dan mengetahui pengaruhnya terhadap pertumbuhan dan produksi jagung.

Penelitian dilaksanakan di Laboratorium Perlindungan Tanaman Fakultas Pertanian, Universitas Jenderal Soedirman, Purwokerto dan lahan jagung di Desa Tangkisanpos, Kecamatan Jogonalan, Kabupaten Klaten, mulai Januari sampai Juni 2016. Penelitian menggunakan Rancangan Acak Kelompok dengan 3 ulangan dan 12 perlakuan, terdiri kontrol, Bio P60, Bio T10, penyemprotan Bio P60 dan Bio T10, dan fungisida fenamidon, perlakuan benih dengan fungisida fenamidon dan penyemprotan Bio P60, Bio T10, dan fungisida fenamidon, perlakuan benih dengan fungisida metalaxyl-m dan dimethomorph, serta cara petani. Variabel pengamatan meliputi masa inkubasi, kejadian penyakit, intensitas serangan, laju infeksi, perkecambahan, tinggi tanaman, jumlah daun, saat berbunga pertanaman, jumlah tongkol per tanaman, berat tongkol basah per tanaman, berat tongkol kering per tanaman, dan panjang tongkol isi.

Hasil penelitian menunjukkan bahwa perlakuan Bio P60, serta perlakuan benih dengan fenamidon dan penyemprotan Bio P60 mampu menekan masa inkubasi sebesar 33,34 dan 25,02%. Perlakuan benih dengan dimethomorph dan perlakuan penyemprotan dengan Bio T10 mampu menekan kejadian penyakit sebesar 97,05 dan 59,53%, tetapi belum mampu menekan intensitas penyakit. Perlakuan Bio T10, penyemprotan Bio T10, dan perlakuan benih dengan fenamidon dan penyemprotan Bio T10 belum mampu menekan masa inkubasi, kejadian dan intensitas penyakit. Perlakuan Bio P60 tunggal mampu meningkatkan tinggi tanaman sebesar 14,92%, dan Bio T10 baik tunggal maupun gabungan dengan fungisida belum mampu menambah tinggi tanaman dan jumlah daun. Perlakuan penyemprotan Bio P60 tunggal maupun gabungan dengan fungisida mampu meningkatkan berat tongkol basah dan kering serta panjang tongkol isi masing-masing sebesar 13,73 dan 18,91%, 19,23 dan 27,58%, dan 10,84 dan 20%. Perlakuan penyemprotan Bio T10 mampu meningkatkan panjang tongkol isi sebesar 10,84 % namun perlakuan Bio T10 tunggal, dan perlakuan benih dengan fungisida fenamidon belum mampu meningkatkan berat tongkol basah, berat tongkol kering dan dibandingkan kontrol.

SUMMARY

*Corn is a cereal which is economically valuable because of its position as the second source of carbohydrates and protein after rice. One of the major disease of rice is downy mildew, caused by *Peronoscleospora maydis*, *P. sorghi* and *P. philiphinensis*. The use of chemical fungicides adversely affect the environment. Biological fungicide use is one way of controlling the environment. This study aims to determine efficacy Bio Bio P60 and T10 singly or in combination with fungicides to suppress downy mildew on corn and determine the effect on the growth and production of maize.*

Research conducted at the Laboratory of Plant Protection, Faculty of Agriculture, University of General Sudirman, Purwokerto and corn fields in the village of Tangkisanpos, District Jogonalan, Klaten regency, from January to June 2016. The study used randomized block design with three replications and 12 treatments, consisting of control, Bio P60, Bio T10, spraying Bio Bio P60 and T10, and fenamidon fungicides, seed treatment with fungicide spraying fenamidon and P60 Bio, Bio T10 and fenamidon fungicides, seed treatment with fungicide metalaxyl-m and dimethomorph, and farmer practice. Variables include the observation of the incubation period, the incidence of the disease, the intensity of the attack, the rate of infection, germination, plant height, leaf number, flowering time of planting, number of cobs per plant, weight of wet cobs per plant, the weight of dry cobs per plant and cob length content.

The results showed that the treatment Bio P60 and seed treatment with fenamidon and spraying Bio P60 able to suppress the incubation period respectively 33.34 and 25.02%, but has not been able to suppress the incidence and intensity of the disease. Treatment Bio T10, with dimethomorph seed treatment and spraying treatment with Bio T10 is able to suppress the incidence of the disease by 97.05 and 59.53%, Bio T10 but has not been able to suppress the intensity of the disease. Treatment Bio T10, respectively have not been able to suppress the incubation period, and intensity of the disease. P60 Bio single treatment can improve plant height of 14.92%, and the treatment Bio T10 either singly or in combination with fungicides has not been able to increase plant height and number of leaves. P60 Bio spraying single treatment or in combination with fungicides able to increase the weight of the wet and dry cob cob length contents respectively by 13.73 and 18.91%, 19.23 and 27.58%, and 10.84 and 20%. T10 Bio spraying treatment can improve the long-cob content of 10.84%, but the single T10 Bio treatment and fungicide seed treatment with fenamidon not been able to increase the weight of the wet cobs, cob dry weight than the control.