RINGKASAN

Produksi jagung manis di Indonesia masih terbilang cukup rendah. Biopestisida memiliki senyawa yang mudah terdegradasi di alam sehingga dapat juga meningkatkan pertumbuhan dan hasil tanaman seperti jagung manis. Oleh kerena itu biopestisida digunakan dalam penelitian ini untuk meningkatkan pertumbuhan jagung manis. Penelitian dilaksanakan dengan jenis tanah incepticol di lahan kebun percobaan Fakultas Pertanian, Universitas Jenderal Soedirman, Desa Karangwangkal, Kecamatan Purwokwerto Utara, Kabupaten Banyumas. Penelitian dilaksanakan pada bulan Maret sampai dengan Mei 2018.

Penelitian ini merupakan percobaan lapang, rancangan percobaan yang digunakan adalah Rancangan Acak Kelompok (RAK) dengan 3 perlakuan dan masing-masing perlakuan diulang sebanyak 9 kali sehingga menghasilkan 27 satuan petak percobaan. Satu petak percobaan terdapat 200 tanaman jagung manis dengan luasan petak 5 m x 6 m dan dengan jarak tanam 70 cm x 20 cm. Data hasil penelitian dianalisis dengan Anova taraf nyata 5% dengan menggunakan aplikasi DSAASTAT. Apabila hasil pengujian berpengaruh nyata, maka analisis dilanjutkan dengan Uji Beda Nyata Terkecil (BNT) pada taraf kesalahan 5%.

Variabel yang diamati adalah tinggi tanaman, jumlah daun, diameter batang, luas daun, bobot tanaman segar, bobot tanaman kering, panjang tongkol, panjang tongkol kupas, bobot tongkol, bobot tongkol kupas, diameter tongkol, dan bobot tongkol per-petak efektif. Hasil penelitian menunjukkan 1) Biopestisida berbasis *B. subtilis* B1 yang diujikan mampu menghasilkan tinggi tanaman dan bobot tongkol tertinggi 196,25cm dan 331,00g, 2) Aplikasi biopestisida merupakan perlakuan terbaik dalam meningkatkan pertumbuhan dan hasil.

SUMMARY

Sweet corn production in Indonesia is still quite low. Biopesticides have compounds that are easily degraded in nature so they can also increase plant growth and yield such as sweet corn. Because of that, biopesticides are used in this study to increase the growth of sweet corn. The research was carried out with incepticol soil in the experimental farm area of the Faculty of Agriculture, Jenderal Sudirman University, Karangwangkal Village, North Purwokwerto District, Banyumas Regency. The research was conducted from March until May 2018.

This study was a field experiment, the experimental design used was Randomized Block Design (RBD) with 3 treatments and each treatment was repeated 9 times to produce 27 experimental plot units. One plot of experiment is 200 sweet corn plants with plot area of 5 m x 6 m and with spacing of 70 cm x 20 cm. The data of the research results were analyzed by ANOVA at 5% level using the DSAASTAT application. If the test results are significant, then the analysis is continued with the Least Significant Difference Test (LSD) at the 5% error level.

The variables observed were plant height, number of leaves, stem diameter, leaf area, fresh plant weight, dry plant weight, ear length, peeled cob length, ear weight, peeled cob weight, ear diameter, and effective ear per plot weight. The results showed that 1) The tested B. subtilis B1 based biopesticide was able to produce the highest plant height and ear weight of 196.25cm and 331.00g, 2) The application of biopesticides was the best treatment in increasing growth and yield.