

RINGKASAN

Tanaman jagung manis merupakan salah satu komoditi sayuran yang kaya akan manfaat. Produksi jagung manis di Indonesia belum mampu memenuhi kebutuhan nasional. Rendahnya produktivitas jagung manis secara nasional disebabkan oleh ketahanan terhadap hama dan penyakit yang masih rendah dan sistem budidaya yang belum tepat. Pemberian mikroorganisme ke dalam tanah dapat dijadikan solusi alternatif untuk meningkatkan produktivitas jagung manis. Mikroorganisme yang berasosiasi dengan perakaran tanaman dan mampu meningkatkan pertumbuhan tanaman disebut sebagai PGPF (*Plant Growth Promoting Fungi*). Mikroorganisme fungsional yang dikenal sebagai PGPF diantaranya adalah jamur *Trichoderma* sp. dan *Gliocladium* sp. Penelitian ini bertujuan untuk mengetahui pengaruh pemberian *Trichoderma* sp. isolat pinus dan *Gliocladium* sp. baik secara tunggal dan gabungan terhadap pertumbuhan dan hasil tanaman jagung manis.

Penelitian dilaksanakan pada bulan Agustus sampai November 2015 di Laboratorium Perlindungan Tanaman dan lahan percobaan Fakultas Pertanian Universitas Jenderal Soedirman, Purwokerto. Penelitian menggunakan Rancangan Acak Kelompok (RAK) dengan 8 perlakuan dan 6 ulangan. Perlakuan terdiri atas kontrol, P1=*Gliocladium* sp., P2=*Trichoderma* sp. isolat pinus STP 1, P3=*Trichoderma* sp. isolat pinus STP6a, P4=*Gliocladium* sp. dan *Trichoderma* sp. isolat pinus STP 1, P5=*Gliocladium* sp. dan *Trichoderma* sp. isolat pinus STP 6a, P6=*Gliocladium* sp. dengan *Trichoderma* sp. isolat pinus STP 1 dan STP 6a, P7=*Trichoderma* sp. isolat pinus STP 1 dan *Trichoderma* sp. isolat pinus STP 6a. Variabel yang diamati meliputi tinggi tanaman, jumlah daun, bobot segar dan bobot kering tanaman, panjang tongkol berkelobot dan tanpa kelobot, lingkaran tongkol, jumlah baris per tongkol, bobot tongkol berkelobot dan tanpa kelobot.

Hasil penelitian menunjukkan bahwa pemberian *Trichoderma* sp. isolat pinus dan *Gliocladium* sp. baik secara tunggal maupun gabungan, mampu meningkatkan tinggi tanaman jagung manis sebesar 11,53%-18,82% dan meningkatkan bobot segar tanaman jagung manis sebesar 14,19%-41,41%. Namun pemberian *Trichoderma* sp. isolat pinus dan *Gliocladium* sp. baik secara tunggal maupun gabungan tidak mampu meningkatkan hasil tanaman jagung manis.

SUMMARY

Sweet corn is one of the vegetables that full of benefits. Indonesian national productivity is still low. It is due to pests, diseases and unappropriate farming system. The application of microorganism into soil can be used as alternative solution to improve sweet corn productivity. Microorganism associated with plant root and improve growth of plant known as Plant Growth Promoting Fungi (PGPF). Microorganism known as PGPF are *Trichoderma* sp. and *Gliocladium* sp. This research aimed to determined the single or combination effect of pine isolate *Trichoderma* sp. and *Gliocladium* sp. application to sweet corn growth and yield.

This research was conducted from August to November 2015 in Plant Protection Laboratory and experimental field of the Faculty of Agriculture, University of Jenderal Soedirman, Purwokerto. Randomized Block Design (RBD) with 8 treatments and 6 replications was used in this research. Treatments were control, P1= *Gliocladium* sp., P2= STP 1 pine isolate *Trichoderma* sp., P3= STP 6a pine isolate *Trichoderma* sp., P4= *Gliocladium* sp. and STP 1 pine isolate *Trichoderma* sp., P5= *Gliocladium* sp. and STP 6a pine isolate *Trichoderma* sp., P6= *Gliocladium* sp. and STP 1 and STP 6a pine isolate *Trichoderma* sp., P7= STP 1 pine isolate *Trichoderma* sp. and STP 6a pine isolate *Trichoderma* sp. Observed variables were plant height, number of leaves, plant fresh and dry weight, husked and non husked ear length.

The result showed that single and combined applications of pine isolate *Trichoderma* sp. and *Gliocladium* sp. were able to increased sweet corn growth for 11,53%-18,82% and fresh weight for 14,19%-41,41%%. Meanwhile, single and combined applications of pine isolate *Trichoderma* sp. and *Gliocladium* sp. were not able to increased sweet corn yield.