RINGKASAN

Permintaan komoditas hortikultura terutama sayuran terus meningkat seiring dengan meningkatnya kesejahteraan dan jumlah penduduk. Salah satu upaya yang dapat dilakukan untuk meningkatkan produksi sawi pagoda adalah intensifikasi melalui pemupukan. Pupuk yang dapat digunakan salah satunya, yaitu Pupuk Organik Hayati (POH) berbasis Bakteri Penambat N (BPN). Tujuan penelitian ini, yaitu untuk mengetahui pengaruh isolat BPN asal perakaran bawang dan mengetahui isolat BPN terbaik dalam mendukung pertumbuhan dan hasil sawi pagoda. Penelitian berupa percobaan polibag yang dilaksanakan di Laboratorium Agroekologi Fakultas Pertanian Universitas Jenderal Soedirman dan *screen house* di Desa Kebanggan Kecamatan Sumbang Kabupaten Banyumas pada Februari-Mei 2022. Perlakuan disusun secara faktorial dengan dua faktor dalam Rancangan Acak Kelompok. Faktor pertama adalah asal tanah yang terdiri atas t_1 (Desa Pesawahan) dan t_2 (Desa Menganti). Faktor kedua adalah jenis isolat BPN yang digunakan, terdiri atas i_0 (Kontrol), i_1 (isolat bakteri BR2), i_2 (isolat bakteri CK2), dan i_3 (isolat bakteri CL3). Data penelitian dianalisis menggunakan analisis ragam anova dan apabila terdapat keragaman antar perlakuan maka dilakukan uji lanjut dengan uji *Duncan Multiple Range Test* (DMRT) dengan taraf 5 %. Variabel pengamatan yang dilakukan pada penelitian ini, yaitu tinggi tanaman, jumlah daun. kehijauan daun (SPAD Unit), luas daun, panjang akar terpanjang, bobot segar tajuk, bobot kering tajuk, bobot segar akar dan bobot kering akar. Hasil penelitian menunjukkan bahwa pemberian isolat bakteri berpengaruh terhadap variabel tinggi tanaman. Asal tanah berpengaruh terhadap variabel pengamatan luas daun, jumlah daun, bobot kering tajuk. Interaksi antara asal tanah dan isolat bakteri berpengaruh pada variabel pengamatan kehijauan daun (SPAD unit), panjang akar, jumlah daun, bobot segar tajuk, dan bobot kering tajuk. Hasil penelitian menunjukkan bahwa pemberian isolat BPN asal perakaran bawang merah berpengaruh terhadap variabel tinggi tanaman. Isolat bakteri terbaik dalam meningkatkan tinggi tanaman, yaitu i_2 (CK2) dan i_3 (CL3), meningkatkan kehijauan daun (SPAD unit), yaitu i_1 (BR2) dan i_2 (CK2), meningkatkan panjang akar terpanjang, jumlah daun, bobot segar tajuk dan bobot kering tajuk, yaitu i_2 (CK2).

Kata kunci: Pemupukan, isolat bakteri, sawi pagoda

SUMMARY

Demand for horticultural commodities especially vegetables continues to increase as the growing well-being and population increases. One of the efforts made to increase the production of the pagoda plants is with intensification through fertilization. One that can be used is Bio-organic Fertilizers (BOFs) based on N-fixing Bacteria. The purpose of this study was to determine the effect of N-fixing Bacteria isolates from shallot roots and to determine the best N-fixing Bacteria isolates in supporting the growth and yield of Pagoda plants. The research was in the form of a polybag experiment conducted at the Agroecology Laboratory, Faculty of Agriculture, Jenderal Soedirman University and a screen house in Kebanggan, Sumbang, Banyumas in February-May 2022. The treatments were arranged in factorially with two factors in the Randomized Block Design. The first factors was the origin of the soil which consists of t_1 (Pesawahan Village) and t_2 (Menganti Village). The second factors was the type of N-fixing Bacteria isolate used, consisting of i_0 (control), i_1 (bacterial isolates BR2), i_2 (bacterial isolates CK2), and i_3 (bacterial isolates CL3). Research data obtained were analyzed using anova and if there was variation between treatments, the analysis then continued with the Duncan Multiple Range Test (DMRT) at the 5 % level. Variables observed in this study were plant height, number of leaves, chlorophyll meter (SPAD meter), leaf area, longest root length, canopy fresh weight, canopy dry weigh, root fresh weights and root dry weights. The results showed that the provision of bacterial isolates had an effect on plant height variables. The origin of the soil affected the observed variables of leaf area, number of leaves, and canopy dry weights. The interaction between soil origin and bacterial isolates affected the chlorophyll meter (SPAD meter) observation variables, longest root length, number of leaves, canopy fresh weights, and canopy dry weights. The results showed that application of N-fixing Bacteria isolates from shallot roots affected plant height variables. The best bacterial isolate in increasing plant height, namely i_2 (CK2) and i_3 (CL3), increasing chlorophyll meter (SPAD meter), namely i_1 (BR2) and i_2 (CK2), increasing longest root length, number of leaves, canopy fresh weight and canopy dry weigh, namely i_2 (CK2).

Key Word: Fertilization, n-fixing bacteria, pagoda plants