RINGKASAN

Pakcoy merupakan komoditas yang banyak dibudidayakan oleh petani di Indonesia. Akan tetapi produksi tanaman pakcoy mengalami penurunan dalam tiga tahun terahir. Pemanfaatan lahan marjinal merupakan salah satu solusi untuk memperluas area tanam dan meningkatkan populasi tanaman, yang diharapkan mampu memenuhi kebutuhan pasar. Penelitian ini bertujuan untuk mengetahui dosis pupuk hayati Mikoriza-Trichoderma yang memberikan respon terbaik terhadap fisiologis, pertumbuhan dan hasil tanaman pakcoy. Mengetahui penggunaan dosis pupuk N, P, K yang memberikan respon terbaik terhadap fisiologis, pertumbuhan dan hasil tanaman pakcoy. Mengetahui kombinasi perlakuan yang baik antara Mikoriza-Trichoderma dan pupuk N, P, K terhadap fisiologis, pertumbuhan dan hasil tanaman pakcoy. Mengetahui hubungan antara karakter fisiologis dan pertumbuhan terhadap hasil.

Penelitian ini dilaksanakan pada bulan Mei sampai dengan Juli 2017 di *Screen house* dan Laboratorium Perlindungan Tanaman, Laboratorium Agronomi dan Hortikultura Fakultas Pertanian Universitas Jenderal Soedirman, Purwokerto. Penelitian ini berupa percobaan pot dengan rancangan perlakuan faktorial 2 x 2. Faktor pertama berupa penggunaan dosis pupuk N, P,K yaitu: 50 dan 100%. Faktor kedua berupa pupuk hayati Mikoriza-Trichoderma yang meliputi 10 g Mikoriza -Trichoderma 0 g, 20 g Mikoriza -Trichoderma 10 g, dan 30 g Mikoriza -Trichoderma 20 g. Semua kombinasi perlakuan dialokasikan ke dalam Rancangan Acak Kelompok Lengkap dengan 3 ulangan. Setiap unit percobaan terdiri dari 2 pot tanaman pakcoy, setiap pot terdiri 1 tanaman. Variabel pengamatan meliputi kandungan klorofil, jumlah stomata, lebar bukaan stomata, jumlah daun, luas daun, bobot akar segar, bobot akar kering, bobot tanaman kering dan bobot tanaman segar. Hasil pengukuran dianalisis menggunakan uji F dan dilanjutkan dengan DMRT 5%.

Hasil penelitian bahwa pemberian Trichoderma pada pupuk hayati Mikoriza menghasilkan variabel fisiologis dan variabel pertumbuhan yang tidak berbeda, akan tetapi menghasilkan variabel lebar bukaan stomata dan bobot tanaman segar yang berbeda. Pemberian pupuk N, P, K dengan dosis 50 dan 100 % dari rekomendasi atau tanpa pemberian pupuk N, P, K tidak berbeda pada variabel fisiologis, pertumbuhan, dan hasil. Pemberian pupuk hayati Mikoriza dan tanpa pupuk N, P, K memberikan hasil yang tidak berbeda pada variabel kandungan klorofil, jumlah stomata, jumlah daun, luas daun, bobot akar segar, bobot akar kering, bobot tanaman kering. Ada korelasi yang positif antara variabel fisiologis dengan variabel pertumbuhan luas daun. Sementara pada variabel pertumbuhan dan variabel hasil berkorelasi negatif terhadap variabel fisiologis.

Kata kunci: Pakcoy, Mikoriza, Trichoderma dan Pupuk N, P, K

SUMMARY

Vegetable crops is one of the most cultivated crops by farmers in Indonesia. However there was a reduction of the vegetables crops production especially pakcoy's group in the last three years. Utilization of the marginal land is one of the solution to expand plantation area and increase plant's population which is expected to be able to fulfill market demands. The research was aimed to understand Mycorrhiza-Trichoderma biofertilizer doses provide the good for physiology, growth, and yields responses. Understand NPK fertilizer doses provide the good for physiology, growth, and yields responses. Understand the best treatment combinations between Mycorrhiza-Trichoderma and NPK fertilizer toward physiology, growth, and yields responses. Understand correlation between physiology's character and growth to yields.

This research was conducted on Mei until July 2017 at screen house and plant protection's laboratory, Faculty of Agriculture, Jenderal Soedirman University, purwokerto. Research design that used was Randomized Complete Block Design with two factors. The first factor was application of N, P, K fertilizer doses i.e 0, 50, and 100% recommended doses. The second factor was application of Mycorrhiza-Trichoderma biofertilizer consisted of 10 g Mycorrhiza-Trichoderma 0 g, 20 g Mycorrhiza-Trichoderma 10 g, and 30 g Mycorrhiza-Trichoderma 20 g. Physiology-related variables measured were chlorophyll's content, number of stomata, and stomatal aperture's width. Growth-related variables measured were number of leaves, leaf area, fresh root weight, dry root weight, and dry plant weight. Yield-related variable measured was fresh plant weight. Subsequently those data was analyzed using F test followed by Duncan Multiple Range Test at 5% significance levels.

Results showed that the application of Trichoderma on Mycorrhiza biofertilizer didn't gave significant different on chlorophyll's content, number of stomata, number of leaves, leaf area, fresh root weight, dry root weight, and dry plant weight, but gave different result on stomatal aperture's width and fresh plant weight variables. Application of NPK fertilizer with 50 and 100% recommended doses or without NPK fertilizer didn't gavew significant different on physiology, growth, and yield variables. Application of Mycorrhiza biofertilizer without using NPK fertilizer gave no significant different on chlorophyll's content, number of stomata, number of leaves, leaf area, fresh root weight, dry root weight, and dry plant weight variables. There is positive correlation between physiology variable and leaf area variabel. While on growth variable and yield variable have negative correlation toward physiology variable.

Keyword: Pakcoy, Mycorrhiza, Trichoderma, NPK fertilizer.