

RINGKASAN

Cabai merah sebagai komoditas sayuran yang sangat dibutuhkan masyarakat dalam kehidupan sehari-hari. Cabai merah tidak hanya digunakan untuk bumbu masak atau bahan campuran pada berbagai industri pengolahan makanan dan minuman, tetapi juga digunakan untuk obat-obatan dan kosmetik. Penggunaan pestisida dan pupuk anorganik secara terus menerus dapat berbahaya bagi kesehatan manusia. Salah satu alternatif yang dapat digunakan untuk mengurangi penggunaan pestisida dan pupuk anorganik adalah *compost tea*. Penelitian ini bertujuan untuk mengetahui pengaruh pemberian *compost tea* terhadap pertumbuhan dan hasil tanaman cabai.

Penelitian ini dilaksanakan di Kebun Percobaan dan Laboratorium Agronomi dan Hortikultura, Fakultas Pertanian, Universitas Jenderal Soedirman dari bulan Juni sampai dengan November 2018. Rancangan percobaan yang digunakan yaitu Rancangan Acak Kelompok (RAK) dan diulang tiga kali. Perlakuan yang digunakan adalah *compost tea* kotoran sapi 5%, *compost tea* kotoran sapi 10%, *compost tea* kotoran sapi 15%, *compost tea* kotoran ayam 5%, *compost tea* kotoran ayam 10%, *compost tea* kotoran ayam 15%, *compost tea* baglog jamur 5%, *compost tea* baglog jamur 10% *compost tea* baglog jamur 15% dan tanpa perlakuan. Variabel yang diamati yaitu tinggi tanaman, jumlah daun, total luas daun, bobot kering tajuk, bobot kering akar, rasio tajuk akar, panjang akar, klorofil a, klorofil b, klorofil total, kerapatan stomata, lebar bukaan stomata, kehijauan daun, jumlah bunga per tanaman, volume buah dan bobot buah. Data yang diperoleh dianalisis dengan analisis varian, apabila menunjukkan pengaruh nyata diuji lanjut menggunakan uji *Duncan's Multiple Range Test* (DMRT) pada taraf kesalahan 5%. Hasil penelitian menunjukkan bahwa pemberian *compost tea* kotoran ayam 5% meningkatkan tinggi tanaman sebesar 13,14 cm, total luas daun 329,71 cm², kehijauan daun 6,94 SPAD unit. Pemberian *compost tea* baglog jamur 5% meningkatkan jumlah daun 15 helai, bobot kering tajuk 70,59 g, rasio tajuk akar 5,38. kerapatan stomata 36,21 µm. *Compost tea* kotoran sapi 5% meningkatkan klorofil a 0,004 mg/g, jumlah bunga per tanaman 16 dan pemberian *compost tea* kotoran ayam 5% meningkatkan volume buah per buah sebesar 3,52 cm³ dan bobot buah per buah 3,39 g. Pemberian *compost tea* tidak memberikan pengaruh terhadap variabel klorofil b, klorofil total, panjang akar, bobot kering akar dan lebar bukaan stomata.

SUMMARY

Red pepper is essential vegetable for most people. Red pepper is not only used for cooking ingredients or mixed ingredients in various food and beverage processing industries, but also used for medicines and cosmetics. The use of inorganic pesticides and fertilizers continuously may had risk for human health. An alternative that can be used to reduce using pesticides and inorganic fertilizers was compost tea. The research was aimed to study the effect of giving compost tea on the growth and yield of red pepper plants.

The research was conducted from June until November 2018 at Eksperimental Farm and Laboratory of Agronomy and Horticulture, Faculty of Agriculture, Jenderal Soedirman University. The research was arranged by Randomized Completely Block Design (RCBD) and repeated in three times. The treatments of this research were compost tea of cow manure 5%, compost tea of cow manure 10%, compost tea of cow manure 15%, compost tea of chicken manure 5%, compost tea of chicken manure 10%, compost tea of chicken manure 15%, compost tea of mushrooms media waste 5%, compost tea of mushrooms media waste 10%, compost tea of mushrooms media waste 15%, and control. The observed variables were plant height, number of leaf, total leaf area, chlorophyll a content, chlorophyll b content, total chlorophyll content, leaf greenness, stomata width, stomata density, plant dry weight, root dry weight, root shoot ratio, number of flower, fruit volume and fruit weight. The data were analyzed by analysis of variance (ANOVA) at error level 5% and if significant different was continued by Duncan's Multiple Range Test (DMRT). The result of the research showed that compost tea of chicken manure 5% increased plant height 13,14 cm, total leaf area 329,71 cm², leaf greenness 6,94 SPAD unit. Application of compost tea of mashrooms media waste 5% increased number of leaves 15 strands, plant dry weight 70, 59 g, root shoot ratio 5,3, stomata width 36,21 μ². Compost tea of cow manure 5% increased chlorophyll a content 0,004 mg/mg, number of flowers 16 and compost tea of chicken manure 5% increased fruit volume per fruit 3,52 cm³ and fruit weight per fruit 3,39 g. Application of compost tea didn't gave affect on chlorophyll bcontent, total chlorophyll content, roots length, root dry weight, and stomata opening width.