

## RINGKASAN

Bayam merah (*Alternanthera amoena* Voss.) merupakan sayuran yang memiliki nilai ekonomis yang tinggi dibandingkan dengan jenis bayam lainnya. Produksi bayam di Indonesia dari tahun 2013 hingga tahun 2017 mengalami penurunan. Produksi bayam di Indonesia tahun 2013, 2014, 2015, 2016, 2017, adalah 9.616 ton, 9.406 ton, 8.645 ton, 7.517 ton, 7.789 ton. Hal ini menunjukkan perlu adanya peningkatan produksi bayam agar dapat mencukupi kebutuhan masyarakat dengan salah satu upayanya yaitu menggunakan pupuk organik kascing dan menggunakan media tanam. Penelitian ini bertujuan untuk mengetahui: (1) dosis pupuk kascing yang optimum terhadap pertumbuhan dan hasil tanaman bayam merah, (2) komposisi media tanam yang tepat terhadap pertumbuhan dan hasil tanaman bayam merah, dan (3) kombinasi komposisi media tanam dan dosis pupuk kascing yang dapat meningkatkan pertumbuhan dan hasil tanaman bayam merah.

Penelitian ini dilaksanakan pada bulan Juni sampai dengan Agustus 2019 di *screen house* Fakultas Pertanian dan Laboratorium Agronomi Hortikultura, Fakultas Pertanian, Universitas Jenderal Soedirman. Rancangan percobaan yang digunakan yaitu Rancangan Acak Kelompok Lengkap (RAKL) dengan 2 faktor. Faktor pertama adalah komposisi media tanam, yaitu M1 = 50 % tanah + 25% kompos + 25% arang sekam, M2 = 25 % tanah + 50% kompos + 25% arang sekam, M3 = 25% tanah + 25% kompos + 50% arang sekam. Faktor kedua adalah dosis pupuk kascing yaitu, K0 : Kontrol (tanpa kascing), K1: 22,5 g/polybag, K2: 45 g/polybag, dan K3: 67,5 g/polybag masing-masing faktor dikombinasikan dan didapatkan 12 kombinasi perlakuan. Perlakuan diulang sebanyak 3 kali ulangan sehingga diperoleh 36 unit percobaan. Variabel yang diamati adalah tinggi tanaman (cm), jumlah daun (helai/tanaman), luas daun (cm<sup>2</sup>/tanaman), bobot tanaman segar (g/tanaman), bobot tanaman kering (g), bobot tajuk segar (g) dan bobot tajuk kering (g), bobot akar segar (g), bobot akar kering (g). Data yang diperoleh dianalisis dengan analisis varian. Apabila perlakuan berbeda nyata diuji lanjut dengan menggunakan *Duncan Multiple Range Test* (DMRT) pada taraf 5% dan 1%.

Hasil penelitian menunjukkan pemberian perlakuan dosis kascing 67,5 g/polybag atau setara dengan 30 ton/ha sangat berpengaruh terhadap peningkatan tinggi tanaman 22,44 cm, jumlah daun sebesar 27,11 helai, luas daun sebesar 57,27 cm<sup>2</sup>, bobot tanaman segar sebesar 53,05 g, bobot tajuk segar sebesar 37,19 g, bobot akar segar sebesar 16,41 g, Pemberian macam media tanam M2 = 25 % tanah + 50% kompos + 25% arang sekam menghasilkan tinggi tanaman sebesar 27,83 cm, jumlah daun sebesar 32,4 helai, luas daun sebesar 70,61 cm<sup>2</sup>, bobot tanaman segar sebesar 76,34 g, bobot tanaman kering sebesar 7,61 g, bobot tajuk segar sebesar 54,74 g, bobot tajuk kering sebesar 7,05 g, bobot akar segar 23,52 g/tanaman, bobot akar kering 2,19 g/tanaman. Serta tidak terdapat interaksi antara dosis kascing dan media tanam untuk meningkatkan pertumbuhan dan hasil tanaman bayam merah.

## SUMMARY

Red spinach (*Alternanthera amoena* Voss.) Is a vegetable that has a high economic value compared to other types of spinach. Spinach production in Indonesia from 2013 to 2017 has decreased. Spinach production in Indonesia in 2013, 2014, 2015, 2016, 2017, was 9,616 tons, 9,406 tons, 8,645 tons, 7,517 tons, 7,789 tons. This shows the need for increased production of spinach in order to meet the needs of the community with one of its efforts, namely using organic fertilizer vermicompost and using planting media. This study aims to (1) determine the optimum dose of vermicompost fertilizer on the growth and yield of red spinach plants, (2) determine the exact composition of the planting media on the growth and yield of red spinach plants and, (3) find out the combination of the planting media composition and dosage of fertilizer kascing which can increase the growth and yield of red spinach plants.

This research was conducted in June 2019 until August 2019 at the Screen House of the Faculty of Agriculture and the Horticultural Agriculture Faculty of Agriculture, Jenderal Soedirman University. The experimental design used was a Complete Randomized Block Design (RCBD) with 2 factors. The first factor is the composition of the planting media, namely M1 = 50% soil + 25% compost + 25% husk charcoal, M2 = 25% soil + 50% compost + 25% husk charcoal, M3 = 25% soil + 25% compost + 50% husk charcoal. The second factor is the dose of vermicompost fertilizer, namely, K0: Control (without vermicompost), K1: 22.5 g / polybag, K2: 45 g / polybag, and K3: 67.5 g / polybag each factor is combined and 12 combinations are obtained treatment. The treatment was repeated 3 times to get 36 units of the experiment. The observed variables were plant height (cm), number of leaves (strands), leaf area (cm<sup>2</sup>), fresh plant weight (g), dry plant weight (g), fresh crown weight (g) and dry crown weight (g) , fresh root weight (g), dry root weight (g). The data obtained were analyzed by analysis of variance. If the treatment is significantly different, it is further tested using *Duncan Multiple Range Test* (DMRT) at the level of 5% and 1%.

The results showed that the application of vermicompost dosage treatment of 30 tons / ha or equivalent to 67.5 g / polybag greatly affected the increase in plant height 22.44 cm, number of leaves by 27.11 strands, leaf area by 57.27 cm<sup>2</sup>, plant weight fresh 53,05 g, fresh crown weight 37,19 g, fresh root weight 16,41 g, giving kinds of planting media M2 = 25% soil + 50% compost + 25% husk charcoal produces plant height of 27.83 cm, the number of leaves is 32.4 strands, the leaf area is 70.61 cm<sup>2</sup>, the weight of fresh plants is 76.34 g, the weight of dry plants is 7.61 g, the weight of fresh crowns is 54.74 g, the weight of dry crowns is 7.05 g, fresh root weight 23.52 g, dry root weight 2.19 g. And there is no interaction between the dose of vermicompost and planting media to increase growth and yield of red spinach plants.