RINGKASAN

Produksi utama tanaman sawi (*Brassica juncea*) ialah daun-daunnya yang mengandung vitamin dan mineral. Tanaman sawi memiliki kandungan vitamin A yang tinggi, sehingga sangat berguna dalam upaya mengatasi kekurangan vitamin A. Tanaman sawi memiliki umur panen yang cepat, namun perhatian petani terhadap tanaman sawi untuk dikembangkan masih kurang dikarenakan lahan yang semakin menyusut. Melihat semakin menyusutnya lahan pertanian di Indonesia dan kurangnya minat budidaya sayuran, maka bercocok tanam dengan sistem hidroponik menjadi salah satu pilihan. Penelitian ini bertujuan untuk: (1) mengetahui pengaruh modifikasi formula nutrisi hidroponik terhadap sifat kimia larutan dan serapan P tanaman sawi, (2) mengetahui pengaruh media tanam *cocogrow* dengan ditambahkan *zeolite* terhadapat sifat kimia larutan dan serapan P oleh tanaman sawi dan (3) mengetahui kelebihan dan kekurangan sistem hidroponik terhadap sifat kimia larutan dan serapan P oleh tanaman sawi.

Penelitian ini dilaksanakan di *Experimental Farm Green House* Fakultas Pertanian Universitas Jenderal Soedirman, Purwokerto, Banyumas, mulai dari bulan Juni - Agustus 2019. Penelitian ini menggunakan Rancangan Acak Kelompok Lengkap (RAKL) dengan dua faktor dan tiga ulangan. Faktor pertama yaitu formula nutrisi yang terdiri dari lima taraf, yaitu F_0 AB-mix (2,4% P_2O_5), F_1 (2,8% P_2O_5), F_2 (3,8% P_2O_5), F_3 (4,8% P_2O_5) dan F_4 (5,8% P_2O_5). Faktor kedua yaitu media tanam yang terdiri dari dua macam yaitu M_1 (cocogrow) dan M_2 (cocogrow+zeolit), sehingga diperoleh 10 kombinasi perlakuan dan diulang 3 kali. Data yang diperoleh dianalisis keragaman (Uji F) pada taraf kesalahan 5%. Apabila terdapat perbedaan nyata dan sangat nyata, dilanjutkan dengan uji DMRT (Duncan's Multiple Range Test) pada taraf kesalahan 5%.

Hasil penelitian menunjukkan bahwa pemberian formula nutrisi berpengaruh terhadap bobot tanaman kering, 11,32 g/tanaman dan pH larutan nutrisi 6,61. Aplikasi media tanam *cocogrow* tidak berpengaruh terhadap semua variabel, yaitu: pH, EC, TDS, dan P tersedia larutan nutrisi, serapan P oleh tanaman, bobot tanaman segar, serta bobot tanaman kering. Kombinasi antara pemberian formula nutrisi dan media tanam tidak menunjukkan adanya pengaruh pada semua variabel.

SUMMARY

The primary production of mustard plants (Brassica juncea) is the leaves that contain vitamins and minerals. Mustard plants have a high content of vitamin A, so it is beneficial in efforts to overcome vitamin A deficiency. Mustard plants have a fast harvest age, but farmers' attention to mustard plants to be developed is still lacking due to land that is increasingly decreasing. Seeing these agricultural land in Indonesia and the lack of interest in vegetable cultivation, farming with a hydroponic system is an option. This study aims to: (1) determine the effect of hydroponic nutrition formula modification on the chemical properties of solution and P uptake of mustard plants, (2) determine the effect of cocogrow growing media with zeolite added to the chemical properties of solution and P uptake by mustard plants and (3) the determine the strengths and hydroponic system deficiencies to the chemical properties of solution and P uptake by mustard plants.

This research was conducted at the Experimental Farm Green House of the Faculty of Agriculture, Jenderal Soedirman University, Purwokerto, Banyumas, starting from June - August 2019. This research used a Completely Randomized Block Design (RCBD) with two factors and three replications. The first factor is the nutritional formula consisting of five levels, namely F_0 AB-mix (2.8% P_2O_5), F_1 (2.8% P_2O_5), F_2 (3.8% P_2O_5), F_3 (4.8% P_2O_5) dan F_4 (5.8% P_2O_5).. The second factor is the planting media, which consists of two kinds, namely M_1 (cocogrow) and M_2 (cocogrow + zeolite), so that ten treatment combinations are obtained and repeated three times. The data obtained were analyzed diversity (F test) at an error level of 5%. If there are real and very significant differences, proceed with the DMRT test (Duncan's Multiple Range Test) at an error level of 5%.

The results showed that the application of nutritional formula significantly affected the dry weight of plants 11.32 g / plant and pH 6.61. Cocogrow planting media application did not significantly affect all variables, namely: pH, EC, TDS, and P available nutrient solution, P uptake by plant, fresh weight of plant, dry weight of plant. The combination of nutrition formula and planting media did not show any influence on all variables..