

RINGKASAN

Penelitian ini bertujuan untuk (1) mengkaji pengaruh komposisi media tanam yang berbeda terhadap kualitas hasil sawi hijau hidroponik, (2) mengkaji pengaruh modifikasi formula nutrisi terhadap kualitas hasil sawi hijau hidroponik dan (3) mengkaji kombinasi antara modifikasi formula nutrisi dan komposisi media tanam yang memberikan hasil terbaik terhadap kualitas hasil sawi hijau hidroponik. Penelitian dilaksanakan mulai dari bulan Juni 2019 sampai bulan Agustus 2019 di *Screenhouse* A23 Fakultas Pertanian Universitas Jenderal Soedirman (UNSOED), Laboratorium Agronomi dan Hortikultura Fakultas Pertanian, serta Laboratorium Ilmu dan Teknologi Pangan Fakultas Pertanian.

Rancangan yang digunakan adalah Rancangan Acak Kelompok (RAK) yang tersusun secara faktorial menggunakan dua faktor percobaan, yakni media tanam dan modifikasi unsur hara makro formula nutrisi. Faktor tersebut masing-masing terdiri dari dua taraf perlakuan dan lima taraf perlakuan. Taraf perlakuan media tanam yaitu M1 (media tanam *cocogrow*) dan M2 (media tanam *cocogrow* yang ditambahkan zeolit), sedangkan taraf perlakuan modifikasi unsur hara makro formula nutrisi terdiri dari F0 (tanpa mengubah unsur P dari AB mix (2,4 % P_2O_5)), F1 (modifikasi nutrisi dengan unsur P sebanyak 2,8% (2,8% P_2O_5)), F2 (modifikasi nutrisi dengan modifikasi unsur P sebanyak 3,8% (3,8% P_2O_5)), F3 (modifikasi nutrisi dengan modifikasi unsur P sebanyak 4,8% (4,8% P_2O_5)) dan F4 (modifikasi nutrisi dengan modifikasi unsur P sebanyak 5,8% (5,8% P_2O_5)). Variabel yang diamati meliputi jumlah daun, luas daun, kadar air, kadar khlorofil, kadar serat kasar, kadar total mineral, bobot tanaman segar, bobot tajuk segar dan bobot tanaman kering.

Hasil analisis sidik ragam menunjukkan bahwa perlakuan komposisi media tanam berpengaruh nyata terhadap variabel jumlah daun dan kadar serat kasar, sedangkan perlakuan perbedaan modifikasi unsur hara makro formula nutrisi memberikan pengaruh nyata pada variabel kadar khlorofil dan bobot tanaman kering. Interaksi perlakuan modifikasi unsur hara makro formula nutrisi dan

komposisi media tanam berpengaruh nyata terhadap kadar total mineral. Kombinasi perlakuan yang memberikan hasil terbaik terhadap kualitas hasil sawi hijau hidroponik adalah perlakuan tanpa modifikasi unsur hara makro formula nutrisi (F0) dan penggunaan media *cocogrow* yang ditambahkan zeolit (M2).

SUMMARY

This research aimed to (1) examine the effect of different composition of growing media on yield quality of hydroponics green mustard, (2) examine the effect of hydroponics nutrient modifications on yield quality of hydroponics green mustard and (3) examine the combination of different composition of growing media and hydroponics nutrient modifications which provide the best yield quality of hydroponics green mustard. This research was conducted on June 2019 until August 2019 at greenhouse A23 Faculty of Agriculture, Jenderal Soedirman University (UNSOED), the Agronomy-Horticultural Laboratory and the food sciences and technology laboratory.

This research used factorial randomized block design by using two experimental factors, namely growing medium as the first factor and hydroponics nutrient modifications as the second factor. These factors were each consisted of two levels of treatment and five levels of treatment respectively. The treatment levels of the first factor were cocogrow (M1) and cocogrow added by zeolit (M2), while the second factor consisted of F0 (non-modified macronutrient of hydroponics nutrient), F1 (modified macronutrient of hydroponics nutrient by 2,8% P_2O_5), F2 (modified macronutrient of hydroponics nutrient by 3,8% P_2O_5), F3 (modified macronutrient of hydroponics nutrient by 4,8% P_2O_5) and F4 (modified macronutrient of hydroponics nutrient by 5,8% P_2O_5). Variables observed in this study were leaf number, leaf areas, moisture content, chlorophyll content, crude fiber content, total mineral content, fresh plant weight, fresh canopy weight and dry plant weight.

The results showed that different composition of growing media gave a significant effect on leaf area and crude fiber content, while the hydroponics nutrient modifications gave a significant effect on chlorophyll content and dry plant weight. Interactions of both treatments gave a significant effect on total mineral content. This research showed that non-modified macronutrient of hydroponics nutrient (F0) and cocogrow medium added by zeolit (M2) gave the highest results

on most of the variables compared by each treatment levels of each factors. Therefore, the best combination for yield quality of hydroponics green mustard are non-modified macronutrient of hydroponics nutrient (F0) with cocogrow medium added by zeolit (M2).