

RINGKASAN

Selada merupakan salah satu jenis sayuran daun yang memiliki prospek pasar besar seiring dengan adanya peningkatan jumlah penduduk, pendidikan, pendapatan dan kesejahteraan masyarakat. Selada dikonsumsi secara mentah, karena itu produksi selada harus bersih dan terbebas dari tanah. Potensi pengembangan selada yang bersih dari tanah dan hasil yang berkualitas dapat dilakukan secara hidroponik. Ketersediaan nutrisi hidroponik berkualitas menjadi salah satu hal terpenting dalam budidaya hidroponik. Namun sampai saat ini hanya ada satu jenis nutrisi hidroponik yang ada dikalangan masyarakat yaitu *AB mix*, sehingga perlu dilakukan penelitian tentang nutrisi hidroponik selain *AB mix*. Penelitian ini bertujuan untuk mengetahui pengaruh (1) pemberian formula nutrisi modifikasi terhadap sifat kimia air, kandungan N dan P dan biomassa tanaman selada, (2) media tanam terhadap sifat kimia air, kandungan N dan P dan biomassa tanaman selada, dan (3) formula nutrisi dan media tanam terhadap sifat kimia air, kandungan N dan P serta biomassa selada.

Penelitian ini dimulai pada bulan Maret 2019 - Juli 2019 dan dilaksanakan di *screen house* dan Laboratorium Ilmu Tanah, Fakultas Pertanian, Universitas Jenderal Soedirman, Purwokerto. Penelitian menggunakan Rancangan Acak Kelompok Lengkap (RAKL) dengan dua faktor dan tiga ulangan. Faktor pertama yaitu formula nutrisi yang terdiri dari lima taraf, yaitu F0 = 7,5% N (kontrol), F1 = 6% N, F2 = 7,5% N, F3 = 9% N dan F4 = 10,5% N. Faktor kedua yaitu media tanam yang terdiri dari dua macam yaitu M1 = *cocogrow* dan M2 = *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 aplikasi formula nutrisi berpengaruh nyata terhadap sifat kimia air yaitu pH, TDS (*Total Dissolved Solids*) dan P total air. Aplikasi media tanam berpengaruh nyata terhadap TDS, DHL (Daya Hantar Listrik) air, dan biomassa tanaman. Kombinasi antara formula nutrisi dan media tanam belum mampu menunjukkan pengaruh pada semua variabel pengamatan yaitu pH, DHL, TDS, N total, P total dalam air, suhu air dan biomassa tanaman. Berdasarkan hasil penelitian diketahui bahwa aplikasi formula nutrisi dengan kandungan N 9% (F3) menghasilkan pH sebesar 7,69, DHL 1.314,71 $\mu\text{S}/\text{cm}^2$, TDS 652,26 ppm, N-total 82,92 ppm, P-total 123,32 ppm dan suhu air 30,02 °C serta biomassa 2,29 g/tanaman. Media tanam *cocogrow* + zeolit meningkatkan biomassa tanaman sebesar 1,12 g/tanaman, DHL dan TDS air yang optimal untuk tanaman selada, yaitu DHL 1.331,65 $\mu\text{S}/\text{cm}^2$ dan TDS 660,38 ppm, tidak terjadi interaksi antara pemberian formula nutrisi dan media tanam hidroponik terhadap sifat kimia air dan biomassa tanaman selada.

SUMMARY

Lettuce is one type of leaf vegetable that has a large market prospect along with an increase in population, education, income and community welfare. Lettuce is consumed raw, therefore lettuce production must be clean and free from the soil. The potential for developing clean lettuce from the soil and quality results can be done hydroponically. The availability of high-quality hydroponic nutrition is one of the most important things in hydroponic cultivation. But until now there is only one type of hydroponic nutrient that is in the community, namely AB mix, so it is necessary to do research on hydroponic nutrition in addition to AB mix. This study aims to determine the effect of (1) giving modified nutritional formula to the chemical properties of water, N and P content and lettuce plant biomass, (2) planting media on water chemistry, N and P content and lettuce plant biomass, and (3) nutritional formula and growing media on the chemical properties of water, N and P content and lettuce biomass.

This research began in March 2019 - July 2019 and was carried out in the screen house and Soil Science Laboratory, Faculty of Agriculture, Jenderal Soedirman University, Purwokerto. The study used a Complete Randomized Block Design (RCBD) with two factors and three replications. The first factor is the nutritional formula consisting of five levels, namely F0 = 7.5% N (control), F1 = 6% N, F2 = 7.5% N, F3 = 9% N and F4 = 10.5% N. The second factor is the planting media which consists of two kinds, namely M1 = cocogrow and M2 = cocogrow + zeolite, so that 10 treatment combinations are obtained and repeated 3 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 formulas clearly depicted the chemical properties of air, namely pH, TDS (Total Dissolved Solids) and total P air. Planting media applications embody the realities of air TDS, EC (Electrical Conductivity), and plant biomass. The combination of nutrition formula and planting media has not been able to show differences in all observed variables of pH, EC, TDS, total N, total P in water, water temperature and plant biomass. Based on the results of the study note that the application of nutritional formulas with an N content of 9% (F3) produces a pH of 7.69, DHL 1,314.71 $\mu\text{S}/\text{cm}^2$, TDS 652.26 ppm, N-total 82.92 ppm, P-total 123.32 ppm and water temperature of 30.02 °C and biomass of 2.29 g/plant. Cocogrow + zeolite growing media increases plant biomass by 1.12 g/plant, optimal EC and water TDS for lettuce plants, i.e. EC 1,331.65 $\mu\text{S}/\text{cm}^2$ and TDS 660.38 ppm and did not affect the interaction between the provision of nutritional formulas and hydroponic growing media on the chemical properties of water and lettuce plant biomass.