RESPON PERTUMBUHAN DAN HASIL TANAMAN SELADA MERAH (*Lactuca sativa* L.) TERHADAP KOMPOSISI MEDIA TANAM DAN KONSENTRASI KALIUM SILIKA SECARA HIDROPONIK SISTEM NFT

Oleh: Afifah Dwita Yudiarti
Dibimbing Oleh: Tuti Setyaningrum

ABSTRAK

Selada merah merupakan tanaman hortikultura bernilai ekonomi tinggi. Penelitian ini bertujuan untuk mengetahui komposisi media tanam dan konsentrasi kalium silika terbaik untuk pertumbuhan dan hasil selada merah. Penelitian menggunakan Rancangan Petak Terbagi (*Split Plot Design*) dan diacak dengan Rancangan Acak Lengkap (RAL). Petak utama adalah komposisi media tanam *Peat moss* dan *Cocopeat* (1:1), (1:2), (2:1), dan (1:3). Anak Petak adalah konsentrasi kalium silika yang terdiri atas tanpa aplikasi, 1,5 mM, 3,0 mM, dan 4,5 mM. Data dianalisis dengan sidik ragam dan diuji lanjut dengan *Duncan's Multiple Range Test* (DMRT) taraf 5%. Hasil penelitian menunjukkan terdapat interaksi antara perlakuan komposisi media tanam dan konsentrasi kalium silika pada parameter tinggi tanaman 21 HST dan jumlah daun 21 HST. Komposisi media tanam *peat moss* : *cocopeat* (1:2) memberikan hasil terbaik pada parameter tinggi tanaman 7, 14, dan 28 HST, jumlah daun 14, 28, dan 35 HST, bobot segar akar, volume akar, bobot segar tajuk, bobot biologis per petak, bobot biologis pertanaman, bobot ekonomis, dan indeks panen. Kalium silika 3,0 mM memberikan hasil terbaik pada parameter tinggi tanaman 28 dan 35 HST, jumlah daun 14, 28, dan 35 HST, panjang akar, bobot segar akar, volume akar, bobot segar tajuk, bobot biologis per petak, bobot biologis pertanaman, bobot ekonomis, dan indeks panen.

Kata Kunci: selada merah, media tanam, kalium silika.

GROWTH AND YIELD RESPONSE OF RED LETTUCE (*Lactuca sativa* L.) TO GROWING MEDIA COMPOSITION AND POTASSIUM SILICATE CONCENTRATION IN A HYDROPONIC NFT SYSTEM

By: Afifah Dwita Yudiarti
Supervised by: Tuti Setyaningrum

ABSTRACT

Red lettuce is a horticultural crop with high economic value. This research aimed to determine the optimal growing medium composition and potassium silicate concentration for the growth and yield of red lettuce. The study employed a split plot design arranged in a completely randomized design. The main plots were growing media compositions of peat moss and cocopeat in ratios 1:1, 1:2, 2:1, and 1:3. The subplots were potassium silicate concentrations of no application, 1.5 mM, 3.0 mM, and 4.5 mM. Data were analyzed using analysis of variance and further tested using Duncan's Multiple Range Test (DMRT) at the 5% significance level. The results showed an interaction between the growing medium composition and potassium silicate concentration treatments for the parameters of plant height at 21 DAP and number of leaves at 21 DAP. The peat moss and cocopeat (1:2) growing medium composition yielded the best results for plant height at 7, 14, and 28 DAP, number of leaves at 14, 28, and 35 DAP, fresh root weight, root volume, fresh shoot weight, biomass per plot, biomass per plant, economic yield, and harvest index. The 3.0 mM potassium silicate treatment yielded the best results for plant height at 28 and 35 DAP, number of leaves at 14, 28, and 35 DAP, root length, fresh root weight, root volume, fresh shoot weight, biomass per plot, biomass per plant, economic yield, and harvest index.

Keywords: red lettuce, growing media, potassium silicate.