PENGARUH SITOKININ DALAM LARUTAN NUTRISI HIDROPONIK TERHADAP PERTUMBUHAN DAN HASIL TANAMAN SELADA (*Lactuca sativa* L.)

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INTISARI

Bertambahnya penduduk meningkatkan kebutuhan sayuran, sementara lahan pertanian berkurang. Hidroponik adalah salah satu metode budidaya tanaman sayuran di lahan terbatas. Keunggulan hidroponik termasuk variasi tanaman, alat dan bahan yang mudah didapatkan, dan pengurangan penggunaan pestisida. AB Mix merupakan larutan nutrien yang sering digunakan dalam hidroponik. Penambahan sitokinin bersama dengan AB mix diharapkan dapat mempercepat pertumbuhan serta menambah hasil panen tanaman. Tujuan penelitian ini adalah mengetahui respons pertumbuhan dan hasil tanaman selada akibat penambahan sitokinin pada larutan nutrisi AB Mix. Penelitian ini dirancang dalam model Rancangan Acak Kelompok Lengkap (RAKL) dengan perlakuan empat macam konsentrasi sitokinin dengan masing-masing perlakuan terdapat tiga ulangan. Perlakuan dengan pencampuran hormon sitokinin dalam nutrisi AB Mix dengan konsentrasi P0 = 1 L larutan nutrisi (kontrol), P1 = 1 L larutan nutrisi + sitokinin 0,025 ppm, P2: 1 L larutan nutrisi + sitokinin 0,05 ppm, P3: 1 L larutan nutrisi + sitokinin 0,075, P4: 1 L larutan nutrisi + sitokinin 0,1 ppm. Parameter yang diamati adalah jumlah daun, tinggi tanaman, luas daun, bobot basah, bobot kering, kadar klorofil, dan kadar karotenoid. Hasil menunjukkan pemberian sitokinin 0,025 ppm memberi peningkatan signifikan pada tinggi tanaman (45,017±2,846 cm) dibanding kontrol (40,683±2,924 cm) atau setara dengan 10%, sementara pemberian sitokinin 0,05 dan 0,075 ppm memberi peningkatan signifikan pada luas daun, yakni 202,681 cm^2 dan 203,121 cm^2 secara berurutan dibanding kontrol (171,767±35,413 cm^2) atau setara dengan 18%. Namun, pemberian sitokinin tidak berpengaruh pada jumlah daun, kadar klorofil, karotenoid maupun bobot basah dan bobot kering tanaman.

Kata kunci: AB Mix, hidroponik sistem wick, sitokinin, selada

EFFECT OF CYTOKININ IN HYDROPONIC NUTRIENT SOLUTION ON THE GROWTH AND YIELD OF GARDEN LETTUCE (*Lactuca sativa* L.)

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ABSTRACT

As the world's population increases, the demand for vegetables is on the rise, while agricultural land is in decline. Hydroponics is one method of cultivating vegetable crops on limited land. Its advantages include crop diversity, easily available tools and materials and reduced pesticide use. AB Mix is a nutrient solution commonly used in hydroponics. The addition of cytokinin to AB Mix is expected to accelerate plant growth and increase yields. The objective of this study was to determine the response of lettuce plant growth and yield to the addition of cytokinin in a hydroponic nutrient solution. The study was designed as a complete randomised group design (RCGD) with the treatment of four kinds of cytokinin concentrations with each treatment having three replications. Treatment with cytokinin hormone mixture in AB Mix nutrient with concentration P0 = 1 L nutrient solution (control), P1 = 1 L nutrient solution + cytokinin 0.025 ppm, P2: 1 L nutrient solution + cytokinin 0.05 ppm, P3: 1 L nutrient solution + cytokinin 0.075, P4: 1 L nutrient solution + cytokinin 0.1 ppm. Parameters observed were number of leaves, plant height, leaf area, plant fresh and dry weight, chlorophyll and carotenoids. The results showed that 0.025 ppm cytokinin gave a significant increase in plant height (45.017±2.846 cm) compared to the control (40.683±2.924 cm) or equivalent to 10% increase, while 0.05 and 0.075 ppm cytokinin gave a significant increase in leaf area, namely 202.681 cm^2 and 203.121 cm^2 respectively compared to the control (171.767±35.413 cm^2) or equivalent to 18% increase. However, cytokinin did not affect the number of leaves, chlorophyll content, carotenoids or wet and dry weights of the plants.

Key words: AB Mix, hydrophonic wick system, cytokinin, lettuce