

RINGKASAN

Peningkatan produksi melon dapat diupayakan dengan budidaya hidroponik sistem irigasi tetes. Sehubungan dengan budidaya hidroponik yang tepat, pemenuhan unsur hara untuk meningkatkan pertumbuhan dan kualitas buah melon dapat dilakukan pemupukan KNO_3 . Pupuk KNO_3 dapat diserap dengan baik oleh tanaman melon jika diberikan dalam konsentrasi yang tepat, cara pengaplikasian yang tepat, dan dengan frekuensi yang tepat sehingga mampu memberikan pengaruh pada pertumbuhan dan kualitas buah melon. Penelitian bertujuan untuk mengetahui pengaruh konsentrasi dan cara aplikasi pupuk KNO_3 serta interaksi terhadap pertumbuhan dan hasil melon sistem hidroponik irigasi tetes.

Penelitian dilaksanakan di *screen house* yang terletak di Desa Pasir Kulon, Kecamatan Karanglewas, Kabupaten Banyumas dan Laboratorium Agronomi dan Hortikultura, Fakultas Pertanian, Universitas Jenderal Soedirman. Penelitian menggunakan Rancangan Acak Kelompok Lengkap (RAKL) faktorial terdiri atas 2 faktor, yaitu konsentrasi dan cara aplikasi pupuk KNO_3 . Variabel yang diamati meliputi tinggi tanaman, luas daun per tanaman, kehijauan daun, diameter batang, jumlah cabang per tanaman, jumlah bunga jadi per tanaman, umur berbunga, umur panen, bobot segar tajuk tanaman, bobot kering tajuk tanaman, bobot buah segar per tanaman, indeks panen, hasil per luas lahan, warna daging buah, diameter buah, dan tingkat kemanisan buah. Data hasil penelitian dianalisis menggunakan uji F dan dilanjutkan dengan DMRT (*Duncan Multiple Range Test*) pada taraf kesalahan 5%.

Hasil penelitian menunjukkan bahwa konsentrasi pupuk KNO_3 6 g/L dapat mempercepat umur berbunga dan meningkatkan bobot segar tajuk tanaman, bobot kering tajuk tanaman, bobot buah segar per tanaman, indeks panen, hasil per luas lahan, diameter buah, serta tingkat kemanisan buah. Cara aplikasi pupuk KNO_3 dikocor dapat meningkatkan bobot segar tajuk tanaman, bobot kering tajuk tanaman, diameter buah, dan tingkat kemanisan buah, sedangkan cara aplikasi pupuk KNO_3 disemprot dapat meningkatkan indeks panen. Pemberian pupuk KNO_3 konsentrasi 6 g/L dan cara aplikasi kocor merupakan interaksi terbaik untuk meningkatkan diameter buah dan tingkat kemanisan buah.

SUMMARY

Increasing melon production can be achieved through hydroponic cultivation using a drip irrigation system, where applying potassium nitrate (KNO_3) fertilizer enhances growth and quality. In connection with proper hydroponic cultivation, the fulfillment of nutrients to increase the growth and quality of melons can be fertilized with KNO_3 . KNO_3 fertilizer can be absorbed well by melon plants if it is given in the right concentration, the right way of application, and with the right frequency so that it can influence on the growth and quality of melons. This research aimed to investigate the effects of concentrations and methods of KNO_3 application on the growth and yield of melons within a hydroponic system.

The research was conducted in a screen house in Pasir Kulon Village, Karanglewas District, Banyumas Regency, and at the Laboratory of Agronomy and Horticulture at Jenderal Soedirman University. A Randomized Complete Block Design (RCBD) was utilized, incorporating two factors: the concentration of KNO_3 and the application method. The variables observed included plant height, leaf area per plant, leaf greenness, stem diameter, number of branches per plant, number of finished flowers per plant, flowering age, harvest age, fresh weight of plant, dry weight of plant, weight fruit plant, harvest index, yield per land area, fruit color, fruit diameter, and fruit sweetness. The research data were analyzed using an F-test, followed by Duncan's Multiple Range Test (DMRT) at a 5% significance level.

Results indicated that a KNO_3 concentration of 6 g/L significantly improved various parameters, including flowering time, fresh weight of plant, dry weight of plant, fruit weight per plant, harvest index, yield per land area, fruit diameter, and fruit sweetness. The application method also played a role; pouring KNO_3 increased the fresh weight of plant, dry weight of plant, fruit diameter, and fruit sweetness, while spraying KNO_3 enhanced the harvest index. The combination of KNO_3 fertilizer at a concentration of 6 g/L, used with the pouring method, was the most effective for increasing both fruit diameter and fruit sweetness.