

RINGKASAN

Produksi melon di Indonesia mengalami penurunan dalam tiga tahun terakhir mencapai 115.176 ton pada tahun 2021-2023. Hal ini disebabkan oleh penurunan produktivitas akibat teknik budidaya yang belum optimal. Pemberian KNO_3 dengan konsentrasi dan interval yang tepat serta budidaya hidroponik *dutch bucket* dapat menjadi solusi untuk meningkatkan pertumbuhan dan hasil melon. Tujuan dilakukannya penelitian ini adalah untuk menentukan konsentrasi KNO_3 , interval penyemprotan, dan interaksi terbaik terhadap pertumbuhan dan hasil melon pada hidroponik *dutch bucket*.

Penelitian ini dilaksanakan di *screenhouse* Desa Pasir Kulon, Karanglewas, Banyumas. Penelitian dimulai pada bulan Mei 2025 hingga Agustus 2025. Penelitian ini menggunakan metode Rancangan Acak Kelompok (RAK) faktorial yang terdiri dari 2 faktor yaitu konsentrasi KNO_3 dan interval penyemprotan. Konsentrasi yang diujikan meliputi K0= kontrol, K1= 3,75 g/L, dan K2= 7,5 g/L. Interval penyemprotan yang diujikan meliputi I1= 4 hari sekali, I2= 8 hari sekali, dan I3=12 hari sekali. Analisis data pada penelitian ini dilakukan dengan menggunakan ANOVA pada taraf kesalahan 5%. Apabila hasilnya berbeda nyata ($F_{\text{hitung}} > F_{\text{tabel}}$), maka analisis dilanjutkan dengan uji lanjut DMRT pada taraf α 5%.

Berdasarkan penelitian yang telah dilakukan, hasil uji ragam menunjukkan konsentrasi KNO_3 memberikan pengaruh sangat nyata pada variabel bobot buah, diameter buah, tebal daging buah, total padatan terlarut, bobot segar tajuk, bobot kering tajuk, bobot segar akar, bobot kering akar, dan bobot kering buah. Interval penyemprotan memberikan pengaruh nyata pada variabel jumlah daun umur 28 HST, dan memberikan pengaruh sangat nyata pada variabel bobot buah, diameter buah, tebal daging buah, bobot kering akar. Konsentrasi KNO_3 7,5 g/L dengan interval penyemprotan setiap 12 hari sekali merupakan interaksi terbaik antara perlakuan konsentrasi pupuk KNO_3 dengan interval aplikasi terhadap bobot segar tajuk, bobot kering tajuk, bobot kering akar, bobot segar total tanaman, bobot kering total tanaman, bobot buah, dan bobot kering buah.

SUMMARY

Melon production in Indonesia has declined over the past three years, reaching 115,176 tons in 2021-2023. This is due to decreased productivity resulting from suboptimal cultivation techniques. The administration of KNO_3 at the right concentration and intervals, combined with the Dutch bucket hydroponic cultivation system, can be a solution to increase melon growth and yield. The aim of this study was to determine the optimal concentration of KNO_3 , spraying intervals, and their best interaction on melon growth and yield in Dutch bucket hydroponic.

This research was conducted in a screenhouse in Pasir Kulon Village, Karanglewas, Banyumas. The study began in May 2025 and concluded in August 2025. This study employed a factorial Randomized Block Design (RBD) method, consisting of two factors: KNO_3 concentration and spraying interval. The concentrations tested included K_0 = control, K_1 = 3.75 g/L, and K_2 = 7.5 g/L. The spraying intervals tested included I_1 = once every 4 days, I_2 = once every 8 days, and I_3 = once every 12 days. Data analysis in this study was conducted using ANOVA at a 5% error level. If the results were significantly different ($F_{\text{count}} > F_{\text{table}}$), the analysis was continued with a DMRT further test at a 5% α level.

Based on the research that has been conducted, the results of the variance test show that KNO_3 concentration had a very significant effect on the variables of fruit weight, fruit diameter, fruit flesh thickness, total dissolved solids, shoot fresh weight, shoot dry weight, root fresh weight, root dry weight, and fruit dry weight. The spraying interval had a significant effect on the variable of the number of leaves at 28 days after planting, and a very significant effect on the variables of fruit weight, fruit diameter, fruit flesh thickness, and root dry weight. The best interaction between the KNO_3 fertilizer concentration treatments and application intervals was KNO_3 at 7.5 g/L with a spraying interval of once every 12 days for shoot fresh weight, shoot dry weight, root dry weight, total fresh weight of plants, total dry weight of plants, fruit weight, and fruit dry weight.