RINGKASAN

Penelitian ini dilaksanakan di Lahan Percobaan Fakultas Pertanian Universitas Islam Sumatera Utara, Jln. Karya Wisata, Gedung Johor Kecamatan Medan Johor Kota Madya Medan, Provinsi Sumatera Utara dengan ketinggian Tempat ±25 meter dpl, dengan topografi datar. Penelitian ini dimulai bulan Desember sampai selesai.

Penelitian ini dibimbing oleh Ibu Ir. Chairani Siregar, M.P. selaku Ketua Komisi Pembimbin dan Ibu Mindalisma, M.M. selaku Anggota Komisi Pembimbing. Penelitian ini bertujuan untuk mengetahui pengaruh pemberian pupuk kalsium nitrat plus boron terhadap pertumbuhan dan hasil tanaman cabai (*Capsicum annum* L.). Untuk mengetahui pengaruh pemberian pupuk subur kali butir terhadap pertumbuhan dan hasil tanaman cabai (*Capsicum annum* L.). Untuk mengetahui pengaruh interaksi pemberian subur kali butir dan pupuk kalsium nitrat plus boron terhadap pertumbuhan dan hasil tanaman cabai (*Capsicum annum* L.). Penelitian ini menggunakan Rancangan Acak Kelompok (RAK) faktorial yang terdiri dari dua faktor. Faktor pertama yaitu pupuk karate plus boroni dengan dosis anjuran 1000 Kg/Ha pada 4 Taraf Perlakuan yaitu : K_0 = 0 g/polybag; K_1 = 5 g/polybag; K_2 = 10 g/polybag; K_3 = 15 g/polybag. Faktor kedua yaitu pupuk subur kali butir dengan dosis anjuran 150, 300, 450 Kg/Ha pada 4 Taraf Perlakuan yaitu: S_0 = 0 gr/polybag; S_1 = 0,75 g/polybag; S_2 = 1,75 g/polybag; S_3 = 2,25 g/polybag. Parameter pengamatan meliputi tinggi tanaman, diameter batang, umur berbunga, jumlah buah per polybag, berat produksi per polybag, K Total pada tanah inceptisol.

Berdasarkan hasil analisis menunjukkan bahwa pemberian pupuk karate plus boroni berpengaruh nyata terhadap tinggi tanaman, diameter batang, umur berbunga, jumlah buah dan bobot buah. Secara umum perlakuan K3 (15 g/polybag) memberikan hasil yang terbaik untuk bobot buah tanaman cabe merah. Pemberian pupuk subur kali berpengaruh nyata terhadap tinggi tanaman, diameter batang, jumlah buah, bobot buah, dan K total tanah. Secara umum perlakuan S3 (2,25 g/polybag) memberikan hasil yang terbaik untuk bobot buah tanaman cabe merah. Interaksi antara pemberian pupuk karate plus boroni dan pupuk subur kali berpengaruh nyata terhadap umur berbunga, jumlah buah, dan bobot buah. Secara umum kombinasi perlakuan K_2S_3(10g pupuk karate plus boroni /polibag dan 2,25 g subur kali /polibag) memberikan hasil yang terbaik terhadap bobot buah.

Kata Kunci : Cabai Merah, Pupuk Karate Plus Boroni, Pupuk Subur Kali Butir, Tanah Ultisol, Polybag.

SUMMARY

This research was conducted at the Experimental Field of the Faculty of Agriculture, Islamic University of North Sumatra, located on Karya Wisata Street, Gedung Johor, Medan Johor District, Medan Municipality, North Sumatra Province, at an altitude of approximately 25 meters above sea level, with flat topography. The research began in December and continued until completion

This research was supervised by Ir. Chairani Siregar, M.P. as the Head of the Supervisory Committee, and Mindalisma, M.M. as a Member of the Supervisory Committee. The objective of this research was to determine the effect of calcium nitrate plus boron fertilizer on the growth and yield of chili plants (Capsicum annuum L.). It also aimed to examine the effect of granular Subur Kali fertilizer on the growth and yield of chili plants (Capsicum annuum L.), as well as the interaction effect between granular Subur Kali fertilizer and calcium nitrate plus boron on the growth and yield of chili plants (Capsicum annuum L.). The research employed a factorial Randomized Complete Block Design (RCBD) consisting of two factors. The first factor was calcium nitrate plus boron fertilizer with a recommended dosage of 1000 kg/ha, applied at four treatment levels: K_0 = 0 g/polybag; K_1 = 5 g/polybag; K_2 = 10 g/polybag; K_3 = 15 g/polybag. The second factor was granular Subur Kali fertilizer with recommended dosages of 150, 300, and 450 kg/ha, applied at four treatment levels: S0 = 0 g/polybag; S_1 = 0.75 g/polybag; S_2 = 1.75 g/polybag; S_3 = 2.25 g/polybag. The observed parameters included plant height, stem diameter, flowering age, number of fruits per polybag, production weight per polybag, and total potassium (K) content in inceptisol soil.

Based on the analysis results, the application of Karate Plus Boroni fertilizer had a significant effect on plant height, stem diameter, flowering age, number of fruits, and fruit weight. In general, the K_3 treatment (15 g/polybag) produced the best results for the fruit weight of red chili plants. The application of Subur Kali fertilizer had a significant effect on plant height, stem diameter, number of fruits, fruit weight, and total potassium (K) in the soil. Overall, the S_3 treatment (2.25 g/polybag) gave the best results for the fruit weight of red chili plants. The interaction between Karate Plus Boroni and Subur Kali fertilizers showed a significant effect on flowering age, number of fruits, and fruit weight. In general, the combination treatment K_2S_3 (10 g Karate Plus Boroni fertilizer/polybag and 2.25 g Subur Kali fertilizer/polybag) resulted in the best fruit weight outcome.

Keywords: *Red Chili, Karate Plus Boroni Fertilizer, Granular Subur Kali Fertilizer, Ultisol Soil, Polybag.*