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 telah dilaksanakan di bulan Februari sampai Mei 2025.

Penelitian ini dibimbing oleh Ibu Ir. Chairani Siregar, M.P. selaku Ketua Komisi Pembimbing dan Ibu Ir. Rahmawati, M.P. selaku Anggota Komisi Pembimbing. Penelitian ini bertujuan untuk mengetahui pengaruh pupuk subur kali butir terhadap tanaman kacang tanah (*A. hypogaea* L.) pada tanah inceptisol. Untuk mengetahui pengaruh pupuk karate plus boroni terhadap tanaman kacang tanah (*A. hypogaea* L.) pada tanah inceptisol. Untuk mengetahui interaksi dari pupuk subur kali butir dan pupuk karate plus boroni terhadap tanaman kacang tanah (*A. hypogaea* L.) pada tanah inceptisol. Penelitian menggunakan Rancangan Acak Kelompok (RAK) faktorial yang terdiri dari dua faktor. Faktor pertama yaitu pupuk subur kali butir dengan 4 taraf perlakuan yakni: S_0 = 0 Kg/Ha (tanpa perlakuan); S_1 = 150 Kg/Ha (22,5 g/plot); S_2 300 Kg/Ha (45 g/plot); S_3 = 450 Kg/Ha (67,5 g/plot). Faktor kedua yaitu pupuk karate plus boroni dengan 4 taraf perlakuan yaitu: K_0 = 0 g/plot (tanpa perlakuan); K_1 = 50 Kg/Ha (7,5 g/plot); K_2 = 100 Kg/Ha (15 g/plot); K_3 = 150 Kg/Ha (22,5 g/plot). Parameter pengamatan terdiri dari tinggi tanaman, bobot polong per sampel, bobot polong per plot, bobot biji per sampel, bobot biji per plot, dan Ketersedian K Tanah Inceptisol.

Berdasarkan hasil penelitian pengaruh pupuk subur kali butir dan pupuk karate plus boroni terhadap pertumbuhan dan produksi tanaman kacang tanah (*Arachis hypogaea* L.), dapat disimpulkan bahwa: perlakuan pupuk subur kali butir berpengaruh nyata terhadap semua variabel yang diamati, meliputi pertumbuhan tinggi tanaman dan produksi yang terdiri dari bobot polong per sampel, bobot polong per plot, bobot biji per sampel, dan bobot biji per plot.. Dosis pupuk subur kali butir 67,5 g/plot (S_3) memberikan hasil terbaik. Perlakuan pupuk karate plus boroni berpengaruh nyata terhadap pertumbuhan tinggi tanaman dan produksi yang meliputi bobot polong per sampel, bobot polong per plot, bobot biji per sampel, dan bobot biji per plot. Dosis pupuk karate plus boroni 22,5 g/plot (K_3) memberikan hasil terbaik. Interaksi antara pupuk subur kali butir dan pupuk karate plus boroni tidak berpengaruh nyata terhadap semua variabel yang diamati. Meskipun demikian, kombinasi perlakuan pupuk subur kali butir 67,5 g/plot dan pupuk karate plus boroni 22,5 g/plot (S_3K_3) menunjukkan kecenderungan memberikan hasil terbaik.

Kata Kunci : Kacang Tanah, Pertumbuhan dan Produksi, Pupuk Subur Kali Butir, Karate Plus Boroni Inceptisol.

SUMMARY

This research was conducted at the Experimental Farm of the Faculty of Agriculture, Islamic University of North Sumatra, located on Jln. Karya Wisata, Johor Building, Medan Johor District, Medan City, North Sumatra Province, at an altitude of approximately 25 meters above sea level, with flat topography. The study was carried out from February to May 2025.

This research was supervised by Mrs. Ir. Chairani Siregar, M.P., as the Chairperson of the Supervisory Committee, and Mrs. Rahmawati, M.P., as a member of the Supervisory Committee. The study aims to determine the effect of Subur Kali Butir fertilizer on peanut plants (Arachis hypogaea L.) grown on Inceptisol soil; to investigate the effect of Karate Plus Boroni fertilizer on peanut plants (Arachis hypogaea L.) on Inceptisol soil; and to examine the interaction between Subur Kali Butir and Karate Plus Boroni fertilizers on peanut plants (Arachis hypogaea L.) grown on Inceptisol soil. The experiment used a factorial Randomized Complete Block Design (RCBD) consisting of two factors. The first factor was Subur Kali Butir fertilizer with four treatment levels: S_0 = 0 Kg/Ha (control, no treatment); S_1 = 150 Kg/Ha (22.5 g/plot); S_2 = 300 Kg/Ha (45 g/plot); S_3 = 450 Kg/Ha (67.5 g/plot). The second factor was Karate Plus Boroni fertilizer with four treatment levels: K_0 = 0 g/plot (control, no treatment); K_1 = 50 Kg/Ha (7.5 g/plot); K_2 = 100 Kg/Ha (15 g/plot); K_3 = 150 Kg/Ha (22.5 g/plot)/. The observed parameters included plant height, pod weight per sample, pod weight per plot, seed weight per sample, seed weight per plot, and potassium (K) availability in Inceptisol soil.

Based on the results of the study on the effects of Subur Kali Butir fertilizer and Karate Plus Boroni fertilizer on the growth and yield of peanut plants (Arachis hypogaea L.), it can be concluded that: the application of Subur Kali Butir fertilizer had a significant effect on all observed variables, including plant height growth and yield components such as pod weight per sample, pod weight per plot, seed weight per sample, and seed weight per plot. The best results were obtained with the application of Subur Kali Butir fertilizer at a dose of 67.5 g/plot (S_3). The application of Karate Plus Boroni fertilizer also had a significant effect on plant height growth and yield, including pod weight per sample, pod weight per plot, seed weight per sample, and seed weight per plot. The best results were achieved with a dose of 22.5 g/plot (K_3) of Karate Plus Boroni fertilizer. The interaction between Subur Kali Butir fertilizer and Karate Plus Boroni fertilizer did not have a significant effect on any of the observed variables. However, the combination of Subur Kali Butir fertilizer at 67.5 g/plot and Karate Plus Boroni fertilizer at 22.5 g/plot (S_3K_3) tended to produce the best results.

Keywords : Peanuts, Growth and Yield, Subur Kali Butir Fertilizer, Karate Plus Boroni, Inceptisol.