RINGKASAN

Penelitian ini dilaksanakan di lahan Percobaan Fakultas Pertanian Universitas Islam Sumatera Utara, Jln. Karya Wisata, Kecamatan Medan Johor, Kota Medan, Provinsi Sumatera Utara Ketinggian tempat ±25 mdpl, dengan Topografi datar dengan jenis tanah ordo inceptisol. Penelitian ini dimulai pada Bulan Januari 2023 sampai dengan April 2023.

Penelitian ini dibimbing oleh Bapak Ir. Indra Gunawan, M.P. sebagai ketua pembimbing dan Ibu Rahmi Dwi Handayani Rambe,S.P.,M.P. selaku Anggota Komisi Pembimbing. Penelitian ini bertujuan untuk mengetahui respon pemberian pupuk organik cair (POC) limbah sayuran terhadap pertumbuhan dan peningkatan produksi tanaman kedelai. untuk mengetahui pengaruh pemberian pupuk organik cair eco farming terhadap pertumbuhan dan peningkatan produksi tanaman kedelai. untuk mengetahui interaksi pemberian pupuk organik cair limbah sayuran dan pupuk organik cair terhadap pertumbuhan dan peningkatan produksi tanaman kedelai. Penelitian ini menggunakan Rancangan Acak Kelompok (RAK) Faktorial yang terdiri dari 2 faktor perlakuan yaitu : pupuk organik cair limbah sayuran dan pupuk organik cair eco farming. Faktor pertama pemberian pupuk organik cair limbah sayuran yang terdiri dari 4 taraf, (P), yaitu : P_0 = Kontrol, P_1 = 50 ml/liter/plot, P_2 = 100 ml/liter/plot, P_3 = 150 ml/liter/plot. Faktor kedua pemberian pupuk organik cair eco farming yang terdiri dari 4 taraf, yaitu : E_0 = Kontrol (tanpa perlakuan), E_1 = 1 ml/l air/plot, E_2 = 2 ml/l air/plot, E_3 = 3 ml/l air/plot. Parameter yang diamati adalah tinggi tanaman (cm), jumlah cabang, jumlah polong per tanaman (sampel), bobot polong per tanaman per plot, bobot 100 biji polong (g).

Hasil penelitian menunjukkan bahwa pemberian pupuk organik cair (POC) limbah sayuran berpengaruh nyata dan mampu meningkatkan pertumbuhan dan produksi tanaman kacang kedelai pada parameter pengataman tinggi tanaman, bobot polong perlot, dan bobot 100 biji, tetapi tidak berpengaruh nyata terhadap perameter pengamatan jumlah cabang dan bobot polong pertanaman sampel. Pupuk organik cair Eco Farming berpengaruh nyata dan mampu meningkatkan pertumbuhan dan produksi tanaman kacang kedelai pada parameter tinggi tanaman, bobot polong perplot dan bobot 100 biji, tetapi tidak berpengaruh nyata terhadap parameter pengamatan jumlah cabang dan bobot polong pertanaman sampel. Interaksi antara Pupuk Organik Cair (POC) limbah sayuran dan pupuk organik cair Eco Farming berpengaruh nyata terhadap produksi tanaman kacang kedelai pada parameter pengamatan bobot polong perplot dan bobot 100 biji, tetapi tidak berpengaruh nyata terhadap parameter pengamatan tinggi tanaman, jumlah cabang dan bobot polong pertanaman sampel.

Kata Kunci : *Tanaman Kedelai, Pupuk Organi Cair Limbah Sayuran, Eco Farming.*

SUMMARY

This research was conducted at the Experimental Field of the Faculty of Agriculture, Islamic University of North Sumatra, Jln. Field Trip, Medan Johor District, Medan City, North Sumatra Province Altitude ± 25 meters above sea level, with flat topography with soil types of the Inceptisol order. This research starts in January 2023 until April 2023.

This research was supervised by Mr. Ir. Indra Gunawan, M.P. as the head advisor and Mrs. Rahmi Dwi Handayani Rambe, S.P., M.P. as a member of the Advisory Commission. This study aims to determine the response of liquid organic fertilizer (POC) of vegetable waste to the growth and increase in soybean production. to determine the effect of eco farming liquid organic fertilizer on the growth and increase in soybean production. to determine the interaction of liquid organic fertilizer from vegetable waste and liquid organic fertilizer to the growth and increase in soybean crop production. This study used a factorial randomized block design (RBD) consisting of 2 treatment factors, namely: liquid organic fertilizer for vegetable waste and liquid organic fertilizer for eco farming. The first factor was giving liquid organic fertilizer to vegetable waste which consisted of 4 levels, (P), namely: P_0 = Control, P_1 = 50 ml/liter/plot, P_2 = 100 ml/liter/plot, P_3 = 150 ml/liter/plot . The second factor is giving eco farming liquid organic fertilizer which consists of 4 levels, namely: E_0 = Control (without treatment), E_1 = 1 ml/l water/plot, E_2 = 2 ml/l water/plot, E_3 = 3 ml/l water/plots. Parameters observed were plant height (cm), number of branches, number of pods per plant (sample), pod weight per plant per plot, weight of 100 seed pods (g).

The results showed that the application of liquid organic fertilizer (POC) to vegetable waste had a significant effect and was able to increase the growth and production of soybean plants on the parameters of plant height, perlot pod weight, and 100 seed weight, but had no significant effect on the parameters of observation of the number of branches and weight. sample planting pods. Eco Farming liquid organic fertilizer had a significant effect and was able to increase the growth and production of soybean plants on the parameters of plant height, pod weight per plot and weight of 100 seeds, but had no significant effect on the observed parameters of the number of branches and pod weight of the sample plants. The interaction between Liquid Organic Fertilizer (POC) of vegetable waste and Eco Farming liquid organic fertilizer had a significant effect on the production of soybean plants on the parameters of observation of pod weight per plot and the weight of 100 seeds, but had no significant effect on the parameters of observation of plant height, number of branches and plant pod weight sample.

Keywords **:** *Soybean Plants, Organic Fertilizer Liquid Vegetable Waste, Eco Farming.*