

## RINGKASAN

Penelitian ini dilakukan di Kebun percobaan Fakultas Pertanian UISU, Kelurahan Gedung Johor, Kecamatan Medan Johor, Kota Madya Medan, Provinsi Sumatera Utara dengan ketinggian  $\pm 25$  m dpl dengan topografi datar. Penelitian ini di bimbing oleh Ibu Ir.Mindalisma.MM sebagai ketua dan Ibu Ir.Chairani Siregar.MP sebagai anggota. Penelitian ini bertujuan untuk mempelajari pengaruh pemberian pupuk organik cair limbah buah pepaya dan pupuk vermikompos terhadap pertumbuhan dan produksi tanaman kedelai (*Glycine max L*) pada tanah Inceptisol.

Penelitian ini menggunakan Rancangan Acak Kelompok (RAK) Faktorial dengan dua faktor yang diteliti yaitu : 1. Faktor pertama adalah Pupuk Organik Limbah Buah Pepaya terdiri dari 4 taraf perlakuan, yaitu :  $P_0 = 0$  Kontrol,  $P_1 = 50$  ml/plot,  $P_2 = 100$  ml/plot,  $P_3 = 150$  ml/plot. 2. Faktor kedua adalah pupuk Vermikompos (V) yang terdiri dari 4 taraf perlakuan, yaitu :  $V_0 = 0$  g kontrol,  $V_1 = 0,72$  kg/plot,  $V_2 = 1,44$  kg/plot,  $V_3 = 2,16$  kg/plot). Parameter yang diamati adalah Tinggi tanaman, Jumlah cabang produktif, Umur berbunga, Jumlah polong pertanaman (Sample), Jumlah polong per plot, Bobot polong per plot, Jumlah biji kering per plot, Bobot biji kering per plot, Bobot 100 biji polong (g) dan Analisis kandungan C organik tanah.

Hasil penelitian menunjukkan bahwa pemberian Pupuk Limbah Buah Pepaya berpengaruh nyata terhadap tinggi tanaman, Jumlah cabang, Umur berbunga, Jumlah polong pertanaman, Jumlah polong per plot, Bobot polong per plot, Jumlah biji kering per plot, Bobot 100 biji polong, Analisis Kandungan C organik tanah . Pada perlakuan Pupuk Vermikompos berpengaruh nyata terhadap Tinggi tanaman, Jumlah cabang, Umur berbunga, Jumlah Polong pertanaman, Jumlah polong per plot, Bobot biji kering per plot, Bobot biji kering per plot, Bobot 100 biji polong dan Kandungan C organik tanah. Sedangkan interaksi POC limbah buah pepaya dan Pupuk Vermikompos berpengaruh nyata terhadap tinggi tanaman, umur berbunga, jumlah polong pertanaman, bobot polong per plot, bobot biji kering per plot, bobot 100 butir, Namun interaksi POC limbah buah pepaya dan Pupuk Vermikompos tidak berpengaruh nyata terhadap kandungan C organik tanah.

**Kata Kunci : POC limbah buah pepaya, Pupuk Vermikompos, Inceptisol**

## SUMMARY

This research was conducted in the experimental garden of the Faculty of Agriculture UISU, Johor Building Village, Medan Johor District, Medan City, North Sumatra Province with an altitude of  $\pm 25$  m above sea level with flat topography. This research was guided by Mrs. Ir.Mindalisma.MM as chairman and Mrs. Ir.Chairani Siregar.MP as a member. This study aims to study the effect of applying liquid organic fertilizer papaya fruit waste and vermicompost fertilizer on the growth and production of soybean plants (*Glycine max* L) on Inceptisol soil.

This study used a Factorial Group Randomized Design (GRD) with two factors studied, namely: 1. The first factor is Papaya Fruit Waste Organic Fertilizer consisting of 4 levels of treatment, namely :  $P_0 = 0$  Control,  $P_1 = 50$  ml / plot,  $P_2 = 100$  ml/plot,  $P_3 = 150$  ml/plot. 2. The second factor is Vermicompost fertilizer (V) which consists of 4 treatment levels, namely:  $V_0 = 0$  g control,  $V_1 = 0.72$  kg/plot,  $V_2 = 1.44$  kg/plot,  $V_3 = 2.16$  kg/plot). The parameters observed were Plantheight, Number of productive branches, Age of flowering, Number of pods per plant (Sample), Number of pods per plot, Weight of pods per plot, Number of dry seeds per plot, Weight of dry seeds per plot, Weight of 100 seeds pods (g) and Analysis of soil organic C content.

The results showed that the application of Papaya Fruit Waste Fertilizer had a significant effect on plant height, Number of branches, Flowering age, Number of pods per plant, Number of pods per plot, Weight of pods per plot, Number of dry seeds per plot, Weight of 100 seed pods, Analysis of soil organic C content. In the treatment of Vermicompost fertilizer has a significant effect on plant height, number of branches, flowering age, number of pods per plant, number of pods per plot, dry seed weight per plot, dry seed weight per plot, weight of 100 pods and soil organic C content. While the interaction has a real effect on plant height, flowering age, number of pods per plant, pod weight per plot, dry seed weight per plot, weight of 100 grains, but the interaction of POC papaya fruit waste and Vermicompost Fertilizer has no real effect on soil organic C content.

***Keywords: POC papaya fruit waste, Vermicompost Fertilizer, Inceptisol***