

## RINGKASAN

Tanaman kedelai (*Glycine max*) merupakan komoditas pangan utama ketiga setelah padi dan jagung dan merupakan salah satu tanaman polong-polongan yang digunakan sebagai sumber utama protein dan minyak nabati di dunia. Penelitian ini dilaksanakan di lahan Percobaan Fakultas Pertanian Universitas Islam Sumatra Utara, Jl. Karya Wisata, Gedung Johor, Kecamatan Medan Johor, Kota Medan, ketinggian tempat  $\pm 25$  meter di atas permukaan laut. penelitian ini dimulai Bulan Februari sampai Bulan Mei 2024.

Penelitian ini dibimbing oleh Ibu Rahmi Dwi Handayani Rambe, S.P., M.P. sebagai Ketua Komisi Pembimbing dan Bapak Ir. Indra Gunawan, M.P. selaku Anggota Komisi Pembimbing. Penelitian ini bertujuan untuk mengetahui pengaruh Pupuk Organik Cair Limbah Ikan dan Trichokompos terhadap pertumbuhan dan produksi tanaman kedelai Varietas Edamame. Penelitian ini menggunakan Rancangan Acak kelompok (RAK) faktorial, yaitu: Faktor pertama Pupuk Organik Cair Limbah Ikan yang terdiri atas 4 taraf, yakni:  $L_0$  = Tanpa Pupuk Organik Cair Limbah Ikan (Kontrol),  $L_1$  = Pupuk Organik Cair Limbah Ikan 100 ml/polybag,  $L_2$  = Pupuk Organik Cair Limbah Ikan 200 ml/polybag,  $L_3$  = Pupuk Organik Cair Limbah Ikan 300 ml/polybag. Faktor kedua yaitu Pupuk Trichokompos yang terdiri atas 4 taraf, yakni:  $T_0$  = Tanpa Pupuk Trichokompos (Kontrol),  $T_1$  = Pupuk Trichokompos 12,5 ton/ha (62,5 g/polybag),  $T_2$  = Pupuk Trichokompos 25 ton/ha (125 g/polybag),  $T_3$  = Pupuk Trichokompos 37,5 ton/ha (187,5 g/polybag). Parameter yang diamati adalah tinggi tanaman (cm), jumlah cabang (cabang), diameter batang (cm), jumlah polong per tanaman (polong), bobot produksi tanaman (g).

Hasil penelitian menunjukkan bahwa perlakuan Pupuk Organik Cair Limbah Ikan berpengaruh terhadap pertumbuhan tinggi tanaman, jumlah daun, diameter batang, jumlah polong per tanaman dan bobot produksi. Perlakuan terbaik terdapat pada  $L_3$  (Pupuk Organik Cair Limbah Ikan 300 ml/polybag). Trichokompos berpengaruh terhadap pertumbuhan tinggi tanaman dan produksi jumlah polong per tanaman. Tetapi tidak berpengaruh terhadap jumlah cabang, diameter batang dan bobot produksi. Perlakuan terbaik terdapat pada  $T_3$  (Trichokompos 187,5 g/polybag). Interaksi dari perlakuan Pupuk Organik Cair Limbah Ikan dan Trichokompos tidak berpengaruh terhadap semua parameter yang diamati. Perlakuan terbaik terdapat interaksi perlakuan  $L_3T_3$  (Pupuk Organik Cair Limbah Ikan 300 ml/polybag dengan pupuk Trichokompos 187,5 g/polybag).

**Kata Kunci :** Tanaman Kedelai, Pupuk Organi Cair Limbah Ikan, Pupuk Trichokompos, Pertumbuhan dan Produksi.

## SUMMARY

*Soybean (Glycine max) is the third major food commodity after rice and corn and is one of the leguminous plants used as the main source of protein and vegetable oil in the world. This research was conducted in the Experimental Land of the Faculty of Agriculture, North Sumatra Islamic University, Jl. Karya Wisata, Johor Building, Medan Johor District, Medan City, at an altitude of approximately 25 meters above sea level. This research started from February to May 2024.*

*This research was supervised by Mrs. Rahmi Dwi Handayani Rambe, S.P., M.P. as the Chair of the Supervisory Committee and Mr. Ir. Indra Gunawan, M.P. as a Member of the Supervisory Committee. The aim of this research was to determine the effect of Liquid Organic Fertilizer from Fish Waste and Trichocompost on the growth and production of Edamame soybean variety. This research used a factorial Randomized Complete Block Design (RCBD), namely: The first factor was Liquid Organic Fertilizer from Fish Waste consisting of 4 levels, namely:  $L_0$  = Without Liquid Organic Fertilizer from Fish Waste (Control),  $L_1$  = Liquid Organic Fertilizer from Fish Waste 100 ml/polybag,  $L_2$  = Liquid Organic Fertilizer from Fish Waste 200 ml/polybag,  $L_3$  = Liquid Organic Fertilizer from Fish Waste 300 ml/polybag. The second factor was Trichocompost consisting of 4 levels, namely:  $T_0$  = Without Trichocompost (Control),  $T_1$  = Trichocompost Fertilizer 12.5 tons/ha (62.5 g/polybag),  $T_2$  = Trichocompost Fertilizer 25 tons/ha (125 g/polybag),  $T_3$  = Trichocompost Fertilizer 37.5 tons/ha (187.5 g/polybag). The parameters observed were plant height (cm), number of branches (branches), stem diameter (cm), number of pods per plant (pods), plant production weight (g).*

*The research results indicate that the treatment with Liquid Organic Fertilizer from Fish Waste affects plant growth in terms of height, number of leaves, stem diameter, number of pods per plant, and yield weight. The best treatment was found in  $L_3$  (Liquid Organic Fertilizer from Fish Waste at 300 ml/polybag). Trichocompost influences plant height and the number of pods per plant, but has no effect on the number of branches, stem diameter, and yield weight. The best treatment for Trichocompost was found in  $T_3$  (Trichocompost at 187.5 g/polybag). The interaction between Liquid Organic Fertilizer from Fish Waste and Trichocompost did not affect all observed parameters. The best interaction treatment was found in  $L_3T_3$  (Liquid Organic Fertilizer from Fish Waste at 300 ml/polybag combined with Trichocompost at 187.5 g/polybag).*

**Keywords :** *Soybean Plant, Liquid Organic Fertilizer from Fish Waste, Trichocompost Fertilizer, Growth and Production.*