

RINGKASAN

Penelitian ini dilaksanakan di kebun percobaan Fakultas Pertanian Universitas Islam Sumatera Utara, Gedung Johor, Medan. Penelitian dilaksanakan bulan Agustus hingga bulan Desember 2021. Keterbatasan produksi kedelai nasional disebabkan karena masih rendahnya tingkat produktivitas, kepemilikan lahan yang sempit, luas panen menurun, harga jual yang rendah di tingkat petani. Strategi untuk meningkatkan produksi kedelai nasional adalah optimalisasi produksi melalui peningkatan luas lahan. Peningkatan luas lahan melalui peningkatan indeks pertanaman di lahan irigasi, pemanfaatan lahan marginal, seperti lahan pasang surut dan lahan lebak. Pupuk kompos merupakan sumber pupuk organik yang murah dan berperan dalam pembangunan dan mempertahankan kandungan bahan organik dan kesuburan tanah. Jumlah residu organik yang dikembalikan ke dalam tanah oleh pupuk kompos perlu diperhitungkan. *Chromolaena odorata* bercabang banyak dan adventif sehingga mampu menyerap unsur N yang terikat kuat dalam tanah. Permukaan bawah daun yang halus dan muka atas yang kasar memungkinkan tumbuhan ini menyimpan air dan embun di musim kemarau.

Penelitian ini bertujuan untuk mengetahui pengaruh pemberian pupuk kompos kirinyuh terhadap pertumbuhan dan produksi tanaman kedelai. Penelitian ini menggunakan rancangan acak kelompok non faktorial dengan perlakuan K_0 =kontrol, K_1 =Pupuk kompos kirinyuh 3 kg, K_2 =Pupuk kompos kirinyuh 4,5 kg, K_3 =Pupuk kompos kirinyuh 6 kg, dan K_4 =Pupuk kompos kirinyuh 7,5 kg yang diberikan dengan setiap perlakuan untuk tanaman kedelai. Data yang diamati adalah Tinggi tanaman, Jumlah cabang, Bobot polong perplot, Bobot biji pertanaman sampel, Bobot biji perplot, dan Bobot 100 biji. Data yang diperoleh dianalisa dengan Analisis Sidik Ragam dengan Program SPSS 24.

Hasil analisis sidik ragam menunjukkan bahwa pemberian pupuk kompos kirinyuh (*Chromolaena odorata*) berpengaruh nyata terhadap tanaman kedelai (*Glycine max* (L) Merrill). Perlakuan K_0 menunjukkan bahwa tanpa pemberian pupuk kompos kirinyuh hasil yang di dapat lebih rendah sedangkan pada perlakuan yang di berikan pupuk kompos kirinyuh hasil yang di dapat lebih tinggi.

Kata kunci : *Kompos, Chromolaena odorata, Glycine max.*

SUMMARY

This research was conducted in the experimental garden of the Faculty of Agriculture, Islamic University of North Sumatra, Gedung Johor, Medan. The research was carried from August to December 2021. The limitations of national soybean production were due to the low level of productivity, narrow land ownership, decreased harvested area, low selling prices at the farmer level. The strategy to increase national soybean production is to optimize production through increasing land area. Increase in land area through increasing cropping index on irrigated land, marginal land use, such as tidal land and lowland land. Compost is a cheap source of organic fertilizer and plays a role in the development and maintenance of organic matter content and soil fertility. The amount of organic residue returned to the soil by compost needs to be taken into account. (*Chromolaena odorata*) has many branches and is adventitious so that it is able to absorb N elements that are strongly bound in the soil. The smooth underside of the leaves and the rough upper face allow this plant to store water and dew in the dry season.

This study aims to determine the effect of giving kirinyuh compost on the growth and production of soybean plants. This study used a non-factorial randomized block design with treatments K0 = control, K1 = 3 kg kirinyuh compost, K2 = 4.5 kg kirinyuh compost, K3 = 6 kg kirinyuh compost, and K4 = 7.5 kg kirinyuh compost given with each treatment for soybean plants. The data observed were plant height, number of branches, weight of pods per plot, weight of seeds from sample plants, weight of seeds per plot, and weight of 100 seeds. The data obtained were analyzed by Analysis of Variance with the SPSS 24 Program.

The results of analysis of variance showed that the application of kirinyuh (*Chromolaena odorata*) compost had a significant effect on soybean (*Glycine max* (L) Merrill) plants. The K₀ treatment showed that without the application of kirinyuh compost the yields obtained were lower, while in the treatment given the kirinyuh compost the yields were higher.

Keywords: Compost, Chromolaena odorata, Glycine max.