

**THE EFFECT OF THE DOSE OF ORGANIC FILTER
CAKE FERTILIZER ON THE GROWTH AND
PRODUCTION
OF SOYBEAN PLANTS (GLYCINE Max L.)**

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ABSTRACT

During its growth period, soybeans need nitrogen, potassium and phosphorus, the organic fertilizer content of filter cake such as nitrogen, potassium and phosphorus can help soybeans improve the quality of soybeans. This research aims to examine the dose of organic filter cake fertilizer on the growth of soybean plants. This research used a non-factorial Randomized Block Design (RAK) of 6 doses of filter cake organic fertilizer 0 g/plant, 144 g/plant, 180 g/plant, 216 g/plant, 252 g/plant, 432 g/plant and 4 replications so that there are 24 experimental units. This research was conducted on land located at the Jember State Polytechnic, Summersari District, Jember Regency from December 2023 to March 2024. Based on the research results, the application of organic filter cake fertilizer had an effect on plant height at 20 days after planting and 30 days after planting with an average plant height of 32.04 cm and 40.85 cm at a dose of 432 g/plant. The influence of C-organic contained in organic filter cake fertilizer which can trap nutrients in the soil is useful for triggering plant growth. Apart from that, light intensity also influences the increase in soybean plant height due to changes in auxin which are triggered by changes in light intensity. However, the entire dose of organic filter cake fertilizer did not have a significant effect on the number of leaves and stem diameter. The lack of effect of filter cake organic fertilizer on stem diameter and number of leaves was due to the very low total N content of filter cake organic fertilizer. Total N is very necessary during the vegetative period because if a plant lacks total N, the leaves will change color to yellowish green and then dry out. Apart from that, the function of N is also needed by plants to make amino acids, proteins and enzymes. Thus, applying filter cake organic fertilizer at a dose of 432 g/plant to plant height can optimize the growth of soybean plants.

Keywords : *C – Organic, grade, N total*