

**APPLICATION OF LIQUID ORGANIC FERTILIZER AND  
ANORGANIC ON SOYBEAN GROWTH  
AND PRODUCTION (*Glycine max*)**

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**ABSTRACT**

*Continuous use of inorganic fertilizers can cause degradation of cultivated land, so there is a need for alternatives in the form of adding organic fertilizers. This study aims to analyze the effect of liquid organic fertilizer (POC) as a complementary fertilizer of N, P, and K fertilizers on the growth and yield of soybean plants. This research was conducted in June-September 2022 at BPTP East Java (450 masl, temperature 26-30°C, humidity 79% - 86%). The experiment used a randomized block design (RBD) with two factors. The first factor is the dose of inorganic fertilizer consisting of 100%, 75%, 50%, and 25% recommendations N, P, and K. The second factor is the POC concentration consisting of 50 ml/l<sup>1</sup>, 150 ml/l<sup>1</sup>, 250 ml/l<sup>1</sup>, and 350 ml/l<sup>1</sup>. The results showed the best number of root nodules (20.87) in the 50% N, P, and K + POC 50 ml/l<sup>1</sup> treatment. In addition, the POC concentration of 350 ml/l<sup>1</sup> gave the best results on the number of branches (3.95 fruit), number of leaves (20.34 leaves), number of pods per plant (55.97 fruit), number of filled pods per plant (52, 38 fruit), empty pods planted (2.02 fruit) and fresh biomass weight (32.62 g). Chemical fertilizer dose treatment had no significant effect on all observation variables. The concentration of liquid organic fertilizer 350 ml/l<sup>1</sup> is the concentration that is able to provide the best growth and yield for all observed variables.*

**Keywords** : *Anorganic Fertilizer, Concentrations, Liquid Organic Fertilizer, Soybean*