ABSTRACT

The decline in cucumber crop production is often caused by a lack of nutrient availability in the soil, resulting in suboptimal plant growth and yield. To address this issue, appropriate cultivation strategies are needed to improve plant growth and productivity. One approach used in this study is the combination of superior varieties and the use of organic materials, such as manure and liquid organic fertilizer (LOF) derived from chicken eggshells. The aim of this study is to determine the effects of manure and eggshell-based LOF on the growth and yield of cucumber plants (*Cucumis sativus* L.). This research was conducted in Reuleut Barat Village, Muara Batu Sub-district, North Aceh Regency. The study lasted for three months, from November 2024 to January 2025. A two-factor Randomized Complete Block Design (RCBD) with three replications was used. The first factor was manure application at four levels: K0 (0 tons/ha), K1 (20 tons/ha), K2 (30 tons/ha), and K3 (40 tons/ha). The second factor was the concentration of eggshell LOF at four levels: C0 (0 ml/plant), C1 (100 ml/plant), C2 (200 ml/plant), and C3 (300 ml/plant). The observed parameters included plant height, stem diameter, chlorophyll content, number of leaves, number of productive branches, flowering age, number of flowers, fruit weight per plant, fruit length per plant, fruit diameter per plant, and number of fruits per plant. The results showed that the combination of manure and eggshell LOF had a significant effect on flowering age and the number of flowers. Manure treatment influenced plant height, stem diameter, leaf chlorophyll content, number of leaves, and number of flowers. The best manure treatment was K3 (40 tons/ha). The application of eggshell LOF affected the number of flowers, with the best concentration being C1 (100 ml/plant).

Keywords: Cucumber, Liquid Organic Fertilizer, Manure