

ABSTRACT

Tomato (*Solanum lycopersicum* L.) belongs to the *Solanaceae* family. Tomatoes have an important role in fulfilling the nutrition of the human body. The increasing need for tomatoes is not in line with decreasing productivity due to the application of inappropriate cultivation techniques. Efforts made to increase agricultural land productivity include fertilizing using *Mucuna bracteata* organic fertilizer liquid and egg shell powder. The aim of this research is to examine the influence and interaction between the use of chicken egg shell powder and *Mucuna bracteata* organic fertilizer liquid on the growth and yield of tomato plants. This research was carried out in Pulo Rungkom Village, Dewantara District, North Aceh Regency, and the Agroecotechnology Laboratory, Faculty of Agriculture, Malikussaleh University. This research was conducted from December 2023 to March 2024. This research used a Factorial Randomized Group Design research method with three replications. The first factor is chicken egg shells which consist of (C0) 0 g/plant, (C1) 60 g/plant, (C2) 80 g/plant. The second factor is *Mucuna bracteata* organic fertilizer liquid which consists of (P0) 0 ml/l, (P1) 125 ml/l, (P2) 150 ml/l. The results of the research showed that giving chicken egg shells had a significant to very significant effect on plant height, stem diameter, flowering age, number of fruit per plant until the 3rd harvest, fruit weight per plot, fruit diameter and fruit length. Providing *Mucuna bracteata* organic fertilizer liquid had a significant to very significant effect on plant height, stem diameter, leaf chlorophyll, flowering age, number of fruit per plant until the 3rd harvest, fruit weight per plant until the 3rd harvest, fruit weight per plot, diameter fruit, fruit length and fruit weight per fruit, and there was an interaction between giving chicken egg shells and *Mucuna bracteata* organic fertilizer liquid on fruit weight variables per plot.

Key words: calcium, flowering age, nitrogen, pH