

ABSTRACT

Tomato is a horticultural crop that has an important role in agricultural activities and has high demand in Indonesia. Tomato growth and yield can be improved through the application of organic fertilizers, such as goat manure and lamtoro leaf liquid organic fertilizer. The aim of this research was to determine the response of tomato growth and yield to goat manure and lamtoro leaf liquid organic fertilizer and their interaction. This research was carried out at the Experimental Field of the Faculty of Agriculture, Universitas Malikussaleh, North Aceh. This research was conducted from February to June 2026. The method used in this research was a 2 factorial Randomized Block Design (RBD) with 3 replications. The goat manure factor (K) consisted of 3 levels, namely K0 = 0 kg/bed, K1 = 3 kg/bed, and K2 = 6 kg/bed. The lamtoro leaf liquid organic fertilizer factor (P) consisted of 3 levels, namely P0 = 0 ml/L, P1 = 100 ml/L, and P2 = 200 ml/L. The observed variables were plant height, number of leaves, leaf area, stem diameter, chlorophyll content, stomatal characteristics, flowering age, fruit diameter, fruit length, fruit weight per plant, and yield per hectare. The results showed that goat manure and lamtoro leaf liquid organic fertilizer affected several growth parameters and fruit characteristics. There was an interaction between goat manure and lamtoro leaf liquid organic fertilizer on plant height, number of leaves, leaf area, stem diameter, stomatal length, and fruit diameter. The combination of K2P2 produced the best growth response, while fruit weight per plant and yield per hectare were not significantly affected.

Keywords: chlorophyll, fruit, organic, stomata, vegetative