

## ABSTRACT

Melon (*Cucumis melo* L.) is a horticultural plant whose fruit contains various nutrients and vitamins beneficial for health. A common issue in melon cultivation is the decline in production due to suboptimal plant growth, often caused by excessive use of inorganic fertilizers. Balanced fertilization, combining organic and inorganic fertilizers, is one approach to optimize growth and increase melon production. This study aimed to provide information on the effects of goat manure and potassium fertilizer on the growth and stomatal characteristics of melon plants. The research was conducted in Tambun Tunong Village and the Laboratory of the Faculty of Agriculture, Universitas Malikussaleh, North Aceh, using a two-factor Randomized Block Design (RBD). The first factor was goat manure dosage with three levels: 0 tons/ha (P1), 10 tons/ha (P2), and 20 tons/ha (P3). The second factor was potassium fertilizer dosage with three levels: 0 kg/ha (K1), 150 kg/ha (K2), and 300 kg/ha (K3). The observed parameters included growth parameters (plant height, stem diameter, number of leaves, and leaf area) and stomatal parameters (stomatal length, width, number, and density). The results showed that the application of goat manure alone significantly affected plant height at 3 and 4 weeks after planting (WAP). There was a significant interaction between goat manure and potassium fertilizer affecting leaf area at 2 WAP. Additionally, the interaction between goat manure and potassium fertilizer showed varied effects on stomatal length, width, and density.

Keywords: Goat Manure, Growth, Melon, Potassium Fertilizer, Stomata