

**THE EFFECTS OF COMPOUND FERTILIZER AND FUNGI
MYCORRHIZA ARBUSCULAR (JMA) AFFECTING
GROWTH OF SUGARCANE SEEDLINGS
(*Saccharum officinarum* L) VARIETY
BULULAWANG WITH
BUD SET METHOD**

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ABSTRACT

The low sugar production in Indonesia is caused by various factors, one of which is the suboptimal quality of sugarcane seedlings. Efforts to improve seedling quality can be made through the selection of appropriate nursery methods and the use of fertilizers and biological agents that support plant growth. This study aims to evaluate the effects of compound fertilizer (NPK) and arbuscular mycorrhizal fungi (AMF) on the nursery of sugarcane plants (*Saccharum officinarum* L.) using the bud set method. The research employed a factorial randomized block design with two treatment factors: compound fertilizer doses (0, 1, 2, and 4 mg/polybag) and AMF doses (0, 5, 10, and 15 g/polybag), resulting in 16 treatment combinations with 3 replications. Observed parameters included plant height, stem diameter, number of leaves, number of tillers, fresh root weight, and dry root weight at intervals up to 90 days after planting (DAP). The results showed that compound fertilizer significantly increased plant height, while AMF application significantly affected stem diameter and fresh root weight. The interaction between compound fertilizer and AMF also had a significant impact on dry root weight. The combination of these treatments proved effective in enhancing nutrient absorption, improving root systems, and supporting optimal sugarcane seedling growth.

Keywords: sugarcane, compound fertilizer, arbuscular mycorrhizal fungi, bud set, nursery.