

***THE EFFECT OF GROWING MEDIA COPOSITION ON THE GROWTH
OF SUGAR CANE (*Saccharum officinarum* L.) SEEDLINGS OF THE
RED HW VARIETY USING THE BUD SET METHOD***

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ABSTRACT

Sugarcane (*Saccharum officinarum* L.) is a vital commodity serving as the primary raw material for the sugar industry. Efforts to improve sugarcane seedling quality can be achieved by incorporating organic matter into the growing medium. This study aimed to determine the effect of growing medium composition on the growth of the 'HW Merah' sugarcane variety using the bud set method. The research was conducted from June to October 2025 at the Field Laboratory of the State Polytechnic of Jember. A t-test method was employed to compare various growing medium compositions: a medium without filter cake (control) and media with varying dosages of filter cake. Observed parameters included plant height, number of tillers, stem diameter, number of leaves, and root fresh weight. The results showed that the addition of filter cake to the growing medium had a significant effect (*) on plant height at 120 days after planting (DAP) in treatment B3 (224.760 cm) a highly significant effect (**) on stem diameter in treatments B1 (27.360 mm) and B3 (27.560 mm); and a highly significant effect (**) on root fresh weight at 120 DAP in treatments B2 (83.800 g) and B3 (103.160 g). However, no significant difference (ns) was observed regarding the number of tillers and number of leaves at any observation stage. Nevertheless, visually, treatments involving the addition of filter cake tended to yield higher average growth values compared to the control across most parameters. This indicates that the addition of filter cake elicited a positive response in sugarcane seedling growth, although it did not yet yield a statistically significant impact.

Keywords: bud set, sugarcane seedlings, growing media.