THE EFFECT OF MORINGA LEAF (*Moringa oleifera*) EXTRACT AS A PLANT GROWTH REGULATOR ON THE GROWTH OF BULULAWANG VARIETY SUGARCANE BUD-SET SEEDLINGS

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ABSRACT

Sugarcane (Saccharum officinarum L.) is a vital commodity in the sugar industry, with demand rising annually. A key challenge in sugarcane cultivation is the availability of high-quality seedlings capable of optimal growth. Bud-set seedling technology offers a solution through more efficient plant propagation. Natural Plant Growth Regulators (PGRs) such as Moringa oleifera (moringa) leaf extract, which contains cytokinins can be utilized to enhance sugarcane seedling growth. This study aimed to evaluate the effect of applying moringa leaf extract as a PGR on sugarcane seedling growth. A non-factorial Randomized Block Design (RBD) was employed, featuring six treatment levels: P0 (control: 0 ml moringa extract + 500 ml water), P1 (50 ml moringa extract + 450 ml water), P2 (75 ml moringa extract + 425 ml water), P3 (100 ml moringa extract + 400 ml water), P4 (150 ml moringa extract + 350 ml water), and P5 (175 ml moringa extract + 325 ml water). Each treatment was replicated four times, with four samples per experimental unit, resulting in a total of 96 sample units. The application of moringa leaf extract at the tested concentrations did not yield a significant effect on any of the observed growth parameters namely seedling height, stem diameter, number of leaves, number of tillers, root fresh weight, and root dry weight likely because the sugarcane seedlings were able to meet their physiological needs through internal reserves and nutrients derived from the growing medium.

Keywords : Nursery, Sugarcane, Plant Growth Regulators (PGR)