

**THE EFFECT OF NATURAL PGR EXTRACT OF BEAN SPROUTS ON
THE GROWTH OF SUGARCANE (*Saccharum officinarum* L.)
SEEDLINGS OF THE BULULAWANG VARIETY
USING THE BUD SET METHOD**

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ABSTRACT

*Sugarcane (*Saccharum officinarum* L.) is an important commodity with high economic value, but national sugar production has decreased due to reduced land area and cultivation constraints, especially seed quality and nursery techniques. Bud set nursery techniques are often hampered by the difficulty of uneven root and shoot formation, so natural PGRs such as bean sprout extracts are needed to stimulate growth. This study aims to overcome the constraints of root and shoot growth in bud set sugarcane nurseries using natural Plant Growth Regulators (PGRs) in the form of bean sprout extracts. The study was conducted in August-November 2025 in the field laboratory, Jember State Polytechnic using a non-factorial Randomized Block Design (RBD), with 5 concentration treatments, namely (P0 = 0%, P1 = 20%, P2 = 40%, P3 = 60%, and P4 = 80%) and repeated 5 times. Observation parameters include plant height, stem diameter, number of leaves, number of tillers, root volume. Experimental data were analyzed using ANOVA, and further tests at a 5% LSD level. The results of the study showed a very significant difference in stem diameter at 30 HST with an optimal concentration of 20%, which resulted in a maximum stem diameter growth of 10.468 mm compared to other concentrations.*

Keywords: bud set, bean sprout extract, sugarcane growth, natural plant growth regulators.