

**THE EFFECT OF PGPR (Plant Growth Promoting Rhizobacteria)
APPLICATION ON THE GROWTH OF VOOR-OOGST
TOBACCO SEEDLINGS (*Nicotiana tabacum* L.)
KASTURI VARIETY**

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ABSTRACT

The excessive use of chemical fertilizers in tobacco cultivation has a negative impact on soil fertility and the environment, making it necessary to seek alternatives in the form of environmentally friendly biofertilizers. PGPR (Plant Growth Promoting Rhizobacteria) is a group of beneficial bacteria capable of colonizing the rhizosphere, producing plant growth regulators (PGR), fixing nitrogen, solubilizing phosphate, and suppressing soil pathogen activity, thus having the potential to improve seedling growth. The research was conducted at the experimental farm of Politeknik Negeri Jember from August 2024 to January 2025. The design used was a Non-Factorial Randomized Block Design (RAKNF) with 4 treatments and 6 replications, resulting in a total of 240 sample plants. The treatments consisted of P0 (control/without PGPR), P1 (25 ml/L PGPR), P2 (50 ml/L PGPR), and P3 (75 ml/L PGPR). The observed parameters included plant height, number of leaves, stem diameter, and root volume, measured at 14, 21, 28, and 35 Days After Transplanting (DAT). Data were analyzed using anova followed by the Least Significant Difference (LSD) test at the 5% significance level. The results showed that PGPR application had a highly significant effect on plant height at 14 DAT, stem diameter at 14 and 35 DAT, and number of leaves at 14, 21, and 35 DAT. PGPR treatment had a significant effect on stem diameter at 28 DAT and number of leaves at 28 DAT. However, PGPR application had no significant effect on plant height at 21, 28, and 35 DAT, nor on root volume at 35 DAT.

Keywords: PGPR, Kasturi tobacco