THE EFFECT OF MYCORRHIZAE AND PGPR APPLICATION ON PEST AND DISEASE ATTACK INTENSITY AND THE PRODUCTION OF PURPLE WAXY CORN
(Zea mays L. ceratina)

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ABSTRACT

The low productivity of glutinous corn is caused by several factors, including infertile soil conditions and its high susceptibility to pests and diseases. These conditions hinder optimal plant growth and significantly reduce crop yields. Therefore, alternative environmentally friendly control measures are needed, one of which involves the use of biological agents such as Plant Growth-Promoting Rhizobacteria (PGPR) and mycorrhizae. This study aimed to analyze the effect of PGPR and mycorrhizal treatments on pest infestation intensity and the production yield of glutinous corn. The research was conducted from June to September 2024 in Duko Kembang Village, Bondowoso District, Bondowoso Regency, East Java Province. The experimental design used was a non-factorial Randomized Complete Block Design (RCBD) consisting of four treatments: K (100% inorganic fertilizer), P (50% inorganic fertilizer + PGPR), M (50% inorganic fertilizer + mycorrhiza), and PM (50% inorganic fertilizer + PGPR + mycorrhiza). The observed parameters included: (1) agronomic parameters such as plant height, stem diameter, time to male and female flowering, cob weight, cob diameter, and cob length, and (2) pest infestation intensity by grasshoppers, armyworms, and downy mildew. Data were analyzed using ANOVA and followed by the DMRT test at a 5% significance level. The results showed that the treatments had no significant effect on either the agronomic parameters or the intensity of pest infestation.

Keywords*: Corn, Mycorrhizae, Plant Pests and Diseases, Production, PGPR*