

APPLICATION OF THE ENTOMOPATHOGENIC FUNGUS *Metarhizium* sp. ON THE INTENSITY OF FALL ARMYWORM (*Spodoptera frugiperda*) ATTACK AND THE PRODUCTION OF WAXY CORN

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ABSTRACT

Waxy corn (*Zea mays* var. *Ceratina*) is a potential alternative carbohydrate source due to its high amylopectin content. Its productivity is often reduced by infestations of the fall armyworm (*Spodoptera frugiperda*). Pest control is generally conducted using synthetic insecticides; however, continuous use may lead to pest resistance and negative environmental impacts. This study aimed to compare the effectiveness of *Metarhizium* sp. and methomyl insecticide on pest infestation intensity and waxy corn yield. The research was conducted from September to December 2025 in Kaliurang Village, Sumbersari District, Jember Regency. A field comparison method was applied using two plots measuring 4.5 m × 20 m, consisting of *Metarhizium* sp. and methomyl treatments. *Metarhizium* sp. was applied at a concentration of 16 g L⁻¹ of water once a week, while methomyl was applied according to the recommended dosage at 14–42 days after planting. Plant samples were taken from 10% of the population using a zig-zag pattern. Observed parameters included plant height, number of leaves, pest infestation intensity, and ear weight. Data were analyzed using the Kolmogorov–Smirnov normality test, Levene’s homogeneity test, and Independent Samples *t*-test or Mann–Whitney test. The results showed that *Metarhizium* sp. improved vegetative growth at 21–35 days after planting. Pest infestation intensity and ear weight were not significantly different between treatments, with average ear weights of 178.6 g for *Metarhizium* sp. and 176.3 g for methomyl. Therefore, *Metarhizium* sp. has potential as an environmentally friendly alternative for pest control and supports Integrated Pest Management (IPM).

Keywords: kolmogorov–smirnov, levene, mann–whitney, *metarhizium* sp, *Spodoptera frugiperda*.