

**EXPLORATION AND PATHOGENICITY TEST OF
ENTOMOPATHOGENIC NEMATODES FROM VARIOUS SUGARCANE
CULTIVATION LOCATIONS IN YOGYAKARTA AGAINST THE WHITE
GRUB (*Lepidiota stigma*)**

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ABSTRACT

Lepidiota stigma larvae is a major pest in sugarcane. Entomopathogenic nematodes are expected to serve as biological agents to control this pest. The initial stage in implementing biological control is exploration. Sugarcane plantations in Yogyakarta are mostly cultivated on regosol-textured soil, conditions conducive to the habitat of nematodes. This research aims to identify the distribution of entomopathogenic nematode species in sugarcane plantations and determine the pathogenicity level of entomopathogenic nematodes against the mortality of *L. stigma* larvae. This research conducted at the Plant Protection Laboratory, UPN "Veteran" Yogyakarta. The research method uses a Completely Randomized Design (CRD) with 1 factor and 7 repetitions. The factor used is the type of nematode obtained in sugarcane cultivation soil taken from Madukismo, Jangkang, Klisat, Banyuroto, and Sidoluhur. Parameters observed include population density, nematode species identification, mortality, death rate, feeding ability and LT50. Observation data were analyzed using Analysis of Variance (ANOVA), and if there were significant differences, it was followed by Duncan's Multiple Range Test (DMRT) with a significance level of 5%. The results showed that entomopathogenic nematodes were found in all five sugarcane plantations. The three best tested samples showed no significant difference between treatments in the mortality of *Lepidiota stigma* larvae.

Keywords: Exploration, Virulence Testing, Entomopathogenic Nematodes, Sugarcane, White Grub, *Lepidiota stigma*