

**EFFECTIVENESS OF VARIOUS CONCENTRATIONS OF
ENTOMOPATHOGEN NEMATODES *Steinernema* spp. FROM VARIOUS
SUGAR CANE PLANTATION IN CONTROLLING WHITE GRUBS
*Lepidiota stigma***

By : Kesyha Shafa Viantari
Supervised by : Ir. Chimayatus Solichah, MP.

ABSTRACT

Larvae of *Lepidiota stigma* is a major pest in sugarcane plantations. Entomopathogenic nematodes are expected to serve as biological agents in controlling *L. stigma* larvae biologically. This research aims to identify the level of pathogenicity of various isolates of entomopathogenic nematodes (EPN) *Steinernema* sp. from various locations against the white grubs (*L. stigma*) and identified the most effective concentration of *Steinernema* sp. to control *L. stigma*. The study will be conducted at the Plant Protection Laboratory, UPN 'Veteran' Yogyakarta. The research method employs a Completely Randomized Design (CRD) with a single factor and three repetitions. The factor used is the EPN isolates (Banyuroto, Jangkang Ayu, and Madukismo) concentration which consists of 200 JI/mL, 400 JI/mL, 800 JI/mL, and control/aquades. The observed parameters include pest mortality, pest mortality rate, feed inhibition, LT50 and LC50. The observation data will be analyzed using Analysis of Variance (ANOVA) and to determine the difference between treatments, used Orthogonal Contrast test at 5% significance level. The results showed that the Banyuroto 800 JI isolate resulted in the highest mortality and death rate, as well as the greatest reduction in feeding capacity based on the feeding capacity parameter. Meanwhile, the Banyuroto 400 JI isolate achieved the fastest lethal time to kill 50% of the larval population (LT50 parameter). Banyuroto isolate was identified as the most effective based on the LC50 value.

Keywords: Effectiveness, Concentration, Entomopathogenic Nematodes, *Steinernema* sp., White Grub, *Lepidiota stigma*