

**THE EFFICACY OF *Toona sureni* (Bl.) merr LEAF EXTRACT
ACROSS DIFFERENT CONCENTRATIONS IN MANAGING
TOBACCO CUTWORM (*Spodoptera litura* F.) INFESTATIONS**

By : Yudikat Saputra

Supervised by : Dr. Ir. RR Rukmowati Brotodjojo, M.Agr

ABSTRACT

Management of the tobacco cutworm (*Spodoptera litura* F.) among agricultural practitioners remains heavily reliant on the application of synthetic pesticides, deemed practical for control purposes. *Toona sureni* (Bl.) *merr* emerges as a promising botanical resource owing to its triterpenoid composition, notably comprising suren, surenin, and surenolactone, all known for their insecticidal and antifeedant properties against pests. This study was conducted at the Plant Protection Laboratory, Faculty of Agriculture, UPN "Veteran" Yogyakarta, Condongcatur, Depok District, Sleman Regency, Special Region of Yogyakarta. Employing a Completely Randomized Design (CRD), the research comprised a single factor with six treatment variations, each replicated thrice. Treatments encompassed concentrations of *T. sureni* leaf extracts, denoted as TP : Untreated Control, T0: Synthetic Insecticide Control (Deltamethrin), T1: 8% Sureni Leaf Extract, T2: 10% Sureni Leaf Extract, T3: 12% Sureni Leaf Extract, and T4: 14% Sureni Leaf Extract. Data collection relied on direct pest observation, evaluating parameters such as larval mortality, larval feeding capacity, larval-pupal transition, larval-to-pupal percentage, pupal-adult transition, larval-to-adult percentage, and overall efficacy. Statistical analysis employed analysis of variance (ANOVA) at a 5% significance level, followed by Duncan's Multiple Range Test (DMRT) at the same level, to discern significant treatment differences. Application of *T. sureni* leaf extracts at concentrations of 8%, 10%, 12%, and 14% demonstrated optimal efficacy in augmenting *S. litura* mortality rates and overall control efficacy.

Keywords: tobacco cutworm, control, *Toona sureni* leaf extracts