

ABSTRACT

This study aims to determine the effect of betel leaf extract (Piper betle L.) to eradicate the brown planthopper (Nilaparvata lugens). This type of research is true experiment with Completely Randomized Design (RAL) method. Data analysis used one-way ANOVA test and further tested using probit LC50 analysis with 95% confidence level. The concentration of betel leaf (Piper betle L.) was 10 ml, 30 ml, 50 ml and the positive control was Dichlorodiphenyltrichloroetama (DDT) with 3 repetitions. The parameter measured was the mortality rate of the brown planthopper (Nilaparvata lugens) for 24 hours. Based on the results of the study, it was shown that in the 24-hour observation at concentrations of 10 ml, 30 ml, 50 ml, they were 2.6%, 4%, 5%, respectively. From the results of the ANOVA test, it was found that $F_{count} (44,000 > 5.28\%) > F_{table} 0.05$ and further test of probit analysis on LC50 mortality of 5.28%. It can be concluded that the betel leaf extract was able to kill the brown planthopper with the optimum concentration of 50 ml.

Keywords: *Betel leaf extract, Mortality, Brown planthopper (Nilaparvata lugens).*

ABSTRAK

Penelitian ini bertujuan untuk mengetahui pengaruh ekstrak daun sirih (*Piper betle* L.) untuk membasmi Wereng coklat (*Nilaparvata lugens*). Jenis penelitian adalah true eksperimen dengan metode Rancangan Acak Lengkap (RAL). Analisis data menggunakan uji ANOVA satu jalur dan di uji lanjut menggunakan analisis probit LC_{50} dengan taraf kepercayaan 95%. Konsentrasi daun sirih (*Piper betle* L.) 10 ml, 30 ml, 50 ml dan kontrol positif yaitu Diklorodifeniltriikloroetama (DDT) dengan 3 kali pengulangan. Parameter yang diukur ialah besarnya mortalitas pada Wereng coklat (*Nilaparvata lugens*) selama 24 jam. Berdasarkan hasil penelitian menunjukkan bahwa dalam pengamatan selama 24 jam pada konsentrasi 10 ml, 30 ml, 50 ml masing-masing adalah 2,6%, 4%, 5%. Dari hasil uji ANOVA di dapatkan hasil Fhitung ($44.000 > 5,28\%$) F_{tabel} 0,05 dan uji lanjut analisis probit pada kematian LC_{50} sebesar 5,28%. Dapat disimpulkan bahwa ekstrak daun sirih mampu membunuh Wereng coklat dengan konsentrasi optimumnya yaitu konsentrasi 50 ml.

Kata kunci: Ekstrak daun sirih, Mortalitas, Wereng coklat (*Nilaparvata lugens*).