

**PENENTUAN EFEKTIVITAS DAN KONSENTRASI EKSTRAK
TERFERMENTASI SERAI (*Cymbopogon citratus* D.C.)
DAN BABADOTAN (*Ageratum conyzoides* L.) KERING
SEBAGAI BIOKONTROL *Crocidolomia binotalis* Z.**

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ABSTRACT

Pesticide chemicals have played a significant part in increasing agricultural production and productivity. However, the continuous use of pesticide chemicals, in particular, has not only caused death through poisoning, accumulated in man, concentrated in food chain, but also resistance in pest population and destroyed parasites, predators and pollinators. Organic agriculture using natural biocontrol (Fermented Plant Extract (FPE) and EM-4) is a substitute alternative for pesticide chemical. The use of FPE from various fresh medicine plant have been done before. This study using dry serai (*Cymbopogon citratus* D.C.) and babadotan (*Ageratum conyzoides* L.) as FPE to assay effectiveness of both plant that fermenting use Effective Microorganisms-4 (EM-4) and to determine the optimum concentration and duration of immersion in FPE for repel *Crocidolomia binotalis* Z. Beside that, this study had objective to determine the acid total as lactic acid from FPE and antioxidant activity from FPE and sawi. Experiment has been done using bioactivity test methode based on Priyono (1999) to assay optimum concentration and duration of immersion in FPE. Concentration variation of FPE were 0,1%, 0,2%, 0,3%, 0,4%, 0,5%, 25%, 50%, 60%, 70%, 80%, 90% and 100%. The duration of immersion in FPE were 30, 60 seconds and 60 minutes. Bioactivity test result showed that babadotan's FPE at concentration of 100% and duration of immersion 60 minutes can repel *Crocidolomia binotalis* Z. but serai's FPE can not repel *Crocidolomia binotalis* Z. Statistics analysis at $P \leq 0,05$ of feeding barrier index from both of FPE did not significantly to repel *Crocidolomia binotalis* Z. except babadotans' FPE at 100%. The acid total assay of serai's and babadotan's FPE based on alkalimetric methode were 1, 8669% and 2, 4108%, respectively. The result of antioxidant activity assay in all treatment based on Lindsey *et al* (2002) showed high resistance percentage about 90-96%. Statistics analysis at $P \leq 0,05$ of antioxidant activity assay did not significantly difference in serai's and babadotan's FPE but significantly difference with sawi that immersed in water.

Key word: fermentation, biocontrol, babadotan (*Ageratum conyzoides* L.), serai (*Cymbopogon citratus* D.C.)

