

**FORMULASI CAMPURAN INSEKTISIDA NABATI EKSTRAK  
BUAH *Piper aduncum* DAN DAUN *Tephrosia vogelii* UNTUK  
PENGENDALIAN *Plutella xylostella* Linnaeus  
(LEPIDOPTERA: PLUTELLIDAE)**

**SKRIPSI**



**FAKULTAS PERTANIAN  
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**Abstrak**

Formulasi campuran *Piper aduncum* dan *Tephrosia vogelii* dalam bentuk *emulsifiable concentrate* (EC) dan *wettable powder* (WP) diketahui aktif mengendalikan *Crocidolomia pavonana*. Penelitian ini bertujuan untuk mengetahui pengaruh formulasi campuran *T. vogelii* dan *P. aduncum* terhadap mortalitas, aktivitas *antifeedant*, dan lama perkembangan hama utama kubis lainnya yaitu *Plutella xylostella*. Pengujian ini menggunakan Rancangan Acak Lengkap (RAL) meliputi uji pendahuluan dan uji lanjutan. Uji pendahuluan dilakukan untuk menentukan rentang konsentrasi pada uji lanjutan dalam mematikan *P. xylostella*. Penelitian ini menggunakan metode residu pada daun dengan metode tanpa pilihan dengan konsentrasi 0.10% dan 0.25% dan dilakukan sebanyak 4 ulangan. Uji lanjutan dilakukan pada 6 konsentrasi (0.00%, 0.05%, 0.08%, 0.12%, 0.19% dan 0.30%) dan 5 ulangan. Pengujian formulasi EC dan WP menunjukkan aktivitas insektisida terhadap *P. xylostella* dengan nilai  $LC_{50}$  formulasi EC dan WP berturut-turut 0.07% dan 0.06%, sedangkan nilai  $LC_{95}$  formulasi EC 0.35% dan formulasi WP sebesar 0.37%. Selain itu, formulasi EC dan WP menyebabkan efek *antifeedant* (82.23% dan 88.09%) dan juga memperpanjang masa perkembangan serangga uji pada formulasi EC 1.34-2.30 hari dibandingkan kontrol dan formulasi WP 1.76-1.82 hari dibandingkan kontrol.

Kata kunci : *emulsifiable concentrate* (EC), insektisida nabati, *Plutella xylostella*, *wettable powder* (WP)

**BOTANICAL INSECTICIDE FORMULATIONS OF MIXED  
EXTRACT FROM *Piper aduncum* FRUIT AND *Tephrosia vogelii*  
LEAF to control *Plutella xylostella* Linnaeus  
(LEPIDOPTERA: PLUTELLIDAE)**

**Abstract**

Formulations of mixed extract of *Piper aduncum* and *Tephrosia vogelii* in the form of emulsifiable concentrate (EC) and wettable powder (WP) were known active to control *Crociodolomia pavonana*. The purposes of this study are to determine the effect of mixed extract formulations of *T. vogelii* and *P. aduncum* on mortality, antifeedant activity, and length of development of other major cabbage pest, *Plutella xylostella*. The experiment was using the Randomized Complete Design (RAL) through preliminary and advanced tests. The preliminary test was performed to determine a lethal concentration range of *P. xylostella* for an advanced test. This research used unselected leaf residual method with concentrations 0.10% and 0.25% and 4 replications for preliminary test. Advanced tests were performed at 6 concentrations (0.00%, 0.05%, 0.08%, 0.12%, 0.19% and 0.30%) and 5 replications. The result showed that EC and WP formulations have an insecticidal activity against *P. xylostella* with LC<sub>50</sub> value of EC and WP formulations 0.07% and 0.06% respectively and LC<sub>95</sub> value of EC and WP formulations 0.35% and 0.37% respectively. In addition, EC and WP formulations have an antifeedant effects (82.23% and 88.09%) and also prolonged the development of insect test with value 1.34 to 2.30 days for EC formulations and 1.76 to 1.82 days for WP formulations compared to controls.

Keywords: emulsifiable concentrate (EC), botanical insecticide, *Plutella xylostella*, wettable powder (WP).



