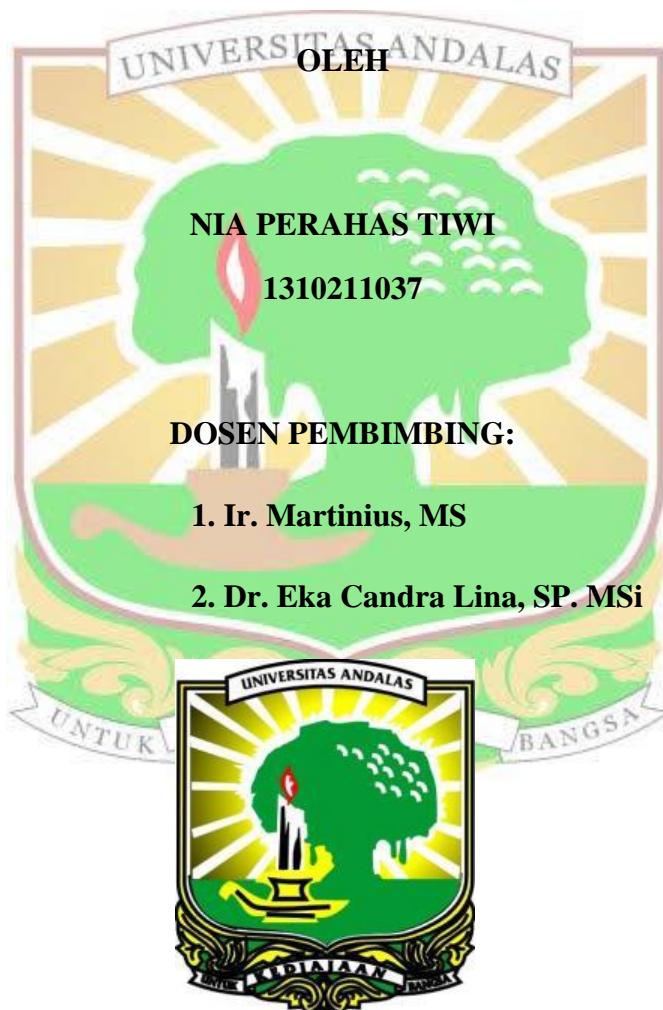


**PENGARUH FORMULASI CAMPURAN INSEKTISIDA
NABATI BUAH *Piper aduncum* DAN DAUN *Tephrosia vogelii*
DAN INTENSITAS APLIKASI TERHADAP
KEANEKARAGAMAN ARTHROPODA TANAH DI
PERTANAMAN KUBIS (*Brassica oleracea L*)**

SKRIPSI



**FAKULTAS PERTANIAN
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Abstrak

Arthropoda adalah salah satu kelompok hewan yang berperan penting dalam ekosistem pertanian. Penelitian ini bertujuan untuk mengetahui pengaruh formulasi campuran insektisida nabati berbahan buah *Piper aduncum* dan daun *Tephrosia vogelii* dan intensitas aplikasi terhadap keanekaragaman arthropoda tanah. Penelitian tentang keanekaragaman arthropoda tanah dilaksanakan di lahan pertanaman kubis yang di aplikasi pestisida dengan Rancangan Acak Kelompok (RAK) 2 faktorial dengan 5 perlakuan dan 3 ulangan di daerah Jorong Jambu Kaniki Tanah Bato, Kecamatan Batipuh Atas, Kabupaten Tanah Datar dari Maret sampai Juli 2017. Perlakuan yang diuji meliputi kontrol, formulasi WP (*wettable powder*), EC (*Emulsifiable concentrate*), BT (*Bacillus thuringiensis*) dan insektisida sintetik (klorfenapir). Pengambilan sampel arthropoda tanah menggunakan perangkap *pitfall trap* pada 75 titik yang mewakili seluruh perlakuan. Jenis formulasi dan intensitas aplikasi mempegaruhi jumlah individu arthropoda tanah secara keseluruhan. Hasil penelitian menunjukkan adanya interaksi formulasi dan intensitas aplikasi, semakin sering aplikasi formulasi WP dan EC cenderung meningkatkan jumlah individu arthropoda tanah. Sebaliknya penggunaan insektisida sintetik menurunkan jumlah individu arthropoda tanah. Intensitas aplikasi tidak mempengaruhi jenis arthropoda tanah. Identifikasi lebih lanjut terhadap sampel arthropoda tanah dari lahan percobaan menunjukkan keanekaragaman arthropoda tanah tergolong sedang (2,23– 2,97), kemerataan arthropoda tanah tergolong sedang-tinggi (0,23– 0,65) dan pengaruh formulasi terhadap indeks kemiripan arthropoda tanah tergolong sangat tinggi (0,923– 1,000) sedangkan pengaruh intensitas aplikasi terhadap indeks kemiripan tergolong sedang- tinggi (0,667- 0,923). Arthropoda tanah yang ditemukan di pertanaman kubis terdiri dari 3 kelas : Arachnida (1 Ordo; 1 Famili), Insecta (1 Ordo; 4 Famili), Entognata (1 Ordo; 2 Famili). Jenis arthropoda tanah yang dominan ditemukan adalah famili Collembola (*Onychiuridae*).

Kata Kunci : keanekaragaman, arthropoda tanah, kubis (*Brassica oleracea L.*), insektisida nabati, insektisida sintetik

**THE EFFECT OF MIXED FORMULATION OF BOTANICAL
INSECTICIDE FROM *Piper aduncum* FRUIT AND *Tephrosia vogelli* LEAF
AND INTENSITY OF APPLICATION AGAINST THE DIVERSITY OF
SOIL ARTHROPODS IN CABBAGE PLANTATION
(*Brassica oleracea L.*)**

Abstract

Arthropod is one of important animal group in agriculture ecosystem. The purpose of this research are determine effect of botanical insectisides mix formulation from *Piper aduncum* fruit and *Tephrosia vogelii* leaf and their application intensity against diversity of soil arthropods. The research was conducted in cabbage plantation applied by pesticide using Randomized Block Design two factorial with 5 treatments and 3 duplications in Jorong Jambu Kaniki, Batipuh Atas, Tanah Datar from March to July 2017. The treatments were include control, WP (*wettable powder*) botanical insectisides formulation, EC (*Emulsifiable concentrate*) botanical insectisides formulation, BT (*Bacillus thuringiensis*) formulation and synthetic insecticide (chorfenapyr). Soil arthropod samples were taken by *pitfall trap* at 75 points representing all treatments. The type of formulations and intensity of application affect the number of soil arthropods individu. There are interaction between formulations and intensity of application, enhancement on formulations application of WP and EC tend to increase the number of soil arthropods individu. Otherwise the use of synthetic insecticide significantly decrease the number of soil arthropod individu. The application intensity does not affect the type of soil arthropods. Further identification of soil arthropod samples from the experimental field showed the diversity of soil arthropods is categorize moderate (2,23–2,97), evenness is categorize medium to high (0,25–0,65), index similarity formulations is categorize high (0,923– 1,000), and index similarity intensity application in categorize medium to high (0,667–1,000). Soil arthropods ware found in cabbage plantations consist of 3 classes: Arachnida (1 Order; 1 Family), Insecta (1 Order; 4 Family), Entognata (1 Order; 2 Family). Soil arthropods were dominated by Order Collembola, Family *Onychiuridae*.

Keywords: *diversity, soil arthropods, cabbage (Brassica oleraceae L.), botanical insectisides, synthetic insecticides.*