

**KEANEKARAGAMAN DAN KEMELIMPAHAN JENIS SERANGGA
PADA PERKEBUNAN APEL (*Malus sylvestris* (L.) Mill) KONVENSIONAL
DI TULUNGREJO, BATU, JAWA TIMUR**

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ABSTRAK

Tanaman apel merupakan tanaman yang rentan terhadap hama dan penyakit tanaman. Aplikasi pestisida untuk menekan populasi serangga hama memberikan dampak negatif terhadap keberadaan serangga potensi musuh alami dan polinator. Tujuan penelitian untuk mengetahui keanekaragaman dan dominansi jenis serangga tiap fase perkembangan tanaman dan mengetahui keanekaragaman dan kemelimpahan jenis serangga potensi hama, polinator, dan musuh alami di perkebunan apel konvensional Tulungrejo, Batu, Jawa Timur koordinat S 07°48,665' E 112°31.506' dan berada di ketinggian 1254 m dpl. Penelitian dilaksanakan bulan Februari sampai Mei 2016 di setiap fase perkembangan tanaman apel yaitu pasca perompesan, bunga awal, bunga akhir, buah awal, dan buah akhir. Ukuran plot 10x10 m² sebanyak 5 plot dengan jumlah tanaman 60 pohon. Metode koleksi yaitu aktif (*hand picking*, *insect net*, dan *beating tray*) dan pasif (*yellow trap*, *pitfall trap*, *light trap*, dan *stainer trap*). Metode awetan serangga yaitu awetan kering dan basah. Identifikasi serangga di Laboratorium Entomologi, Fakultas Biologi, UGM dan Laboratorium Entomologi Bidang Zoologi Puslit Biologi LIPI Cibinong. Analisis data keanekaragaman menggunakan Indeks Shannon-Wiener, dominansi menggunakan Indeks Simpson, dan Kemelimpahan. Hasil penelitian ini serangga yang tertangkap terdiri dari 9 Ordo, 27 Famili, 38 Spesies. Indeks keanekaragaman jenis serangga pada tiap fase perkembangan tanaman apel yaitu pada pasca perompesan (0,69), bunga awal (1,39), bunga akhir (1,86), buah awal (0,66), dan buah akhir (1,24). Indeks dominansi pada tiap fase perkembangan tanaman apel yaitu pasca perompesan (0,50), bunga awal (0,34), bunga akhir (0,21), buah awal (0,75), dan buah akhir (0,40). Indeks keanekaragaman potensi serangga hama (1,46), potensi polinator (1,29), dan potensi musuh alami (1,18). Kemelimpahan serangga potensi polinator paling tinggi *Apis cerana*, potensi musuh alami *Pantala flavescens*, dan potensi hama *Aphis gossypii*.

Kata Kunci: Keanekaragaman, Kemelimpahan, Perkebunan Apel, konvensional

DIVERSITY AND ABUNDANCE OF INSECT IN CONVENTIONAL APPLE (*Malus sylvestris* (L.) Mill) PLANTATION AT TULUNGREJO, BATU, EAST JAVA

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ABSTRACT

Apple is a plant that susceptible toward pests and diseases. Application of pesticide to suppress insect pest population gave negative impact toward natural enemies and insect pollinators. The purposes of this research were to know about the diversity and insect domination in each phase of apple growth and to know about the diversity and insect abundance of potential pests, pollinators, and natural enemies in conventional apple plantation at Tulungrejo, Batu, East Java which located at S 07°48,665' E 112°31,506' with altitude 1254 m above sea level. This research was conducted in February to May 2016 in each phase of apple growth namely, after defoliation, early flower, late flower, early fruit, and late fruit. Plot size was 10x10 m² with total 5 plots and total plants in each plot were 60 trees. Collection methods were active collection (*hand picking*, *insect net*, and *beating tray*) and passive collection (*yellow trap*, *pitfall trap*, *light trap*, and *stainer trap*). Preservation methods used in this research were dry preservatoin and wet preservation. Identification was conducted in Laboratorium of Entomology, Faculty of Biology UGM and Laboratorium Entomology, Zoology Division, Research Centre for Biology Indonesian Institute of Sciences, Cibinong. Data analyzed by using Shannon-Wiener Diversity Index, Simpson Dominance Index and Abundance Formulation. The results showed that total insects that was caught consist of 38 species belong to 9 orders. Diversity index in each phase of apple growth were: after defoliation (0.69), early flower (1.39), late flower (1.86), early fruit (0.66), and late fruit (1.24). Domination index each phase of apple growth were after defoliation (0.50), early flower (0.34), late flower (0.21), early fruit (0.75), and late fruit (0.40). Diversity index of potential insect as pest (1.46), as pollinator (1.29), and as natural enemies (1.18). The highest abundance of insect as pollinator was *Apis cerana*, as natural enemy was *Pantala flavescens*, and as pest was *Aphis gossypii*.

Key words: Diversity, Abundance, Apple Plantation, Conventional