

Bioekologi lalat buah *Bactrocera carambolae* drew and hancock dan *Bactrocera papayae* drew and hancock diptera tephritidae = Bioecology of fruit flies *Bactrocera carambolae* drew and hancock and *Bactrocera papayae* drew and hancock diptera tephritidae

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Abstrak

[ABSTRAK

Telah dilakukan penelitian bioekologi lalat buah (*Bactrocera carambolae*) (Drew and Hancock) dan (*Bactrocera papayae*) (Drew and Hancock) selama satu tahun (Februari 2011 ? Januari 2012) di Taman Buah Mekarsari, Cileungsi, Bogor, Jatibarang, Indramayu dan Pancoran Mas, Depok, Provinsi Jawa Barat. Kegiatan yang dilakukan meliputi penelitian sebaran populasi lalat buah *B. carambolae* dan *B. papayae* di lapangan, uji preferensi lalat buah di laboratorium, dan parasitasi parasitoid lalat buah pada tanaman belimbing, mangga, jambu bol, jambu air dan jambu biji. Penelitian sebaran populasi lalat buah dilakukan dengan cara pemasangan perangkap botol bekas air mineral yang beratraktan metil eugenol (ME) dan digantungkan pada tanaman inang ketinggian 2 m. Populasi lalat buah yang tertangkap dalam perangkap diamati dua kali dalam seminggu. Penelitian preferensi tanaman inang terhadap lalat buah dilakukan di laboratorium pada alat ?winntunel?, lalat buah betina dimasukkan dalam dalam sangkar lalat buah di bagian tengah yang dihubungkan dengan toples wadah buah inang di sekelilingnya. Melalui udara yang dialirkan dari toples buah ke sangkar lalat buah akan menarik lalat buah untuk memilih buah inang yang paling disukai. Peubah yang diamati meliputi jumlah lalat buah yang masuk, kerusakan buah, jumlah pupa dan perbandingan kelamin, pengamatan dilakukan setiap hari. Penelitian parasitasi parasitoid lalat buah dilakukan dengan cara mengumpulkan buah-buah yang terserang sebanyak 30 buah/tanaman dibawa ke laboratorium disimpan secara terpisah satu buah dalam satu wadah toples. Buah-buah dipelihara sampai muncul imago lalat buah dan parasitoid yang muncul, diamati jenis parasitoid dan tingkat parasitasinya. Hasil penelitian menunjukkan bahwa populasi lalat buah *B. carambolae* di Mekarsari sangat tinggi diperoleh pada belimbing Malaya, jambu biji Getas merah, jambu bol Jamaica, jambu air Citra, sementara di Indramayu sangat tinggi pada mangga Harumanis, dan di Depok populasi tertinggi pada belimbing Dewi. Populasi *B. papayae* tertinggi di Mekarsari pada mangga Manalagi, di Indramayu pada mangga Harumanis dan di Depok pada belimbing Dewi. Baik populasi *B. carambolae* maupun *B. papayae* tampak rendah pada belimbing di Welahan. Iklim memengaruhi fluktuasi populasi *B. carambolae* dan *B. papayae*. Preferensi dan perkembangan *B. carambolae* tertinggi pada belimbing Malaya diikuti mangga Manalagi dan untuk *B. papayae* pada pepaya California yang diikuti mangga Manalagi. Penelitian ini juga menunjukkan bahwa preferensi dan perkembangan *B. carambolae*, *B. papayae* sangat rendah pada varietas belimbing Welahan. Parasitoid yang menyerang *B. carambolae* dan *B. papayae* di tiga tempat penelitian didominasi oleh dua spesies, yaitu, *Diachasmimorpha longicaudata*, dan *Fopius arisanus* (Hymenoptera: Braconidae). Tingkat parasitasi *D. longicaudata* lebih tinggi (21,9 ? 41,6%) dibandingkan *F. arisanus* (16,1 ? 38,9%) pada semua tanaman inang yang diamati;

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ABSTRACT

Bio-ecology research on fruit flies (*Bactrocera carambolae*) (Drew and Hancock), and (*Bactrocera papayae*) (Drew and Hancock) were conducted for one year (February 2011 - January 2012) at three different areas: The Fruit Garden Mekarsari, Cileungsi, Bogor, Jatibarang, Indramayu and Pancoran Mas, Depok, all in West Java Province. The activities included studies on dispersal of fruit flies population *B. carambolae* and *B. papayae* in the field, and preferences tests of fruit flies in laboratory, and parasitic of parasitoids of fruit flies on star fruits, mangos, guava bol, water guavas and stone guavas. The studies of dispersal of Fruit flies population distribution were conducted at the above three named areas, using used bottles of mineral water as traps containing methyl eugenol (ME) hung on the host plants at 2 m height. The Fruit flies populations trapped in the used mineral water bottles were observed twice a week. The research preference of host plants for fruit flies were conducted at the laboratory using wind tunnel equipment, and the female of fruit flies were placed in the middle of flies cages and connected to the surrounding host fruit containers. Through the air flow from containers to the cages fruit flies were attracted to choose the most preferred host fruits. The measured variables included the trapped amount of fruit flies, damage of fruits, pupa number and sex ratios, and the observations were conducted daily. The studies of parasiticity of fruit flies parasitoid were conducted by collecting approximately 30 attacked fruits from each plant and kept individually in the laboratory. The fruits were retained until the imago fruit flies and parasitoids emerged, then the type of parasitoids and their level parasiticoicity wer observed. The results showed that the fruit flies population *B. carambolae* was very high at Mekarsari derived from Malaya star fruits, guava Getas Merah, jambu bol Jamaica, water guava Citra, while the high level of population at Indramayu was observed on Harumanis mangos, and in Depok was on star fruits Dewi. The population of *B. carambolae* and *B. papayae* appeared to below on star fruits at Welahan. Climatic fluctuations affected the population of *B. carambolae* and *B. papayae*. The preference and the regeneration of *B. carambolae* were higher on Malaya star fruits followed by mango Manalagi (a variety of Mango) and *B. papayae* was from the California variety, followed by mango Manalagi. The study also showed that the preferences and regenerations of *B. carambolae*, *B. papayae* were very low on star fruit varieties Welahan. The domination of Parasitoids on *B. carambolae* and *B. papayae* attacks in the three research locations were two species namely, *Diachasmimorpha longicaudata* and *Fopius arisanus* (Hymenoptera: Braconidae). The parasiticoicity level of *D. longicaudata* was higher (21.9 to 41.6%) compared to *F. arisanus* (16.1 to 38.9%) on all of the observed host plants.;Bio-ecology research on fruit flies (*Bactrocera carambolae*) (Drew and Hancock), and (*Bactrocera papayae*) (Drew and Hancock) were conducted for one year (February 2011 - January 2012) at three different areas: The Fruit Garden Mekarsari, Cileungsi, Bogor, Jatibarang, Indramayu and Pancoran Mas, Depok, all in West Java Province. The activities included studies on dispersal of fruit flies population *B. carambolae* and *B. papayae* in the field, and preferences tests of fruit flies in laboratory, and parasitic of parasitoids of fruit flies on star fruits, mangos, guava bol, water guavas and stone guavas. The studies of dispersal of Fruit flies population distribution were conducted at the above three named areas, using used bottles of mineral water as traps containing methyl eugenol (ME) hung on the host plants at 2 m height. The Fruit flies populations trapped in the used mineral water bottles were observed twice a week. The research preference of host plants for fruit flies were conducted at the laboratory using wind tunnel equipment, and the female of fruit flies were placed in the middle of flies cages and connected to the surrounding host fruit containers. Through the air flow from containers to the cages fruit flies were attracted to choose the most preferred host fruits. The measured variables included the trapped amount of fruit flies, damage of fruits, pupa number and sex ratios, and the observations were conducted daily. The studies of parasiticity of fruit flies parasitoid were conducted by

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