

WAHDANA MAULATIN FITHROTUS SHOLIHAN. Susceptibility Status of *Culex quinquefasciatus* Collected from Several Areas against Insecticide of Metofluthrin MC. Under supervision of UPIK KESUMAWATI HADI and SUGIARTO.

ABSTRACT

This research was aimed to determine susceptibility status of *Culex quinquefasciatus* from laboratory and field isolates against metofluthrin MC. Field isolates were collected from Bogor, Depok and Jakarta, and laboratory isolates historically originated from Penang (Malaysia). The test was conducted in Peet Grady Chamber (PGC) room. A total of 25 female mosquitoes (age 2-5 days) was confined in a mesh cage made of cloth. This cage was hanged at each corner of PGC. Metofluthrin MC was burned and placed in center of the room. The knockdown activity has been recorded every 5 minutes for maximum period of two hours. The concentration of metofluthrin MC were 0.0010%, 0.0050%, 0.0075%, 0.0090%, and 0.0150%, respectively. The result were analysed toward the knockdown values of KT50, KT90 and LC50. The result has shown that the most susceptible challenge of *Culex quinquefasciatus* with metofluthrin MC were based on KT50 the laboratory was the most susceptible toward metofluthrin MC, follow by Dramaga, Bogor, Depok, East Jakarta, and West Jakarta isolates. On the KT90 based were laboratory, Dramaga, Depok, Bogor, East Jakarta and West Jakarta isolates, respectively. The lethal concentration 50 (LC50) of metofluthrin MC against *Culex quinquefasciatus* at 60 minutes post contact gradually from the lowest were isolates of laboratory (0.00193%), Dramaga (0.00618%), Bogor (0.00766%), Depok (0.00977%), West Jakarta (0.04507%), and East Jakarta (0.63510%). The value of resistance ratio (RR) from the lowest were laboratory (1.00), Dramaga (3.20), Bogor (3.97), Depok (5.06), West Jakarta (23.35), and East Jakarta (329.08) isolates, respectively.

Key words: Metofluthrin, *Culex quinquefasciatus*, KT50, KT90, LC50, RR.

WAHDANA MAULATIN FITHROTUS SHOLIHAN. Status Kerentanan Nyamuk *Culex quinquefasciatus* dari Berbagai Daerah terhadap Insektisida Metofluthrin MC. Dibimbing oleh UPIK KESUMAWATI HADI dan SUGIARTO.

ABSTRAK

Penelitian ini bertujuan untuk menentukan status kerentanan nyamuk *Culex quinquefasciatus* isolat laboratorium dan lapangan terhadap metofluthrin MC. Isolat lapangan dikumpulkan dari Bogor, Depok, dan Jakarta, sedangkan isolat laboratorium berasal dari Penang (Malaysia). Pengujian dilakukan di dalam ruangan *Peet Grady Chamber* (PGC). Sebanyak 25 ekor nyamuk betina yang berumur 2-5 hari digantungkan dalam empat kurungan nyamuk. Nyamuk diletakkan pada setiap sudut ruangan *Peet Grady Chamber*. Metofluthrin MC yang telah dibakar diletakkan di tengah-tengah ruangan. Pengamatan dilakukan setiap lima menit hingga seluruh nyamuk mengalami kejatuhan atau selama dua jam. Jenis metofluthrin MC yang digunakan terdiri atas lima jenis konsentrasi yaitu 0.0010%, 0.0050%, 0.0075%, 0.0090%, dan 0.0150%. Hasil penelitian menunjukkan bahwa *Culex*

quinquefasciatus yang paling rentan terhadap metoflutrिन MC berdasarkan KT50 secara berturut-turut dari tertinggi adalah isolat laboratorium, Dramaga, Bogor, Depok, Jakarta Timur, dan Jakarta Barat, sedangkan berdasarkan KT90 adalah isolat laboratorium, Dramaga, Depok, Bogor, Jakarta Timur dan Jakarta Barat. Konsentrasi letal 50 (LC50) metoflutrिन MC terhadap *Culex quinquefasciatus* pada 60 menit pasca kontak secara berturut-turut dari terendah hingga tertinggi adalah isolat laboratorium (0.00193%), Dramaga (0.00618%), Bogor (0.00766%), Depok (0.00977%), Jakarta Barat (0.04507%), dan Jakarta Timur (0.63510%). Nilai ratio resistensi (RR) secara berturut-turut dari terendah hingga tertinggi isolat laboratorium (1.00 kali), Dramaga (3.20 kali), Bogor (3.97 kali), Depok (5.06 kali), Jakarta Barat (23.35 kali), dan Jakarta Timur (329.08 kali).

Kata kunci: Metoflutrिन, *Culex quinquefasciatus*, KT50, KT90, LC50, RR.