

THE EFFECTS OF QUERCETININ ON SURVIVAL AND
REPRODUCTIVITY OF *Drosophila melanogaster*

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The effects off ycpemethrin on survival and reproductivity of
Moina macrocopa. / Norazlin Ersad.

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THE EFFECTS OF CYPERMETHRIN ON SURVIVAL AND
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THE EFFECTS OF CYPERMETHRIN ON SURVIVAL AND
REPRODUCTIVITY OF *Moina macrocopa*

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ABSTRACT

A study was conducted to determine acute and chronic effects of cypermethrin on the survival and reproduction performance of *moina macrocopa* in a laboratory study. It is found that cypermethrin that cause 50% mortality (LC50) after exposure for 24h and 48h were $5.1 \times 10^{-1} \mu\text{g.L}^{-1}$ and $6.9 \times 10^{-2} \mu\text{g.L}^{-1}$, respectively. Chronic toxicity test was carried out using cypermethrin concentration at $4.0 \times 10^{-5} \mu\text{g.L}^{-1}$ and $1.0 \times 10^{-2} \mu\text{g.L}^{-1}$, for 14 day. The effect of cypermethrin on survival and reproduction were studied. Survivorship and average longevity days of *Moina macrocopa* were affected by exposure to $4.0 \times 10^{-5} \mu\text{g.L}^{-1}$ and $1.0 \times 10^{-2} \mu\text{g.L}^{-1}$. Exposure to cypermethrin had no effect on the time of the first reproduction but the number of offspring produced by a female during its entire life span was reduced at $4.0 \times 10^{-5} \mu\text{g.L}^{-1}$ and $1.0 \times 10^{-2} \mu\text{g.L}^{-1}$. The intrinsic rate of population growth and the generation time were not affected much by exposure to cypermethrin. The observed toxicity of cypermethrin to *Moina macrocopa* indicates that this substance may cause adverse effects on the aquatic zooplankton.

ABSTRAK

Kajian telah dijalankan untuk mengenalpasti kesan akut dan kronik cypermethrin terhadap daya hidup dan pembiakan *Moina macrocopa* dalam keadaan makmal. Kajian ini mendapati bahawa kepekatan cypermethrin yang menyebabkan 50% kematian (LC_{50}) selepas pendedahan selama 24 jam dan 48 jam ialah $5.1 \times 10^{-1} \mu\text{g.L}^{-1}$ dan $6.9 \times 10^{-2} \mu\text{g.L}^{-1}$. Ujian ketoksikan kronik telah dijalankan dengan menggunakan kepekatan cypermethrin sebanyak $4.0 \times 10^{-5} \mu\text{g.L}^{-1}$ dan $1.0 \times 10^{-2} \mu\text{g.L}^{-1}$ selama 14 hari. Kesan cypermethrin keatas kadar kemandirian dan pembiakan telah dikaji. Kadar kemandirian dan jangkahayat telah dipengaruhi oleh kepekatan cypermethrin pada $4.0 \times 10^{-5} \mu\text{g.L}^{-1}$ dan $1.0 \times 10^{-2} \mu\text{g.L}^{-1}$. Pendedahan terhadap cypermethrin pada kepekatan $4.0 \times 10^{-5} \mu\text{g.L}^{-1}$ dan $1.0 \times 10^{-2} \mu\text{g.L}^{-1}$ tidak memberi kesan pada hari pertama pembiakannya, tetapi mempengaruhi bilangan individu yang dihasilkan oleh seekor induk sepanjang jangka hayatnya berkurangan. Kadar peningkatan populasi dan masa generasi tidak banyak dipengaruhi oleh cypermethrin. Cypermethrin boleh membawa kesan negatif yang serius kepada organisma invertebrat akuatik.