

## Pengaruh pyriproxyfen terhadap pertumbuhan vektor malaria *An. subpictus* asal pulau laut Kotabaru, Kalimantan Selatan

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### Abstrak

Malaria masih merupakan masalah kesehatan masyarakat di Indonesia termasuk di Kalimantan Selatan dan merupakan reemerging disease di dunia. Spesies vektor malaria yang terpenting di pulau Kalimantan adalah *An. subpictus* Grassi, menjadi masalah karena sehubungan dengan terjadinya penebangan hutan mangrove. Penelitian ini bertujuan untuk melihat pengaruh Pyriproxyfen terhadap pertumbuhan, perkembangan dan mortalitas larva *An. subpictus*.

Metode penelitian adalah eksperimen skala laboratorium dimana variabel dependen adalah konsentrasi Pyriproxyfen (ppm) dan variabel independen adalah pertumbuhan dan perkembangan larva dan pupa, mortalitas larva dan pupa, abnormalitas dari pra-dewasa dan nyamuk dewasa. Analisis statistik adalah correlation regression dilakukan untuk melihat hubungan korelasi antara variabel dependen dan variabel independen. Pemeriksaan mikroskop dilakukan untuk melihat perkembangan yang abnormal dan penyebab terjadinya kematian pada stadium pra-dewasa.

Hasil penelitian adalah Pyriproxyfen sebagai suatu alternatif IGR, memberikan dampak kematian dan pengaruh pertumbuhan terhadap stadium larva ke pupa dan stadium pupa ke nyamuk dewasa. Makin tinggi konsentrasi Pyriproxyfen, makin tinggi kematian larva ( $p=0,012$ ), dan makin sedikit pupa yang terbentuk ( $p=0,007$ ), dan makin sedikit pupa yang mati ( $p=0,015$ ). Hasil analisis korelasi memperlihatkan hubungan positif antara Pyriproxyfen terhadap kematian larva ( $\text{Kematian Larva} = 22,29 + 0,4 * \text{Konsentrasi}$ ), hubungan negatif antara Pyriproxyfen terhadap pembentukan pupa ( $\text{Pembentukan Pupa} = 2,71 - 24 * \text{Konsentrasi}$ ), dan hubungan negatif antara Pyriproxyfen terhadap kematian pupa ( $\text{Kematian Pupa} = 2,86 - 0,44 * \text{Konsentrasi}$ ). Dari penelitian ini tidak ada pupa yang berhasil menjadi nyamuk dewasa. Pengaruh Pyriproxyfen terhadap pertumbuhan larva dan pupa adalah menggagalkan proses ecdysis yang menyebabkan kematian pada larva dan pupa.

*Malaria is still as a public health problem in Indonesia including South Kalimantan, and one of a reemerging disease. The important of species malaria vector in coastal area of Kalimantan is *An. subpictus* Grassi, this species become very important malaria vector due to an increasing deforestation of mangrove. The objective of this study is to describe the impact of Pyriproxyfen to the growth, development and mortality of *An. subpictus* larvae.*

The study design is an experimental in laboratory scale, where dependent variable is Pyriproxyfen concentration (ppm) and the independent variables are larvae and pupae growth and development, mortality of larvae and pupae, an abnormality of immature and adult stages. Statistical analysis, correlation regression were used to describe a correlation between dependent and independent variables. Microscopic examinations were carried out to examined development and describe any anomaly or abnormalities, and

caused of dead of the immature stages.

The results of this study showed that the Pyriproxyfen is very potential IGR, it were kill and hampered the development of larvae to pupae and also pupae to adults stages. The higher concentration of Pyriproxyfen, the higher rate of larva mortality ( $p=0,012$ ), and as lower pupa formed ( $p=0,007$ ), and lower rate of pupa mortality ( $p=0,015$ ). The correlation analysis found that relation between Pyriproxyfen to larva mortality is positive (mortality of larva= $22,29+0,4*\text{concentration}$ ), relation between Pyriproxyfen to pupa formed is negative (pupa formed= $2,71-24*\text{concentration}$ ), and relation between Pyriproxyfen to pupa mortality is negative (mortality of pupa= $2,86-0,44*\text{concentration}$ ). None of the pupa has been succeeds to emerged become adult stage (mosquito). The important effect of Pyriproxyfen is to the growth of larvae and pupae, it is hampered the ecdysis and at the end will cause death of larva and pupa.