

## ABSTRAK

Peredaran obat anti nyamuk bakar mengutamakan kemampuan membunuh nyamuk tanpa mengemukakan risiko bahaya dari zat kimia yang terkandung di dalamnya. Obat anti nyamuk bakar berbahan baku utama turunan senyawa *pyrethroid* berupa *allethrin* yang menghasilkan asap dan menyebabkan peningkatan radikal bebas yang dapat merusak bronkus. Penelitian ini bertujuan untuk mengetahui pengaruh variasi lama pemaparan asap obat anti nyamuk bakar terhadap gambaran histopatologi bronkus tikus (*Rattus norvegicus*) jantan galur wistar. Metode penelitian yang digunakan adalah *True Experimental* dengan desain *Post-Test Only Control Group Design*. Sampel tikus wistar jantan berjumlah 24 ekor yang dibagi menjadi 4 kelompok, yaitu kelompok normal tanpa perlakuan, kelompok perlakuan 1, 2, dan 3 yang dipaparkan asap obat anti nyamuk bakar 5 jam/hari, 7 jam/hari, dan 9 jam/ hari selama 21 hari. Penilaian kerusakan histopatologi bronkus menggunakan modifikasi skoring Mordue. Hasil uji *Kruskal – Wallis* didapatkan pengaruh asap obat anti nyamuk bakar terhadap perbedaan gambaran histopatologi bronkus pada kelompok normal dan perlakuan ( $p < 0,001$ ). Pada uji *pos-hoc Mann - Whitney* menunjukkan perbedaan signifikan pada beberapa kelompok ( $p < 0, 05$ ). Kesimpulan penelitian ini adalah terdapat perbedaan kerusakan histopatologi bronkus tikus yang dipaparkan asap obat anti nyamuk dengan waktu yang bervariasi, dengan kerusakan terberat terjadi pada kelompok yang dipaparkan asap obat anti nyamuk bakar selama 9 jam/hari.

*Kata Kunci : obat anti nyamuk bakar, allethrin, histopatologi bronkus, tikus wistar*

## ABSTRACT

The distribution of anti-mosquito coils prioritizes the ability to kill mosquitoes without raising the risk of danger from the chemicals contained in them. The main raw material for anti-mosquito burns is compound derivatives *pyrethroid* form *allethrin* which produces smoke and causes an increase in free radicals that can damage the bronchi. This study aims to determine the effect of variations in the length of exposure to the smoke of anti-mosquito coils on the histopathological picture of rat bronchi (*Rattus norvegicus*) Wistar strain male. The research method used is *True Experimental* by design *Post-Test Only Control Group Design*. The sample of 24 male Wistar rats were divided into 4 groups, namely the normal group without treatment, treatment groups 1, 2, and 3 which were exposed to anti-mosquito burnt smoke for 5 hours/day, 7 hours/day, and 9 hours/day for 21 days. Assessment of bronchial histopathological damage using *modified Mordue scoring*. Test results *Kruskal – Wallis* It was found that the effect of anti-mosquito coil smoke on differences in bronchial histopathological features in the normal and treatment groups ( $p < 0.001$ ). On test *post-hoc Mann - Whitney* showed significant differences in some groups ( $p < 0.05$ ). The conclusion of this study was that there were differences in histopathological damage to the bronchi of rats exposed to anti-mosquito smoke for varying times, with the heaviest damage occurring in the group exposed to anti-mosquito smoke for 9 hours/day.

*Keywords: anti-mosquito coils, allethrin, bronchial histopathology, Wistar rats*