

ABSTRACT

THE EFFECT OF SMOKE BURNING ORGANIC MATERIAL EXPOSURE IN DIFFERENCE DURATION ON THE CORNEAL HISTOPATHOLOGY WHITE RATS (*Rattus norvegicus*) MALE *Sprague dawley* STRAIN

By

FADIA NADILA

A wildfire is one of the source of smoke burning organic material. In Indonesia, such as in Sumatera often occurs wildfire caused by human activities. A wildfire brings out smoke that can affect life. The smoke consist of carbon monoxide (CO), particulate matter (PM), nitrogen oxide (NO_x), sulfur dioxide (SO₂) and volatile organic compounds (VOCs) which can irritate eyes. The purpose of this study is to find out the effect of smoke burning organic material exposure in difference duration on the corneal histopathology white rats (*Rattus norvegicus*) male *Sprague dawley* strain.

This study used 25 rats and 8 10 weeks aged white male rats (*Rattus norvegicus*) from *Sprague dawley* strain, which divided into 5 groups randomly and treated for a week. Aquadest was given to K(-), smoke burning organic material exposure was given to P2 for 1 hour, P2 for 2 hours, P3 for 3 hours and P4 for 4 hours.

The result of this study showed the average of corneal layers epithellium of K(-)=5; P1=5.6; P2=5.8; P3=6; P4=6.8. The data was processed by Kruskal Wallis test and there is no statistically significant result with $p=0.552$ ($p>0.05$). The conclusion of this study, there is effect in difference duration effect of smoke burning organic material exposure on the corneal histopathology white rats (*Rattus norvegicus*) male *Sprague dawley* strain, but not statistically significant result.

Keywords : corneal layers epithelium, difference duration exposure, corneal histopathology, smoke burning organic material, wildfire.