

## ABSTRACT

### THE EFFECT OF DIFFERENT DURATION FROM ORGANIC MATERIAL BY SMOKE BURNING EXPOSURE TO TRACHEA HISTOPATHOLOGY IN MALE RATS *SPRAGUE DAWLEY* STRAIN

By

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The widespread forest fires are problem not only in Indonesia but also in Southeast Asia. Smoke of the forest fires contains several substances such as carbon monoxide, particulate matter, sulfur dioxide, formaldehyde, akrolein, benzene, nitrogen oxides and ozone that when exposed can lead to various lung disorders and respiratory system such as acute respiratory infections, bronchitis, asthma exacerbations and death. The purpose of this study is to determine effect of different duration from organic material by smoke burning exposure to trachea histopathology in male rats *Sprague dawley* strain. This is laboratory experimental with post test only control group design. In this study, 25 male rats are divided randomly into 5 groups and treated for 7 days. K(-) is not given any exposure, P1, P2, P3 and P4 are given smoke exposure at 60 minutes/day, 120 minutes/day, 180 minutes/day, 240 minutes/day. The result showed that in Oneway Annova test for goblet cell is found a significant difference with  $p=0.001$  ( $p<0.05$ ) and in Kruskal Wallis test for silia is found a significant difference with  $p=0.001$  ( $p<0.05$ ). There is an effect of different duration from organic material by smoke burning exposure to trachea histopathology in male rats *Sprague dawley* strain.

**Keywords:** difference duration exposure, organic material, smoke, trachea