

17th International Conference on

Environmental Toxicology and Ecological Risk Assessment

36th International Conference on

&

Environmental Chemistry & Water Resource Management

September 24-25, 2018 | Chicago, USA

Risk quotient, IgA and control of benzene in the home industry of shoe-maker at Surabaya

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Background: Benzene as chemicals have long been known to be hazardous to health due to the nature of carcinogens. Workers at the home industry of shoe-maker exposed by benzene from glue used during the work process. Therefore it takes a risk assessment to assess how great the risk of benzene in the workplace and how to control it. The purpose of this study has analyzed the relationship between the existence of ventilation and IgA to Risk Quotient (RQ) worker in shoe home industry Romokalisari of Surabaya.

Methods: Type of study was observational, cross-sectional analytics with 10 workers as the total population. Data analysis was using cross tabulation to know the frequency ventilation, IgA and Risk Quotient (RQ) that obtained from the value of Intake benzene non-carcinogen (Ink), benzene concentration in work environment (C), inhalation rate (R), length of work/day (tE), working frequency/year (fE), duration of work (Dt), worker's weight (Wb) and average time period (tavg). To know all analysis relationship between variable was using Chi-Square Test and Prevalence Risk (PR).

Result: There was a relationship between the existence of ventilation with the Risk Quotient (RQ) in the worker with meaning that the absence of ventilation has a risk 9 times greater for the risk of non-carcinogen health effects. For analyzed the relationship between RQ and IgA, Prevalence Risk (PR) showed greater than 1 ie 1,4000, which mean that the workers with unsafe non-carcinogenic health risks ($RQ > 1$) 1,4 times have a risk of abnormal IgA in their the blood.

Conclusion: Based on the result, it showed that both ventilation and IgA have a relationship with the Risk Quotient (RQ). For workers, it was recommended to making good ventilation in the workplace and consuming CYP2E1 enzyme contained in beef liver and salmon to lower benzene levels in the body.

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