

**ABSTRACT**

**THE EFFECTS OF WOOD DUST LIPOPOLYSACCHARIDE (LPS) ENDOTOXIN LEVEL ON INCREASING INTERFERON GAMA (IFN- $\gamma$ ) IN BLOOD SERUM AND DECREASING LUNGS FUNCTION OF SURABAYA WOOD PROCESSING PLANT**

Wood dust containing LPS (lipopolysaccharide) endotoxins can cause inflammation of the respiratory tract, decreased lung function, pneumonitis and affects serum levels of INF- $\gamma$ . The purpose of this study was to analyze the effect of endotoxin LPS to increased levels of IFN- $\gamma$  and decreased lung function of workers at the sawmill wood processing factories. Researchers study design using analytic observational prospective longitudinal study. The study sample consisted of 11 workers in the wood processing plant Margomulyo Surabaya. Techniques of data collection is done by conducting interviews, personal dust measurement, measurement of endotoxin private, workers took blood samples and perform spirometry tests. Blood serum taken aims to determine the level of IFN- $\gamma$  and lung function measured aims to determine the condition of the lungs of workers who are both measured at the time before and after work. IFN- $\gamma$  levels and lung function is the dependent variable. Meanwhile, private endotoxin levels as independent variables. Age, duration of work activity and smoking habits as a confounding variable.

The findings of this study indicated that the average age of workers was 27.45 years old and most of them have worked for 5.73 years, and 64% of workers are light smokers. After working for 8 hours, found the average exposure of private wood powder 2.93 mg/m<sup>3</sup> and average personal endotoxin levels was as much as 91.00 EU/m<sup>3</sup>. average of IFN- $\gamma$  in the blood serum of workers is 7.64 mg/l, or about 81.8% while the decline in FVC and FEV1, respectively 63.6% and 81.8%. Personal endotoxin levels did not have an effect on increasing blood serum IFN- $\gamma$  (multiple regression test,  $p > 0.05$ ), but have an effect on decreased lung function (multiple regression test,  $p < 0.05$ ).

**Keywords:** sawdust, LPS endotoxin, lung function, interferon gamma (IFN- $\gamma$ ), wood processing workers.