

## ABSTRACT

**THE EXPOSURE EFFECT OF RICE MILL DUST OF LIPOPOLYSACCHARIDE (LPS) ENDOTOXIN CONTENT ON THE INCREASE OF SERUM C-REACTIVE PROTEIN (C-RP) AND THE DECREASE OF PULMONARY FUNCTION OF RICE MILL OPERATOR**

One of the agents which are contained in rice dust and become a trigger of inflammation at the respiratory canal is LPS endotoxin. The purpose of this study was analyzing the effect of the increase of LPS endotoxin toward the increase of C-RP serum and the decrease of LUNGS function of rice mill operator. This study was an analytical observational study by utilizing the design of longitudinal prospective study. The samples of this study were 11 operators of rice mill in Palur Kebonsari village, Madiun district. The techniques of data collection were interviewing, measuring the personal dust, measuring the personal LPS endotoxin, measuring the lungs function by utilizing spirometer and the content of C-RP before and after working. The dependent variables of this study were the content of C-RP and lungs function. The independent mean variable of this study was the content of LPS endotoxin and Age, years of service served, and smoking habit as confounding variable. This study showed that the average of the worker's age was 35,64 years old, the average of the work time was 5 years, the 63,6% of them were medium smokers. After working in 8 hours, it was obtained the content of personal dust that was 1,47 mg/mand the average of the content of LPS endotoxin was 91,1 EU/ m<sup>3</sup>. The increase of C-RP serum content of rice mill operator was 0,94 mg/L or about 45,5 %. The decrease mean of FVC and FEV<sub>1</sub> was 63,6% and 45,5% of each. Therefore, It is concluded that LPS endotoxin containing rice mill dust affected toward the increase of C-RP serum content and the decrease of lungs function (multiple regression test in  $p < 0,05$ ). Hence, it is be concluded that the increase of LPS endotoxin in rice dust affects the increase of C-RP serum content and decrease of pulmonary function.

**Keywords:** *grain dust, LPS endotoxin, pulmonary function, C-Reactive Protein (C-RP), the rice mill operator*