

ABSTRACT**Effect Inhaling of Limestone Dust Exposure on Increased Level of IL-8 Blood Serum and Pulmonary Function Decline to Workers of Limestone Mining Industry**

The composition of limestone containing crystalline silica by 1-20% when exposed in a long time (time and average weight measurement) with a weight up 2-5 mg/m³ can cause an inflammation reaction that is increase of IL-8 serum and will be followed with pulmonary function decline. The Method was analytical observation with prospective longitudinal study. Before and after works for measuring of IL-8 serum increase and pulmonary function decline between population exposed by limestone dust (study group) and population not exposed by limestone dust (comparison group). Data was collecting on 18 respondents consist of 9 study samples workers at mining industry in Wangun Village and 9 samples working at semanding district office were taken randomly and inclusion criteria had been matched with the study group. Meanwhile, for measured inhaling of dust exposure used PDS, pulmonary function measured (FVC and FEV1) used a spirometer (Spirolab III), and used ELISA technique for measurement levels of IL-8 serum. Characteristics respondent such age, years of service, and smoking habits collected by questioner. Mikrotoa and bathroom scales for measured BMI. Result by multiple linear regression showed inhaling of limestone dust exposure was significantly to increasing level of IL-8 serum ($p < 0.05$) but it didn't cause decline on pulmonary function. Physical activity factors and differences of individual immunity can influence the symptoms of respiratory disease caused by increased IL-8 serum so, the decrease in pulmonary function after 8 hours of work (cross-shift) does not occur.

To require use of Personal Protective Equipment (PPE), Air Purifying Respirator Non power types (NAPR) N Series (Not resistant to oil) to protection from dust produced by process likes crushing, quarrying, grinding, bricking and use a wet method on mining activities. Be required a regular monitoring for evaluate worker's pulmonary function changes by the owner of mining.

Keywords : limestone dust, IL-8 blood serum, pulmonary function, workers of limestone mining industry.