ABSTRACT

Workers of calcium company are very risky to be exposed by calcium dust that is irritant to the mucous membrane of respiratory track. The irritant mucous membrane causes inflammation and the excess of mucous production so that it can lead obstruction of the respiratory track. The obstruction of respiratory track makes the workers to be risky to get lung function disorder. The objective of this research is to learn lung function status of the workers in Perusahaan Kapur Gamping Guwo Lowo and the factors that can influence it.

This research was a kind of descriptive research confirmed by cross sectional design. The sample used in this research was the total population, or all permanent workers of the company. This research was conducted by using questionnaires, observation and measurement of total dust concentration and lung function. The data was analyzed by using linear regression test.

The result of lung function measurement confirmed that among 16 workers there are 2 (12,5%) workers who got lung function obstruction disorder. There were no workers who got lung function disorder. The average age of the workers was 41,94 ± 10,963 years old. There were 3 workers included in mild obesity. The workers who smoked were 87,5%. The workers who always used respiratory protective equipment were 43,75%. The concentration of dust was above the threshold limit value, in flushing area 146,76 mg/m$^3$, sieving area 46,63 mg/m$^3$ dan packing area 3,82 mg/m$^3$. The statistic result confirmed that the most influencing variable to %FEV$_1$ value was dust exposure dose and the most influencing variable to %FVC value was smoking dose.

It is highly recommended for the company management to provide better respiratory protective equipment to the workers that can reduce the amount of dust inhaled by respiratory track. Besides, the management should actively conduct directive health counseling to the workers to reduce smoking habit and to wear respiratory protective equipment properly while working time.

Keywords: calcium dust, lung function status, dust exposure dose, smoking dose.