

**ABSTARCT****Effect Of Exposure Wood Burning Smoke Against Enzymes Activity Serum SOD, GPx And Health Complaints Of Worker At Home Industry Petis In Desa Sekardangan Kabupaten Sidoarjo**

Nitrogen dioxide and formaldehyde gases are the chemical substance of wood burning product affect to respiratory disorders. The chronic exposure it are gases effected cellular influence enzymes activity serum SOD and GPx. The aim of this study was to analyze the effect of exposure to nitrogen dioxide and formaldehyde gases against serum SOD, GPx and health complaints of worker in home industry petis. The design of this study was observational analytic with prospective longitudinal study. The study sites of home industry petis and government Sekardangan office. The population of this study was 2 population that were the workers of home industry petis and the workers of government Sekardangan office with some inclusive criteria that worked at male, not getting sickness asthma and willing to participate in this study. Sample size was 12 workers that was taken by simple random sampling. The analysis result showed that nitrogen dioxide and formaldehyde gases in air effected of enzymes serum SOD and GPx decide exposure group and not exposed (independen t test,  $p < 0,05$ ). The effect of nitrogen dioxide and formaldehyde gases in air effected enzymes activity serum SOD and GPx (linier regression,  $p < 0,05$ ), and health complaints was effected by nitrogen dioxide and formaldehyde gases (logistic regression,  $p \leq 0,05$ ). It is concluded that exposure of nitrogen dioxide and formaldehyde gases effect increasing of enzymes activity serum SOD and GPx of worker at home industry petis. Otherwise, there is effect of exposure of nitrogen dioxide and formaldehyde gases to health complaints. It is suggested that need work rotation for workers have period of more than 5 years, workers should eating vegetables and fruits that contain vitamin C and E.

*Keywords : nitrogen dioxide and formaldehyde gases, wood burning smoke, serum SOD and GPx, health complaint.*