Analisis konsentrasi diesel partikulat 2.5 um terhadap stress oksidatif dan penurunan fungsi paru pada penguji mekanis di UP Pengujian Kendaraan Bermotor (PKB) Ujung Menteng dan Cilincing tahun 2018 = Analysis of diesel particulate matter 2.5 um related to oxidative stress and lung function decline on mechanic at vehicle testing center Cilincing and Ujung Menteng 2018

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Abstrak

Diesel Particulate Matter DPM adalah zat yang dianggap menjadi salah satu faktor risiko dari perkembangan penyakit degeneratif seperti kanker IARC, 2012, kardiovaskular, dan penurunan fungsi paru melalui mekanisme stress oksidatif. Stress oksidatif dianggap sebagai mekanisme perantara dari pajanan partikulat menuju dampak kesehatan.

Penelitian ini dilakukan untuk melihat hubungan konsentrasi biomarker stress oksidatif yaitu malondialdehyde MDA dan penurunan fungsi paru dengan pajanan DPM 2.5 pada kelompok terpajan penguji mekanis di UP PKB dan kelompok pembanding. Pengukuran DPM 2.5 dilakukan menggunakan sioutas cascade impactordan filter berjenis quartz.

Analisis MDA dilakukan dengan metode Wills 1996 melalui sampel urin responden, sedangkan penurunan fungsi paru dideteksi melalui tes spirometri. Hasil menunjukkan pajanan DPM 2.5 secara signifikan berhubungan dengan peningkatan konsentrasi MDA dan penurunan fungsi paru-paru, dengan derajat keeratan sedang hingga kuat r= 0,438; r=-0,629.

.....Diesel Particulate Matter DPM 2.5 m is considered to be one of the risk factors for degenerative diseases such as cancer IARC, 2012 , cardiovascular, and declined lung function through oxidative stress mechanism. Oxidative stress is considered as an intermediary mechanism from particulate exposure to health effects. This study was conducted to see the correlation of oxidative stress biomarker which is malondialdehyde MDA and decline of lung function with DPM 2.5 exposure in exposed group and non exposed group. Sampling DPM 2.5 was performed using sioutas cascade impactor and quartz type filter.

MDA analysis was done by Wills 1996 method through respondent 39s urine sample, whereas pulmonary function decline was detected through spirometry test. The results show that DPM 2.5 exposure was significantly associated with elevated MDA concentrations and declined lung function, with moderate to stronger degree r 0.438 r 0.629.