

ABSTRAK

Penggunaan timbal dalam bahan bakar bertujuan untuk meningkatkan angka oktan dan sebagai zat tambahan yang mampu mencegah ketukan pada kendaraan bermotor. Disamping manfaat tersebut, timbal sangat berbahaya bagi kesehatan. Pekerja bengkel mempunyai resiko tinggi terkena paparan timbal dari emisi gas kendaraan bermotor. Salah satu faktor yang mampu meningkatkan akumulasi dari paparan timbal adalah usia, masa kerja, lama kerja, dan kebiasaan merokok. Tujuan dari penelitian ini untuk mengetahui kadar timbal dalam spesimen urine dan rambut pekerja bengkel motor di wilayah Surabaya Timur. Penelitian ini merupakan penelitian deskriptif yang dilakukan di kampus Politeknik Kesehatan Surabaya jurusan Teknologi Laboratorium Medis di jalan Karangmenjangan No.18A dan di Balai Standardisasi dan Pelayanan Jasa Industri (Baristand) pada bulan Oktober 2022-Juni 2023. Sampel penelitian ini adalah urine dan rambut pekerja bengkel motor di Kecamatan Gubeng Kota Surabaya sebanyak 15 responden yang diambil secara *purposive sampling*, dan dianalisis kadar timbal menggunakan spektrofotometer serapan atom. Hasil penelitian menyatakan dari 15 responden yang diteliti memiliki kandungan timbal dalam tubuh. Kadar timbal dalam spesimen urine terendah yaitu 0,00022 $\mu\text{g/mL}$ dan tertinggi yaitu 0,00105 $\mu\text{g/mL}$. Sehingga kadar timbal dalam spesimen urine dibawah nilai ambang batas yaitu 0,15 $\mu\text{g/mL}$. Pada spesimen rambut kadar timbal terendah yaitu 0,12 $\mu\text{g/g}$ dan tertinggi yaitu 2,245 $\mu\text{g/g}$, sebanyak 12 responden memiliki kadar timbal dibawah nilai ambang batas dan 3 responden lainnya memiliki kadar timbal melewati nilai ambang batas yaitu 0,007-1,17 $\mu\text{g/g}$.

Kata Kunci : Pekerja bengkel, Timbal, Spektrofotometer serapan atom, Urine, Rambut

ABSTRACT

The use of lead in fuel aims to increase the octane rating and serves as an additive that can prevent knocking in motor vehicles. Despite these benefits, lead is hazardous to health. Workshop workers have a high risk of lead exposure from motor vehicle gas emissions. One of the factors that can increase the accumulation of lead exposure is age, years of service, length of work, and smoking habits. The purpose of this study was to determine the level of lead in urine and hair specimens of motorcycle workshop workers in East Surabaya. This research is a descriptive study conducted at the Surabaya Health Polytechnic campus majoring in Medical Laboratory Technology on Karangmenjangan Street No.18A and at the Industrial Services Standardization and Services Center (Baristand) in October 2022-June 2023. The samples of this study were urine and hair of motorcycle workshop workers in Gubeng Subdistrict, Surabaya City as many as 15 respondents taken by purposive sampling, and analyzed for lead levels using an atomic absorption spectrophotometer. The results of the study stated that of the 15 respondents studied had lead content in the body. The lowest urine specimen lead level was 0,00022 $\mu\text{g/mL}$ and the highest was 0,00105 $\mu\text{g/mL}$. So that the lead level in urine specimens is below the threshold value of 0,15 $\mu\text{g/mL}$. In hair specimens, the lowest lead content was 0,12 $\mu\text{g/g}$ and the highest was 2,245 $\mu\text{g/g}$, 12 respondents had lead levels below the threshold value and the other 3 respondents had lead levels that exceeded the threshold value of 0,007-1,17 $\mu\text{g/g}$.

Keywords : Workshop worker, Lead, Atomic absorption spectrophotometer, Urine, Hair