

**DISTRIBUTION OF SELECTED HEAVY METALS  
CONCENTRATION IN TOTAL SUSPENDED PARTICULATE  
(PM<sub>10</sub>) DURING AND AFTER HAZE EPISODE**

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**JULY 2016**

## ABSTRACT

### **DISTRIBUTION OF SELECTED HEAVY METALS CONCENTRATION IN TOTAL SUSPENDED PARTICULATE (PM<sub>10</sub>) DURING AND AFTER HAZE EPISODE**

A severe haze episode has swept across the Malaysia ambient air starting late of June until October 2015. This has caused the API indexes rose sharply all over the country. By considering there was no pollutant contributed by any industries in the area, the study was conducted to evaluate the effects of haze episode on the air quality of the selected rural area. The objectives of this study were to measure the gravimetric mass of total suspended particulate (PM<sub>10</sub>) and the concentration of Cu, Ni, Pb, Fe, Mn, Zn, and Cr in the particulate samples and also the API Sub-index during 10 days of the sampling period. The air particulate samples were collected in UiTM Jengka, Pahang by using High Volume Air Sample (HVAS) in two sampling periods, during and after haze episodes. The standard acid digestion method was applied to treat all the samples. The concentrations of heavy metals were analyzed by using Inductively Coupled Plasma – Optical Emission Spectroscopy (ICP – OES). The API Sub-index was calculated based on the standard method applied by DOE of Malaysia. The results showed differences in TSP weight between the two sampling times, which ranged between 28.4 to 132.9  $\mu\text{g}/\text{m}^3$  during haze episode and 17.3 to 34.7  $\mu\text{g}/\text{m}^3$  after haze episode. Meanwhile, the concentrations of the studied metals did not show any differences between the two sampling times, which indicate the various other particulate components have contributed to the weight of the PM<sub>10</sub>. The highest API index was recorded as 89 which classified as the moderate level of air pollution. The results obtained in this study clearly showed that the haze event has influenced the significant increases in TSP mass of the ambient air but not the concentration of heavy metals.

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