Abstract

Air pollution is caused by various anthropogenic activities, i.e., industrial emergence, urbanization, forest burning and vehicular exhausts. This research project is composed for the basic research analysis related to the air pollution in the specific bus terminals in the study areas of Peshawar and Lahore. The bus terminals selected in Peshawar were Haji camp bus terminal and Kohat bus terminal, whereas, the bus terminals selected from Lahore were, Niazi bus terminal and Badami Bagh bus terminal. As Particulate matter10 (PM_{10}) is one of the major air pollutant, which concentration is exceeding than the World Health Organization (WHO) guidelines values and National Environmental Quality Standards (NEQs) values throughout the major cities of Pakistan. Therefore, the collection of concentrations of PM_{10} sampling based on 24 hours duration a high-volume Reference Ambient Air Sampler North American manufacturer F&J Specialty Product, was used. The sampling period was divided into two seasons, i.e., summer from June to August and winter season from November to January, respectively. The mean concentrations of PM_{10} in the Peshawar section of Haji camp bus terminal and Kohat bus terminal were 413 $\mu g/m^3$ and 396.3 $\mu g/m^3$ in summer whereas, in winter season concentration were 492.5 $\mu g/m^3$ and 468.5 $\mu g/m^3$. Similarly, the mean PM_{10} concentrations for the Section Lahore, Niazi bus terminal and Badami Bagh bus terminal were 478.2 $\mu g/m^3$ and 531.8 $\mu g/m^3$ in summer whereas, in winter season concentrations were 708 $\mu g/m^3$ and 784 $\mu g/m^3$ respectively. Furthermore, the collected samples were analyzed for the concentrations of Lead bounded to the PM_{10}. For this purpose the analysis were conducted via Atomic absorption spectrometer (Perkin Elmer, AAS-PEA-700). The mean concentrations of Pb in the Peshawar section study area were 532.2 ng/m^3 in Haji camp bus terminal and 489.1 ng/m^3 were in Kohat bus terminal in summer season, whereas, for the winter season the mean concentrations were 732.7 ng/m^3 and 692.9 ng/m^3 respectively. The mean concentration of Pb in the Lahore section of the study area were 624.9 ng/m^3 in Niazi bus terminal and 674.9 ng/m^3 in Badami Bagh bus terminal in summer season, whereas, in winter season the mean concentrations were 837.6 ng/m^3 and 910.5 ng/m^3 respectively. The statistical analysis of correlations showed that the concentrations of PM_{10} collected at all sampling sites are positively correlated to the concertation of Pb and vehicular counts. The correlation value ranged from 0.353 to 0.964 whereas the values of correlation in Peshawar section of study area are a bit less positive as compare to the Lahore.

Furthermore, the results of Lahore as compare to Peshawar shows more positive correlation in both the summer and winter season. The statistical analysis of ANOVA showed the significant (0.05) difference in all the four selected study sites in both the summer and winter seasons