

Annual and Seasonal Variations in Air Quality Index of the National Capital Region, India

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Abstract : Air Quality Index (AQI) is used as a tool to indicate the level of severity and disseminate the information on air pollution to enable the public to understand the health and environmental impacts of air pollutant concentration levels. The annual and seasonal variation of criteria air pollutants concentration based on the National Ambient Air Quality Monitoring Programme has been conducted for a period of nine years (2006-2014) using the AQI system. AQI was calculated using IND-AQI methodology and Maximum Operator Concept is applied. An attempt has been made to quantify the variations in AQI on an annual and seasonal basis over a period of nine years. Further, year-wise frequency of occurrence of AQI in each category for all the five stations is analysed, which presents in depth analysis of trends over the period of study. The best air quality was observed in the Noida residential area, followed by Noida industrial area during the study period; whereas, Bulandshahar industrial area and Faridabad residential area were observed to have the worst air quality. A shift in the worst air quality from winter to summer season has also been observed during the study period. Further, the level of Respirable Suspended Particulate Matter was found to be above permissible limit at all the stations. The present study helps in enhancing public awareness and calls for the need of immediate measures to be taken to counter-effect the cause of the increasing level of air pollution.

Keywords : air quality index, annual trends, criteria pollutants, seasonal variation

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