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RESEARCH ARTICLE

Air quality index for Dindigul town

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SUMMARY: Leather industries in Dindigul town, in the state of Tamil Nadu offer a unique opportunity for the study of environmental problems. In the present study, an effort has been made to study the air quality in terms of suspended particulate matter (SPM), respirable particulate matter (RPM), sulphur dioxide (SO_2) and oxides of nitrogen (NO_x) at three different locations representing tanneries, commercial -cum-traffic and residential areas of Dindigul town bimonthly during summer and winter seasons. The present study indicated the potential source for fluctuation of SPM, RPM, SO_2 and NO_x in the study region. Air quality index (AQI) for the town had been calculated and the pollution in the town had the order of site2 > site3 > site1. The oak ridge air quality index (ORAQI) was used to evaluate the relative ranking of overall air quality at different study locations of the town. The data so obtained were discussed as to the present status of ambient air quality of the study region.

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Leather industry has been categorized as one of the highly polluting industries and there are concerns that leather making activity can have adverse impact on the environment (Kanagaraj *et al.,* 2006). Though leather tanneries ensure the economic development but certainly at the risk of environmental pollution. The continuous discharge of pollutants create a problem where nature no longer is able to disperse, absorb or dispose off unwanted residue in the natural sinks of the environment. This demands for making provision and efficient use of pollution control measures to minimize the adverse environmental impacts due to emission of pollutants from various industries.

The relationship of man with the environment is necessarily the symbiotic equilibrium between the two which must be maintained at all costs. But with rapid population growth, industrialization more and more demands are made on the limited sources of energy and materials. Rapidly growing cities, more traffic load, reliance on outdated industrial processes, growing energy consumption, lack of appropriate industrial zoning and environmental regulations and poor implementation of control measures have contributed to reduced air quality (CPCB, 1993). Poor air quality can manifest itself aesthetically (as a displeasing odour, for example) and can also result in harm to plants, animals peoples and even damage to objects. Pollution of air not only causes health effects to human beings, it also interferes with functioning of natural ecosystems.

Due to rapid industrial growth, Dindigul town became the industrial zone of Tamil Nadu. Industrial growth gradually deteriorated the environment quality of that area. Now it is high time to know the status of ambient air quality for making proper planning for present and future growth of industries. An attempt has been made to monitor the ambient air quality of the Dindigul town to asses the pollutional load of the area for planning the environmental management to abate and control the air pollution apart from a discussion of the various air pollutants and their implications.

EXPERIMENTAL METHODOLOGY

Monitoring town, Dindigul :

Dindigul is the interior region of Tamil Nadu.