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## AIR POLLUTION IN JAMMU CITY



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**Abstract:** The aerial environment of the earth has been increasingly interfered by the activities of human beings and virtually it has become the dumping site for toxic materials produced by industrial, vehicular and urban emissions. We have introduced several toxic materials to our environment at a tremendous speed that has changed its physico-chemical characteristics. The assumption that the “nature will take care of pollutants” do not hold good anymore since the pollutants at present vary greatly in their quality as well as quantity. Throughout Asian air pollution is a significant threat to human health and the environment and our city is not the exception to this. Use of fossil fuel in transport, industrial, commercial and household sector contributes significantly towards the air pollution. Solid waste disposal and its open burning also add air pollutants. In addition to gases, particles coming from a variety of sources—vehicles, factories, construction sites, tilled fields, un-paved roads, stone crushers, burning of wood and fossil fuels also pollute the air. An average urban vehicle releases approximately 30-40 mg of particulate matter per mile travel. Forest fires and the contribution of biomass fuels also add pollutants.

**Keywords:** Air Pollution, aerial environment, factories, oxygen-containing.

### INTRODUCTION

The air is a precious source for the sustenance of life on this planet and it is estimated that a normal human being breathes in and out about once in every 4 seconds, 16 times a minute, 960 times an hour—nearly 8.5 million times a year. We breathe nearly 4 million liters (1 million gallons) of oxygen-containing air every year from the Earth's atmosphere. Therefore the quantum of pollutants that enter our body through respiration would be manifold in comparison to those taken in through polluted water as contaminated food as the average per day requirement of food (1.5kg) and water (2.5kg) is less than the air (15kg) for an adult male.

Jammu, the city of temples, has now become the city of traffic congestion and polluted air. In the absence of major industries in the Jammu, vehicular emission has been regarded as the major source of pollution and is assuming an alarming proportion due to an increase in the number of vehicles. According to one report, the number of vehicles in Jammu which were 3000 in 1971 has now touched the figure of 6,00,000. According to an economic survey report (2007), the number of vehicles per 100km of length of state road stands at 1575 vehicles for all roads and 3232 vehicles for roads maintained by PWD. In Jammu district, the density of vehicles is very high i.e. 10582 vehicles/sq.km. of area followed by Kathua with 699, Udhampur with 232, Rajouri, Poonch and Doda with 134, 92 and 10 respectively. District Jammu is having 17624 vehicles per Lakh of population followed by Srinagar (9836 vehicles), Kathua (2879 vehicles) and Budgam district (2200 vehicles). Doda district has the lowest density i.e., 143 vehicles/lakh of population.

So far no systematic data is available for Jammu city regarding the air pollution level. However, some studies have been carried out in the different zones (residential, commercial and traffic crossing) to get some idea of the pollution level of the city. From each zone, sampling was done at three selected sites on a monthly basis for two years to derive the average concentration of pollutants. It has been observed that the concentration of the gases (SO<sub>2</sub> and NO<sub>2</sub>) is always higher in the commercial areas and traffic crossings in comparison to the residential areas. Kachi Chawni and Bikram Chowk have been observed to be the highly polluted sites in the city (table 1). Use of generators, narrow and poorly maintained roads, slow speed of vehicles with low gear and frequent use of clutch and breaks due to hilly terrain, old and poorly maintained vehicles, presence of high buildings on the sides of the road, mismanagement of the traffic etc., contribute towards the higher concentration of pollutants in these areas. Moreover, a very small percent of diesel vehicles (8.4%) of the different categories plying on the roads of the Jammu have been reported to have smoke density under permissible limits (65 hartidge unit) while the majority of them (91.6%) have smoke density higher than the permissible limits. The study also indicated that the concentrations of gaseous pollutants at present are within the permissible limits, but they have an increasing trend (table 2). The concentration of SPM has been recorded above the permissible limits at all the places of different zones. Comparison of the data of two years also revealed that the value of the air quality index (AQI) has changed which means that the quality of air is changing. Areas with light air pollution have changed to moderate air pollution and those

with moderate to heavy air pollution.

Air pollution poses ongoing challenges to human health and environmental quality. The amount of pollutant entering our body through the exchange of polluted air is increasing and affecting our health. High levels of air pollution have increased rates of bronchitis, asthma, lung cancer, and infant mortality. Due to indoor and outdoor air pollution about 3 million premature deaths occurs in world. Highest number is assessed to occur in India (approximately 2 million according to one report). Scientists warn that, if current trends continue, by 2025 three times as many people in Asia will suffer from poor health due to air pollution as did in 1990.

Combating air pollution is difficult because it requires action on many different levels, which may include the use of expensive new technologies to remove pollutants from atmospheric emissions, use of cleaner fuel sources and using fuels more efficiently.

The effects of air pollution are felt in the home, in rapidly developing areas of the city and across the state and national boundaries. Current trends are alarming, but concerted efforts may reduce the damage air pollution causes to the people and environment of the city.

**Table 1: Average concentration of gases and SPM at various places of Jammu.**

Area	SO <sub>2</sub> (µg/m <sup>3</sup> )	NO <sub>2</sub> (µg/m <sup>3</sup> )	SPM (µg/m <sup>3</sup> )	Air Quality Index	Ambient air quality class
Residential	5.34/22.32	5.34/11.34	326.00/367.64	26.4/56.51	Light/ moderate air pollution
Commercial	27.39/34.95	15.53/20.62	609.49/630.02	48.82/58.71	Light/ moderate air pollution
Traffic crossings	43.14/72.69	18.26/29.93	870.52/894.99	66.94/93.24	Moderate/ heavy air pollution

**Table 2: Ambient air quality standards (Central Pollution Control Board)**

Location type	Permissible limit in µg/m		
	SPM	SO <sub>2</sub>	NO <sub>2</sub>
Industrial area	300	80	90
Residential area	140	60	60
Sensitive area	70	20	20

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