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ASSESSMENT OF NOISE QUALITY OF CHANDRAPUR CITY, VIDARBHA REGION, INDIA

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ABSTRACT:

Noise quality assessment and its impact on surrounding environment and human being life quality may be a major issue now a days. Since there are no such a type of research work on noise pollution in Chandrapur city, this investigation was carried out to determine the noise quality of Chandrapur city because of Chandrapur is an industrial zone and famous as a Black Gold city because of coal mines in and around the Chandrapur city due to that transportation, commercial zone and marketing are is very much active in every time and that is make adverse impact on noise quality. The Bangali camp area, Janta college area, Priyadarshani hall area, Gandhi Square area, S.T. Workshop area and Junona Square area was selected for noise sampling. 450 samples were collected from six sampling sites and 75 from each sampling site by 7-9 am, 12-2 pm and 5-7pm i.e., 3 sample each day up to 25 days. The results shows that average minimum 49.5 dB and 84.8 dB from all six locations, if this type of result shows year by year, then very soon Chandrapur city is suffering from noise pollution also.

KEYWORDS: Noise Quality, Chandrapur, Vidarbha, India

INTRODUCTION:

Noise pollution is a rising global problem but has extremely increase in major cities of developing countries [3]. It can be labelled as the level of noise with a hazardous impact on the physiological and psychological lives of humans or animals [4]. Other types of pollution like air, water, soil is not usually compared with Sound [5, 6, 7 & 8], The reason is that the adverse effects of other forms of pollution on humans are more pronounced. Residences far away from noise sources and near silent secondary roads are presently very popular. People prefer to live in places far from noisy and crowdy urban areas [9].

Noise pollution; a major city's area concept is assuming serious matter in every city. The intensity and frequency of pollution has been growing day by day. Noise pollution is an irritation to human beings. The noise is usually artificial sound which can be created by vehicular, industrial activity that disrupts activity or balance of human's way of life.

The most common appearance of noise pollution is hearing loss or weakening [1]. Hearing damage is generally classified as professional hazards specially when the individual is affiliated with industry that spread loud noise or sound. Also, several functional and mental effects of noise pollution exist. The mixture of noise and air pollution is related with respirational diseases, dizziness and sleepiness in school children [10 and 11]. In adults, noise pollution has been found to be connected with high blood pressure [12] and mental problems [2]. This paper aims to assessment of noise quality or pollution levels in Chandrapur city areas.

MATERIAL AND METHOD:

The data was collected from six sampling location i.e Bangali camp area, Janta college area, Priyadarshani hall area, Gandhi Square area, S.T. Workshop area and Junona Square area. Noise sample were taken three different times of the day; morning (7 am to 9 am), afternoon (12 noon to 2 pm) and evening (5 pm to 7 pm) **Table 1**. 450 samples were taken from all six samples and 75 samples were taken from each sampling location. These sampling location areas include commercial area (Bangali camp area, Priyadarshani hall area, Gandhi Square area, S.T. Workshop area and Junona Square area) and science zone area (Janta College area). The data were taken using the Sound/ Noise Level Meter). Particularly, the Noise Pollution Level (NLP) was measured and analyzed in this present study. Ambient noise levels in six locations in Chandrapur city were monitored and compared it with the CPCB standards for ambient air quality in respect of noise. A noise assessment method developed by US Environmental Protection Agency (EPA) for public noise from all sources is day and night sound levels "Ldn" was used.

OBSERVATION AND RESULT:

The comparable noise levels observed at different sampling locations in Chandrapur city **(Table 2)**. The total 450 samples collected from all six locations from that 75 samples from each sampling location and 25 noise samples were collected from morning time (7-9am), 25 were collected from afternoon time (12-2pm) and 25 were collected from evening time (5-7pm) from each sampling location. The results shows that, five locations out of six i.e. Bangali camp area, Priyadarshani hall area, Gandhi Square area, S.T. Workshop area and Junona Square area the average noise level were found to be 64.2, 60.3, 62.9, 55.9, 58.3 dB minimum and 84.8, 82.0, 81.5, 76.3 and 81.8 dB maximum respectively **(Table 2),** these results having above permissible limit for commercial area as per ambient air quality monitoring with respect to noise (Table 3) and one sampling location i.e. Janta College area noise level minimum and maximum were found to be 49.5 and 75.1 dB respectively **(Table 2)**, that is above permissible limit because of this is silence zone as per ambient air quality monitoring with respect to noise **(Table 3).**

CONCLUSION:

The aim of this research was to study the major sources of noise pollution in typical six biggest square or areas where the traffic and public activity is more. The Chandrapur is very much having stuffing from near to types of pollution i.e., air pollution, water pollution, soil pollution, metal pollution etc. but after this study, it is clear that this city was also suffering from noise pollution also. The noise quality of the Chandrapur city was not so good. The noisy areas having selected for this study. The adverse impact of this observed noise pollution on public of Chandrapur city has facing day by day. This is the alarming time to control the noise pollution.

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Table 1: Sampling Location

Sr. No.	Location	Latitude and Longitude
1	**Bangali camp area**	19°58'06.76"N and 79°18'38.68"E
2	**Priyadarshani hall area**	19°57'42.16"N and 79°17'44.41"E
3	**Gandhi Square area**	19°56'46.60"N and 79°17'45.46"E
4	**S.T. Workshop area**	19°58'58.12"N and 79°17'59.93"E
5	**Junona Square area**	19°55'53.30"N and 79°19'60.81"E
6	**Janta College area**	19°58'22.68"N and 79°17'10.89"E

Table 2: Noise Sampling Monitoring Data (in dB)

Sr. No.	Location	Week	Weekly Average						Average	
			7 – 9 am		12 - 2 pm		5 – 7 pm			
			Min	Max	Min	Min	Max	Max	Min	Max
1	Bangali camp area	1	65.1	82.5	63.6	84.5	61.7	87.1	64.2	84.8
		2	64.1	79.7	63.8	84.8	63.9	88.7		
		3	64.6	82.8	62.0	85.0	66.8	88.5		
		4	66.1	81.5	66.2	84.6	64.8	87.0		
2	Priyadarshani hall area	1	54.4	80.8	61.4	82.6	59.7	84.4	60.3	82.0
		2	55.9	80.5	58.3	82.2	62.4	85.2		
		3	58.0	79.4	66.3	79.5	66.4	82.8		
		4	57.5	81.0	58.4	79.3	64.6	87.8		
3	Gandhi Square area	1	53.6	73.8	63.6	83.7	65.9	87.6	62.9	81.5
		2	55.4	71.8	66.8	83.8	65.6	89.7		
		3	57.5	71.7	67.2	83.4	66.1	88.0		
		4	58.1	74.5	71.2	82.5	67.1	86.5		
4	S.T. Workshop area	1	49.3	70.2	54.6	74.6	61.3	79.8	55.9	76.3
		2	49.0	71.4	58.3	72.7	60.3	80.7		
		3	49.3	72.1	57.4	77.5	61.3	83.7		
		4	52.0	70.6	56.8	80.8	62.3	84.9		
5	Junona Square area	1	55.8	76.2	56.6	78.8	59.3	84.3	58.3	81.8
		2	53.7	82.0	60.2	83.7	59.9	87.3		
		3	55.3	77.7	60.9	82.6	58.9	86.6		
		4	52.6	77.6	64.9	77.3	63.8	84.8		
6	Janta College area	1	44.1	73.7	45.6	73.3	52.6	75.5	49.5	75.1
		2	48.0	73.0	50.7	74.9	50.4	73.3		
		3	50.2	75.0	49.9	74.9	49.9	77.4		
		4	52.1	76.5	51.5	79.5	52.8	78.1		

Table 3: Ambient Air Quality Monitoring with respect to Noise

Category of area/zone	dB(A)	
	Day time	Night time
Industrial zone	75	70
Commercial zone	65	55
Residential zone	55	45
Silence zone	50	40