

Study of Noise Pollution at different location in Jalgaon City, Maharashtra, India

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ABSTRACT:

Noise pollution becomes a huge problem in all over the world. Jalgaon is fast growing city of Maharashtra, India. It is one of the emerging commercial and industrial city of North Maharashtra. With rapid developments of the city, population of the city increases rapidly. The result of this is increase in number of industries, markets and vehicles in the city. All these causes increase in sound level of the city and create noise pollution. With reference to this in the present investigation sound level at the selected sampling station was studied and compared with standard permissible limits and found that the sound level at both the sampling stations were found more than standard permissible limits.

Keywords: Noise pollution, traffic, silent zone, sound level.

INTRODUCTION:-

Jalgaon is rapidly growing city in Maharashtra. Many industries, education hubs, shopping malls are situated here. It is District place so; various government head offices are situated in the city. The population of the city increases rapidly with fast development of the city. Number of vehicles also increases with the population; this causes noise pollution in the city. Rapid urbanization, industrialization, expansion of road network, and infrastructure cause d noise pollution (Pathak et al. 2007). Unpleasant or unexpected or unwanted sound is called noise pollution (Pawar et al.2010). Urbanization is cause of increase in number of vehicles. (Behzad et al. 2007) Noise has harmful effects on human health. Noise is major source of friction among individuals (Jobair et al. 2001). In the present time noise pollution become a huge problem which has adverse effects on community. The main objective of present study is analysis of noise pollution at selected sampling stations of the city.

METHODOLOGY:

For the present study sound level meter is used which ranges from 30 dB to 130 dB. The instrument has four digits display LCD, having resolution of 0.1 dB. Display updates 0.5 sec. Nine volt standard battery is used for power supply.

Standards of noise levels for various areas of community:-

Sr no.	Category of area	Day time (sound level in dB)	Night time (sound level in dB)
1	Industrial	75	70
2	Commercial	65	55
3	Residential	55	45
4	Silence zone	50	40

For present study two sampling stations were selected. The level of sound was noted by sound level meter. Four readings of sound level were taken in a day i.e. at 7.30 Am, 11.30 AM, 2.30 PM and 5.30 PM regularly for the period of 15 days (from 10 Jan. 2015 to 25 Jan. 2015)

STUDY AREA:

For the present investigation the two sampling stations were selected in Jalgaon city. These two selected sampling stations were

A= Bendale College Chowk B= Court Square.

Jalgaon is rapidly developing city of Maharashtra, number of vehicles, industries also increases with population of the city. Increasing number of vehicles, musical instruments small scale industries and urbanization are the main source of noise pollution (Gangwar et al. 2006)

Both the sampling stations were highly crowded, at the sampling station A) one higher secondary school, one D.T.Ed. College, A.G.D. Bendale College & district stadium is situated, while sampling station B) has many hospitals, district court & Nutan Maratha College. Both the sampling stations are highly sensitive with reference to noise pollution. Sampling stations A & B both have schools, colleges, hospital and court which need silence, but these two squares have high density of traffic which creates noise pollution. Traffic can be considered as the main source of noise pollution in large cities (Jamarah et al. 2007). Now a day, noise pollution is considered as one of the main problem of urban communities and may result in great deal of cost on the society (Martin et al. 2006, Chien & Shin 2007)

OBSERVATIONS:

Sampling stations:-

A- Bendale College chowk, B- Court square

Time:-

T1= 7.30 AM T2= 11.30 AM T3= 2.30 PM T4= 5.30 PM

DATE	TIME	SAMPLING STATION-A in dB	SAMPLING STATION-B in dB
10-01-15	T1	84.5	81.7
	T2	82.4	79.2
	T3	84.2	80.8
	T4	90.1	110.3
11-01-15	T1	74.0	72.1
	T2	75.6	85.2
	T3	72.3	78.4
	T4	65.8	80.3
12-01-15	T1	80.8	79.3
	T2	97.8	93.7
	T3	80.3	84.3
	T4	99.7	113.3
13-01-15	T1	76.4	78.4
	T2	98.1	94.5
	T3	75.6	74.3
	T4	85.9	98.6
14-01-15	T1	71.3	68.8
	T2	85.4	90.6

	T3	76.4	80.6
	T4	84.7	89.6
15-01-15	T1	70.2	69.6
	T2	78.4	79.9
	T3	73.6	77.9
	T4	72.6	69.5
16-01-15	T1	80.6	79.9
	T2	98.6	92.5
	T3	90.4	80.3
	T4	89.4	85.6
17-01-15	T1	78.8	71.4
	T2	94.6	99.3
	T3	82.4	85.3
	T4	84.1	89.9
18-01-15	T1	71.4	76.0
	T2	72.0	82.4
	T3	69.9	73.7
	T4	73.2	80.6
19-01-15	T1	77.5	73.3
	T2	82.4	81.3
	T3	73.6	80.3
	T4	88.6	110.2
20-01-15	T1	70.3	69.2
	T2	86.4	84.3
	T3	78.4	88.6
	T4	97.5	93.7
21-01-15	T1	80.8	78.5
	T2	88.5	96.3
	T3	78.6	79.5
	T4	88.3	90.6
22-01-15	T1	84.5	81.8
	T2	82.6	90.5
	T3	78.5	81.1
	T4	100.6	88.5
23-01-15	T1	74.5	76.1
	T2	84.6	88.2
	T3	70.2	74.5
	T4	68.3	73.5
24-01-15	T1	71.3	73.7
	T2	69.8	76.4
	T3	66.8	75.6
	T4	71.2	76.7
25-01-15	T1	95.2	78.5
	T2	66.2	70.9
	T3	67.6	69.6
	T4	65.4	78.1

RESULT & DISSUCTION:

In the present investigation the average noise level at the both sampling stations were found more than that of permissible limits of CPCB during 10 Jan. 2015 to 25 Jan 2015. The sound level increases gradually from 7.30 AM – 5.30 PM at both the sampling stations. Lowest as well as highest sound level at the both sampling stations was found more than standard permissible limits. It was noted that the level of sound pollution was more at the sampling station B (court square) than that of sampling station A (Bendale College square). The maximum sound level 113.3 dB was observed at the court square on 12 Jan. 2015 at 5.30 PM, while minimum sound level 65.4 dB was observed at Bendale College square on 25 Jan. 2015 at 5.30 PM.

At the sampling station A the maximum sound level 100.6 dB was noticed on 22 Jan 2015 at 5.30 PM, while minimum sound level 65.4 dB at the sampling station A was observed on 25 Jan. 2015 at 5.30 PM.

At the sampling station B the maximum sound level 113.3 dB was noticed on 12 Jan 2015 at 5.30 PM, while minimum sound level 68.8 dB at the sampling station B was observed on 14 Jan 2015 at 7.30 AM.

It was observed that in a morning time (7.30 AM) the sound level at the sampling station B was found less than that of sampling station A, but at 11 AM, 2.30 PM and 5.30 PM the sound level was found more than that of sampling station B. Sound level at the both sampling stations were found second minimum value at 2.30 PM. It reaches at peak at 5.30 PM. In the industrial area of udyam nagar and CBS commercial area the maximum sound level 74.48 dB and 74.08 dB was recorded respectively (Mangalekar et al.) which is found lower than highest limit of present study.

CONCLUSION:

In the present study it can be concluded that sampling station B has more noise pollution than that of sampling station A. In the early morning the sound pollution level at both the sampling stations were found comparatively lower. Maximum noise pollution was found at 5.30 PM at both the sampling stations. The sound level at 11.30 AM was found more than that of 2.30 PM this may be due to school time. Maximum sound level was noticed at 5.30 PM due to school as well as office time. In the present investigation the maximum and minimum sound levels were found more than that of standard limits at both the sampling stations. It is essential to control the sound level immediately from the side of higher authorities to avoid the noise pollution. There may be one way traffic, no horn zone, and plantation of trees.

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