

## Assessment of Noise Level Status in Different Areas of Moradabad City

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**Abstract:** This first paper from this region which is based on noise level study. Exposure to high level of noise may cause severe stress on the auditory and nervous system. Transportation and electricity generator are the major source of noise pollution in Moradabad City. For this purpose present study was carried out at 14 different locations with Sound Level Meter to assess the day and night sound level in Moradabad City. It is observed that all the selected locations, the level of noise was found to be above prescribed noise standard level of CPCB, India. [Report and Opinion 2010;2(5):59-61]. (ISSN:1553-9873).

**Keywords:** Noise Level Status; Areas; Moradabad City

### Introduction

According to Robert Koch a Nobel Prize Winner German bacteriologist "A day will come man will have to fight merciless noise as the worst enemy of health". Noise is derived from the Latin word "nausea" implying 'unwanted sound' or 'sound that is loud, unpleasant or unexpected'. The major cities of the world are now facing problem of rise in noise pollution due to very high population, transportation, congestion and associated commercial and industrial activities (Chauhan, 2008). Noise is becoming an increasingly omnipresent, yet unnoticed form of pollution even in developed countries. Moreover noise is an unwanted sound that may cause some psychological and physical stress to the living as well as non-living objects exposed to it (Singh and Davar, 2004). The increasing number of vehicles, musical instruments, small scale industries, urbanization and human activities are the main source of noise pollution (Gangwar *et. al.*, 2006).

India and all other countries are facing this environmental problem for a long period. Noise from fire cracker is one of the most important environmental problems (Singh and Joshi, 2010). According to Vidya Sagar and Nageshwar, Rao (2006) impact of noise pollution during pregnancy is reflected among the new borns. Bond, (1996) reports that 16% of people in Europe are exposed to 40 dB or more of traffic noise in their bedrooms at night compares it with W.H.O. (World Health Organization) average estimates of 30 to 35 dB for undisturbed sleep. The noise originates from human activities, especially the urbanization and the development of transport and industry. Though, the urban population is much more affected by such pollution, however, small town/villages along side roads or industries are also victim of this problem.

### Material and Methods

The ambient noise monitoring was carried out in residential, commercial, industrial and silent zone in Moradabad City of Uttar Pradesh, India. Moradabad city is famous for its huge export of brass handicrafts to North America and Europe, and is also thus called "Brass City" or Peetal Nagri (in the local language). The population of Moradabad City is 6, 41, 240 as per census of 2001 and population density of Moradabad is 281/km<sup>2</sup> or 728/sq mile. The district of Moradabad lies between 28°21' to 28°16' North Latitudes and 78°4' to 79° East Longitude.

The measurement of sound pressure level was carried out at five different times during the day and two times in night between 6-24 hrs, with the help of sound level meter. Monitoring was carried out during May 2010 at height of 1.5 m and 1 meter away from the chest. During each sampling of noise, 20 reading of SPL were recorded at an interval of 30 seconds in a period of 10 minutes. The minimum and maximum SPL were also recorded. Ambient sound level for different zones of Moradabad city, was monitored and compared with that of standards. Sound levels are measured in decibel. Table 2 and 3 shows the noise level at different zones of Moradabad city.

### Result and Discussion

Table-1 shows the noise level standard in some countries. The sound levels recorded from different zones of Moradabad city were presented in table 2, 3, 4 and 5. The minimum and maximum SPL (sound pressure level) ranged between 72.86 to 109.70 dB at all the selected residential zone of Moradabad city. In case of commercial zone the minimum and maximum SPL ranged between 56.12 to 108.33 dB. On the other hand at all selected industrial zone the maximum and minimum SPL ranged between 88.56 to 120.00 dB. However in the

case of all selected silent zone the maximum and minimum ranged between 33.89 to 99.941 dB.

In the present study, the average noise level was higher than prescribed Indian Standard at all selected sites, except at T.M. University (Teerthanker Mahaveer University, Moradabad, India). Chauhan (2008) also reported that noise level in Haridwar and Dehradun city was higher than the prescribed limit of CPCB, India. Deka (2000) monitored the noise quality of Guwahati city and also reported that average noise level at residential and commercial area was reported as 68 dB and 83 dB, respectively, which was 23.6 and 27.7 dB higher as compared to the Indian standard limit of noise in residential and

commercial zones, respectively. Ganwar et al., (2006) reported that noise level in Bareilly Metropolitan city was slightly higher than prescribed limit of the Central Pollution Control Board of India.

Important factors affecting noise values are continuity of the city centre traffic, dimension of the roads, position of the roads and the road surface materials with city centre crossroad signal system (Berge, 1994; Tand & Tong, 2004). Traffic noise levels increase with increasing density of traffic related with the traffic composition, road slope, road width, road surface structure distance to crossroad (Tadeu 1997; Williams & McCrae, 1995).

Table-1: Noise level standard in some countries

Countries	Industrial		Commercial		Residential		Silent Zones	
	Day	Night	Day	Night	Day	Night	Day	Night
Australia (dB)	55	55	55	45	45	35	45	35
<b>India (dB)</b>	<b>75</b>	<b>70</b>	<b>65</b>	<b>55</b>	<b>55</b>	<b>45</b>	<b>50</b>	<b>40</b>
Japan (dB)	60	50	60	50	50	40	45	35
US, EPA (dB)	70	60	60	50	55	45	45	35
WHO (dB)	65	65	55	55	55	45	45	35

Table 2: Noise Level (dB) in Residential Zone

S.No.	Place	Noise Pressure Level		Range
		Day	Night	
1.	MDA	88.96	69.70	80.20-104.56
2.	Milan Vihar	76.12	55.80	72.86-89.40
3.	Prem Nagar	78.82	58.18	76.44-96.12
4.	Budhi Vihar	102.89	88.78	80.56-109.70
CPCB New Delhi, Standard for noise		55	45	

Table 3: Noise Level (dB) in Commercial Zone

S.No.	Place	Noise Pressure Level		Range
		Day	Night	
1.	Town Hall	96.87	76.80	82.16-107.64
2.	Diwan Market	100.46	66.78	56.88-106.41
3.	Chaddha Complex	104.47	60.50	67.69-108.13
4.	Sai Complex	102.36	59.41	56.12-108.33
CPCB New Delhi, Standard for noise		65	55	

Table 4: Noise Level (dB) in Industrial Zone

S.No.	Place	Noise Pressure Level		Range
		Day	Night	
1.	Peetal Nagari	98.58	90.44	88.56-109.16
2.	Talwar Factory	113.78	100.56	89.56-120.00
CPCB New Delhi, Standard for noise		75	70	

Table 5: Noise Level (dB) in Silent Zone

S.No.	Place	Noise Pressure Level		Range
		Day	Night	
1.	T.M.University Moradabad	39.55	28.76	23.39-43.89
2.	PMS School	46.78	33.39	33.89-49.81
3.	District Hospital	83.78	66.44	47.76-99.91
4.	Sai Hospital	65.70	59.76	50.12-79.78
CPCB New Delhi, Standard for noise		50	40	

**Conclusion:**

It is clear from the presented study that all selected sites were exposed to higher noise level as compared to Indian standard noise level prescribed by CPCB (Central Pollution Control Board), New Delhi, India. To reduce noise pollution several measures can be implemented such as proper maintenance of vehicles and roads, plantation of trees and electricity generator should be covered under silencer, traffic movements should be maintained or control effectively by traffic police and to aware the people about noise pollution.

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