



Noise Levels in Dussehara at Mahewa, Allahabad, Uttar Pradesh

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Abstract:

The present research focused on noise level monitoring during pre dussehara, post and during dussehara day's at Mahewa, Naini Allahabad. The variation of noise levels L_{10} , L_{90} and L_{eq} were observed during pre dussehara ranges between 82.2- 86.2 dB, 67.0- 69.4 dB, 77.36– 80.74 dB, followed by post dussehara 85.2-88.3 dB, 69.1-70.90 dB, 79.97-82.65 dB and during dussehara were 92.1-99.2dB, 68.9- 69.9 dB, 84.89– 89.35 dB respectively at day time (6:00 PM to 9:00 PM). At night time, the variation of noise level L_{10} , L_{90} and L_{eq} was observed during pre, post and dussehara between 58.7-79.9 dB, 42.1-62.8 dB, 53.31-74.12 dB, 62.6-80.6 dB, 42.3-63.6 dB, 56.00-75.08 dB, and 84.1-116.4 dB, 67.3-79.2 dB, 78.64-104.28 dB respectively. Present research was focused on semi urban area locality during pre, post and dusherra and also explore the main causes of noise pollution on during days.

Keywords: Dussehara, Monitoring, Noise Level, Noise Pollution

1.0 Introduction:

Noise pollution creates a psychological and physical stress to the living and non-living objects exposed to it (Singh and Davar, 2004). Due to urbanization day by day increase numbers of vehicles, industries and human activities are creating noise pollution. It also causes social effects, feelings of disturbance, stress reactions, sleep disorders, some hormonal changes, increased blood pressure, and increased risk of myocardial infarction, impairment of well-being and general quality of life. The effects of noise pollution interaction on human, animal and plants were observed by several authors (Babisch, 2000; Belojevic 2008; Lundberg, 1999; Jamrah *et al.*, 2006; Seto *et al.*, 2007; Yousif, 2015). Noise pollution is a significant environmental problem in many urban areas that has not been properly recognized, despite the fact that it is steadily growing in developing countries (Jamrah *et al.*, 2006).

In present scenario, noise pollution is important problems of urban communities and several effects on the urban environment (Martin *et al.*, 2006). Every environmental pollution problem has the roots

in the past be it water, air or noise pollution and all these problems are becoming critical in the recent years due to urbanization and modern technologies. Now days use of musical instruments, drums D.J. crackers are during different festivals and other occasion it was increase the noise level during the specific period and also increase noise pollution and people nearby area are feel discomfort (Bhagwat and Meshram, 2013).

2.0 Materials and Methods:

Allahabad is earlier famous as Prayag. Presently, it is one of the largest cities in Uttar Pradesh. The city is located at the confluence of the three most important and sacred rivers of Indian subcontinent Ganga, Yamuna and Saraswati and the point where the three rivers meet is known as Triveni. Allahabad is known for world famous Pilgrim for Kumbha Mela. Allahabad is located in the southern part of Uttar Pradesh at the longitude and latitude 25.45°N and 81.84°E with an elevation of 98 meters from sea level.

2.1 Study Area:

It is situated from approximately 6 km away from district headquarter Allahabad at the latitude of 25.40 and longitude 81.85. Mahewa is also well connected with NH-27 Allahabad-Rewa Road, nearby area of study site is also influenced by mixed population of urban and rural areas.

2.2 Monitoring Period:

Noise monitoring was carried out on Pre Dussehara, Post Dussehara and during Dussehara at Mahewa, Naini, Allahabad.

2.3 Monitoring Time:

Monitoring of noise level was observed on 12 October to 14 October, 2016 during 6:00 PM to 6:00AM.

2.4 Field Measurement:

Noise monitoring was carried out to assess the noise level during festive and non festive day at selected site. The noise monitoring was continues observed by sound level meter. The microphone of the sound level meter was pointed approximately 1m away from any reflective surfaces and 1.2 m to 1.5 m above the ground to reduce the effect of acoustic reflection. The noise level standards given in table 1.

Table 1: Standards of noise level as laid by CPCB (January 2010)

Area Code	Category of Area/Zone	Limits in dB (A) L_{eq} day time (6 a.m. and 9 p.m.)	Limits in dB (A) L_{eq} night time (9 p.m. and 6 a.m.)
A	Industrial Area	75	70
B	Commercial Area	65	55
C	Residential Area	55	45
D	Silence Zone	50	40

3.0 Result and Discussion:

Noise levels were recorded at monitoring site (Mahewa) Allahabad .The results of noise level at site with respect to monitoring time showed in the figure1. The noise level of Pre Dussehra was observed, L_{10} ranges 82.2- 86.2 dB, L_{90} 67.00 - 69.4 dB and L_{eq} values ranges 77.36–80.74 dB at the day time during 6:00 PM to 9:00 PM. And night time L_{10} values ranges 58.7-79.9 dB, L_{90} 42.1- 62.8 dB and L_{eq} value 53.31–74.12 dB during 9:00 PM to 6:00 AM. The height L_{10} , L_{90} and L_{eq} value were recorded 86.2 dB, 69.4dB, 80.74 dB (6:00-7:00 PM) respectively at day time and 79.9 dB (05:00-06:00 AM), 62.8 dB (9:00-10:00 PM), 74.12 dB (5:00-6:00 AM) at night time respectively. The increasing noise level was influence by Jhanki, chowki, musical instrument like drums, loudspeakers, commercial activities in the shops and movements of vehicle on roadsides (Jamarah et al., 2006).

The variation noise level during dussehara presented in figure 2, L_{10} and L_{90} values ranges from 92.1-99.2 dB and 68.9-69.9 dB with L_{eq} values 84.89– 89.35 dB at day time (6:00 PM-9:00 PM). During night time, the values of L_{10} and L_{90} were recorded between 84.1–116.4 dB and 67.3– 79.2dB respectively and calculated value of L_{eq} was 78.64– 104.28 dB. The highest L_{10} values were observed 8:00-9:00 PM (99.2 dB) at day time and 10:00-11:00 PM (116.4 dB) at

night time respectively during dusherra in (Agarwal, and Yadav, 2013; Ahirwar and Bajpai, 2015). Jhanki, Chowki, musical instrument, loudspeakers, and drums were the main source of increasing noise.

The variations of L_{10} values ranges between 85.2-88.3 dB and L_{90} values 69.1-70.90 dB with the calculated value of L_{eq} 79.97-82.65 dB during 6:00 PM-9:00 PM at day time and night time L_{10} 62.6-80.8 dB, L_{90} 42.3-63.6dB with L_{eq} values 56.00-75.08 dB (Chien and Shih, 2007). Figure 3 reflected that ranges of noise level of during post Dussehara. The increasing and decreasing trend showed due to the blowing horn, vehicle movement, loudspeaker etc.

Figure 4 shows the ranges of equivalent noise level (L_{eq}) of Mahewa. The variations of L_{eq} values of Pre, During and Post Dussehara ranges between 77.36-80.74 dB, 84.89-89.35 dB and 79.97-82.65 dB during 6:00 PM-6:00 AM at day time and night time ranges 53.31-74.12 dB, 78.64-104.28 dB and 56.00-75.08 dB during 9:00 PM-6:00AM respectively (Chien and Shih, 2007).

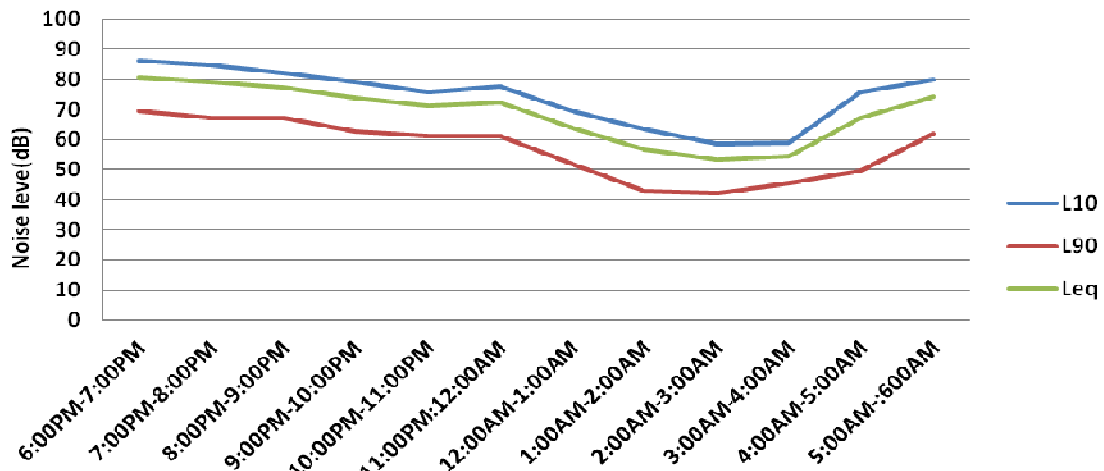


Fig. 1: Variation of Noise Level Pre Dussehara at Mahewa

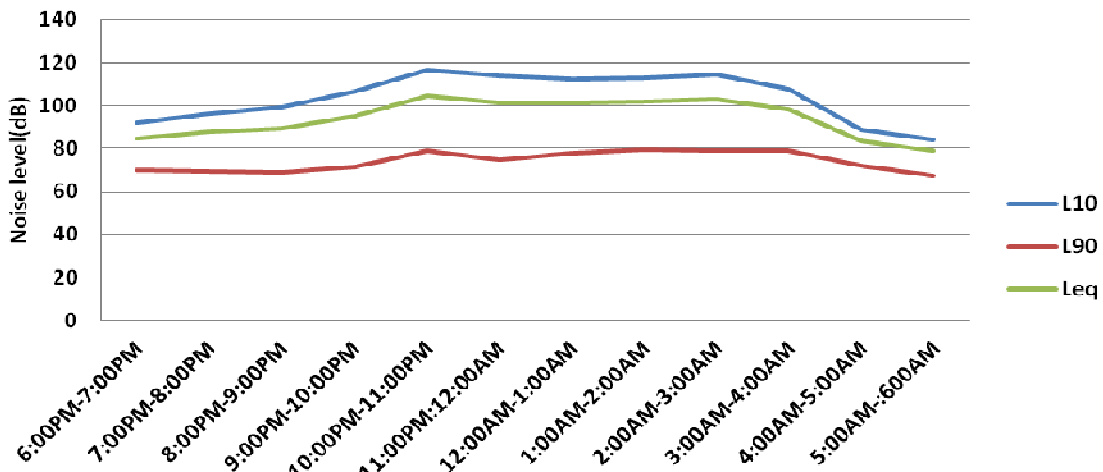


Fig. 2: Variation of Noise Level during Dussehara at Mahewa

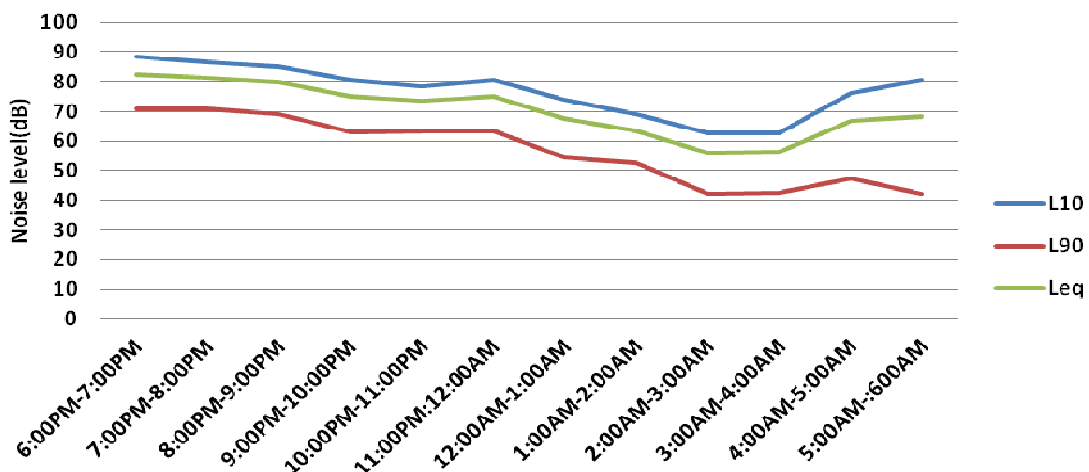


Fig. 3: Variation of Noise Level Post Dussehara at Mahewa

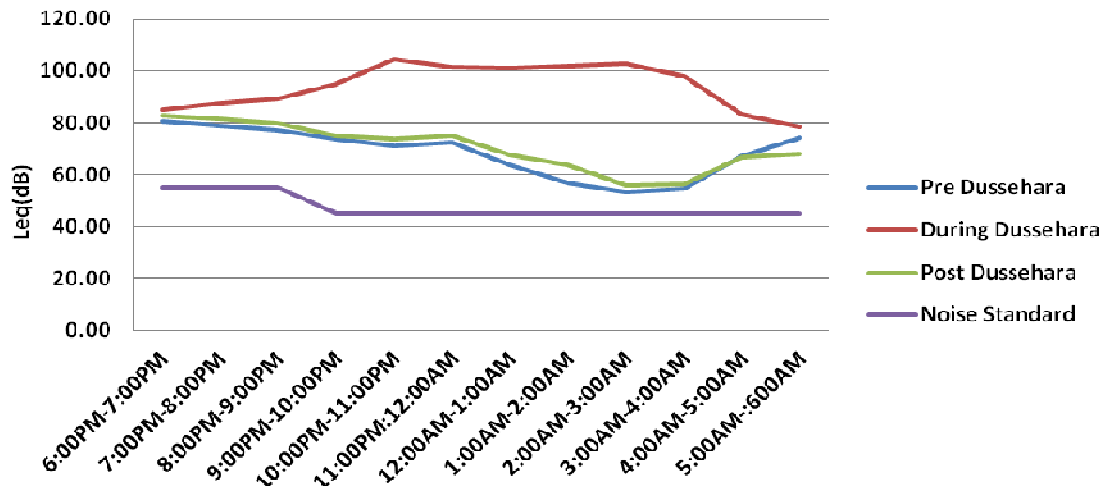


Fig. 4: Variation of Equivalent Noise Level of pre, during and post Dussehara at Mahewa

4.0 Conclusion:

This research paper explains the levels of noise pollution in during Dussehara at monitoring site (Mahewa), Allahabad. The analysis has revealed that noise pollution levels are rather higher than prescribed Indian Standards at monitored site. The main reason of high noise was Jhanki, Chouki, and musical instrument like drums, loudspeakers and vehicular movement. But during post Dussehara, the noise was found higher than the pre Dussehara and lowers than the Dussehara day's. The noise levels of all the day was much more than the prescribed limits of CPCB standard. From the present research it was concluded that the use of higher frequency loud speakers should be allowed for specified period only.

5.0 Acknowledgement:

The authors are thankful to Dean, College of Forestry, SHUATS, Allahabad for providing necessary research facilities

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