

DIWALI FESTIVAL OF LIGHT NOT NOISE

Diwali is the festival of lights. It is also known as 'Deepawali'. It is celebrated in our country with joy and happiness every year. It is one of the biggest festivals of Hindus. Usually it comes in the month of October and November after twenty days of Dussehra, on the 13th day of the dark fortnight of the month of Ashwin. It is celebrated in the memory of coming back home of Lord Rama along with his wife Sita & brother Laxman after 14 years of exile. It is believed that on this day, Lord Rama returned to his kingdom, Ayodhya, after killing the demon, King Ravana and people lighted earthen diyas all around their house and celebrated his victory over Raavan. It is a symbol of victory of good over evil. Since then, the festival is celebrated by lighting diyas and candles to drive away the darkness of Amavasya and the dark of ignorance. Homes are decorated on the day of diwali and sweets are distributed. Laxmi Puja is performed in the evening and blessings of Goddess of Wealth is sought. People present diwali gifts to their near and dear ones. Earlier, it was celebrated with diyas but slowly it took the form of lights, lighting lamps, candles and crackers. Now a days, people burn dangerous fire crackers limitlessly. Crackers have a big hand in polluting our environment. The toxic substances used in the firecrackers release toxic gases that are harmful to the health of all living beings. The noise of the crackers cause immense suffering to birds and animals. Diwali is the festival of lights and not burning of the limitless crackers which takes the form of air and noise pollution. We should minimize the use of firecrackers during diwali celebrations and other celebrations. Noiseless diwali has become the concept for the last few years. It is slowly gathering momentum too. But it has not yet reached that level to which we all can say that yes, we celebrated a noiseless safe and pollution free diwali. A festival must be treated like a festival not like enjoyment or nuisance. There is no need to pollute the environment for this. We must take steps to make ourselves and others aware to put an end to noise through rallies and hoardings. We must not buy unlimited crackers instead of that we can help a poor with that money. These days, trend of diwali greetings, diwali messages, diwali cards, diwali ecards, diwali calendar, diwali greeting cards, diwali flash, diwali themes, diwali screensaver, diwali images, diwali rangoli, diwali scraps, diwali designs, diwali painting is going on. It seems and feels very nice to wish each other by different means. But we must also make each other aware of the harms of the pollution caused by the firecrackers that leads directly or indirectly to global warming. Hence, Say 'NO' to Crackers and play a safe, noiseless and pollution free Diwali.

India is a land of varied culture. This has given rise to several religious festivals. Diwali is one of the most sacred festivals of the Hindus though people of other religions also share the joys and festivity with their Hindu brethren. With this festival are associated many legends.

The word Diwali means 'a row of lights'. It is indeed a festival when every house-top is illuminated with lamps. The people start making preparations for this festival much earlier. They get their houses white-washed. They keep their homes tidy and clean. All the houses are decorated with coloured frills, bulbs and pictures.

Diwali is said to be festival of light, it is celebrated in every part of the country with great enthusiasm, but the environmental degradation that occurs during that period lasts for longer time. The temporary joy of bursting firecrackers is soon replaced by the intense air and noise and loitering of toxic garbage. It contains harmful chemicals that are associated with respiratory disorder, while noise from fire crackers can cause headache and nervous system problems in human beings while birds and animals have to cope with the blasts and noxious smoke.

Noise is defined as unwanted or disturbing sound. Sound is a form of energy that is emitted by a vibrating body and on reaching the ear causes the sensation of hearing through nerves.

It is usually made up of a wide range of different frequencies. The spread of sound energy across the audible frequency “spectrum” (about 20Hz – 20 kHz) is one factor that helps to make it identifiable to the human ear. The human ear is a very sensitive system with an extensive dynamic range. To accommodate this very large range, sound levels are measured using the decibel (dB) scale.¹

EFFECTS OF NOISE

1 Hearing Problems: Any unwanted sound that our ears have not been built to filter can cause problems within the body. Our ears can take in a certain range of sounds without getting damaged.

Constant exposure to loud levels of noise can easily result in the damage of our ear drums and loss of hearing. It also reduces our sensitivity to sounds that our ears pick up unconsciously to regulate our body’s rhythm.

2. Health Issues: Excessive noise pollution can influence psychological health. Studies show that the occurrence of aggressive behavior, disturbance of sleep, constant stress, fatigue and hypertension can be linked to excessive noise levels. These in turn can cause more severe and chronic health issues later in life

3. Cardiovascular Issues: Blood pressure levels, cardiovascular disease and stress related heart problems are on the rise. Studies suggest that high intensity noise causes high blood pressure and increases heart beat rate as it disrupts the normal blood flow.

4. Effect on Wildlife: Wildlife faces far more problems than humans because noise pollution since they are more dependent on sound. Animals develop a better sense of hearing than us since their survival depends on it.

Source 1.mpcb.gov.in

1 U.S Environmental Protection Agency <http://www.epa.gov/air/noise.html>

2.Noise Pollution: A modern Plague Lisa Goines, RN; Louis Hagler, MD <http://www.health.gov.au/ArticlesonEffectsofNoise>
<http://www.preservearticles.com/http://www.yourarticlelibrary.com/>

Limits level of sounds

The sound level limits specified by CPCB, represent the general limitation on noise produced by noise sources. Some noises, however, are annoying no matter where or in what kind of environment they exist. High level impulsive noises represent a special category and, consequently, are restricted by an absolute limitation.

The Central Pollution Control Board (CPCB) constituted a National Committee of Experts on Noise Pollution Control. The Committee recommended noise standards for ambient air and for automobiles, domestic appliances and construction equipment, which were later notified under The Environment (Protection) Act, 1986 as given below:

Standards of Noise Levels under EPA (1986): Noise Pollution (Regulation & Control) Rules, 2000

Area Code	Category of Area	Limits in dB(A) L Area Code	
		Day time	Night time

A	Industrial area	75	70
B	Commercial area	65	55
C	Residential area	55	45
D	Silence Zone	50	40

Note:

1. Day time is reckoned from 6 A.M. To 10 P.M.
2. Night time is reckoned in from 10 P.M. and 6 A.M.
3. Silence zone is referred as areas within 100 meters around premises such as hospitals, educational institutions and courts. The Silence zones are to be declared by the Competent Authority.
4. Use of vehicular horns, loudspeakers and bursting of crackers shall be banned in these zones.
5. Mixed categories of areas should be declared as one of the four above mentioned categories by the Competent Authority and the corresponding standards shall apply.

National Ambient Air Quality Standards

Sr. No	Parameters	Daily (24hr) Maximum concentration in residential area $\mu\text{g}/\text{m}^3$
1	Sulphur dioxide (SO ₂)	80
2	Oxides of Nitrogen (NO _x)	80
3	Respirable Particulate Matter	100

Central Pollution Control Board_ Noise Standards, Report on Ambient Noise Monitoring in Meteropolitatian city byMPCB

Noise Standards for Firecrackers:

(The Noise standards for fire-crackers were notified by the Environment (Protection) (Second Amendment) Rules, 1999 vide G.S.R.682(E), dated the 5th October, 1999 and inserted as serial no. 89 of Schedule I of the Environment (Protection) Rules, 1986. Subsequently these Rules were amended by the Environment (Protection) Second Amendment Rules, 2006 vide G.S.R. 640(E), dated the 16th October, 2006, under the Environment (Protection) Act, 1986)

- (i) The manufacture, sale or use of fire-crackers generating noise level exceeding 125 d B(AI) or 145 dB(C)pk at 4 meters distance from the point of bursting shall be prohibited.

(ii) For individual fire-cracker constituting the series (joined firecrackers), the above mentioned limit be reduced by 5 $\log_{10}(N)$ dB, where N = number of crackers joined together.

B. The broad requirements for measurement of noise from fire-crackers shall be-

(i) The measurements shall be made on a hard concrete surface of minimum 5 meter diameter or equivalent.

(ii) The measurements shall be made in free field conditions i.e., there shall not be any reflecting surface upto 15 meter distance from the point of bursting.

(iii) The measurement shall be made with an approved sound level meter.

C. The Department of Explosives shall ensure implementation of these standards.

D. The fire-crackers for the purpose of export shall be exempted from the sub-paragraphs A, B and C above, **subject to the compliance of the following conditions, namely:-**

(i) the manufacturer shall have an export order;

(ii) the fire-crackers shall conform to the level prescribed in the country to which it is exported; (iii) they shall have a different packing colour code, and

(iv) there shall be a declaration on the box "not for sale in India" or "only for export in other countries."

Note: dB(A) : A-weighted impulse Sound Pressure Level in decibel dB(C)pk: C-weighted Peak Sound Pressure Level in decibel."

Noise Monitoring at various locations in maharashtra during Diwali Festival

The ambient noise monitoring was carried out during the period of Diwali Festivals for 158 locations which is covered under 27 Municipal Corporation all over Maharashtra. The monitoring was carried out for 3 days considering the noise that generate during the festival. 24 hours noise monitoring was carried out on 26th, 27th and 29th October 2019. The noise monitoring was carried out using calibrated Sound Level Meters .

Mumbai- In Mumbai a total of 45 locations where monitored with 15 locations in Mumbai South, 15 locations in Mumbai Western Suberbs and 15 locations in Mumbai Eastern Suberbs on 26th, 27th and 29th October 2019. The highest noise level at Dharavi was high both during day time and at night time with 76.9 dB(A) and 72.6 db(A) repectively on 26th October 2019. On the day of Laxmi poojan, the highest noise level during day time was observed at Kamathipura with 74.8 dB(A) and during night time was observed at Dindoshi with 73.8 dB(A). On 29th October the highest noise level during day time was observed at Mulund West with 72.5 dB(A) and during night time was observed at Malad west with 65.3 dB(A).

Navi Mumbai- In Navi Mumbai a total of 9 locations were monitored. On 26th October, the highest noise level during day time with 73 dB(A) and during night time with 66 db(A) was observed at Vashi Sector 1 and Rabale repectively. On the day of Laxmi poojan, the highest noise level during day time was observed at Ghansoli with 71.5 dB(A) and during night time was observed at CBD with 65 dB(A). On 29th October the highest noise level during day time was observed at Ghansoli with 71.3 dB(A) and during night time was observed at Nerul sector 11 with 65.1 dB(A).

Thane- A total of five locations were monitored in Thane region. The highest noise level at Shiv mandir was high both during day time and at night time with 72.3 dB(A) and 63.6 db(A) repectively on 26th October 2019. On the day of Laxmi poojan, the highest noise level at Tembhi Naka was high both during day time and at night time with 70.5 dB(A)

and 61.1 db(A) respectively. On 29th October the highest noise level during day time was observed at Shiv Mandir with 67.4 dB(A) and during night time was observed at Tembhi Naka with 58.9 dB(A).

Pune- Fifteen locations were monitored in Pune region. On 26th October, the highest noise level during day time with 82.7 dB(A) and during night time with 78.4 dB(A) was observed at Laxmi Road and Kothrud respectively. On the day of Laxmi poojan, the highest noise level during day time was observed at Karve Road with 87.6 dB(A) and during night time was observed at Swarget with 77.6 dB(A). On 29th October the highest noise level during day time was observed at Swarget with 79.9 dB(A) and during night time was observed at Shaniwarwada with 71.3 dB(A).

Nashi- Five locations were monitored for Nashik region. The highest noise level at CBS was high both during day time and at night time with 71 dB(A) and 64.6 dB(A) respectively on 26th October 2019. On the day of Laxmi poojan, the highest noise level at Dahipool was high during day time and during night time the highest noise level was observed at Panchavati with 73.2 dB(A). On 29th October the highest noise level during day time was observed at Dahipool with 71.1 dB(A) and during night time was observed at CBS with 65.7 dB(A).

Aurangabad- Five locations were monitored for Aurangabad region. The highest noise level on 26th and 29th October both during day time and night time was observed at Kranti Chowk. On the day of Laxmi poojan, the highest noise level at Gulmandi was high during day time with 68 dB(A) and during night time the highest noise level was observed at City Chowk with 61 dB(A).

Nagpur- In Nagpur region 10 locations were monitored. On 26th and 27th October, the highest noise level both during daytime and night time was observed at Deshpande Layout. On 29th October the highest noise level during day time was observed at Deshpande Layout with 70.9 dB(A) and during night time was observed at Itwari with 67.7 dB(A).

Kalyan- Three locations were monitored in Kalyan region. The highest noise level during day time and night time on 26th October was observed at Birla college with 71.1 dB(A) and Bail Bazar with 62.8 dB(A) respectively. On the day of Laxmi Poojan the highest noise level both during day time and during night time was observed at Bail Bazar with 70.3 dB(A) and 64.6 dB(A) respectively. On 29th October, the highest noise level during day time was observed at Bail Bazar with 70.6 dB(A) and during night time was observed at Birla college with 63.2 dB(A).

Amaravati- Three locations were monitored for Amravati region. On all three days of monitoring, the highest noise level both during day time and during night time was observed at Rajkamal Chowk.

Jalgaon- In Jalgaon region also three locations were monitored. The highest noise level on 26th October during day time was observed at Shivaji Chowk with 70.3 dB(A) and during night time at all three locations the noise level was 66.6 dB(A). On the day of Laxmi Puja, the noise level was high both during day time and night time at Shashtri Tower Chowk with 82.8 dB(A) and 76.9 dB(A) respectively. On 29th October the highest noise level during day time was observed at Shashtri Tower Chowk with 78.9 dB(A) and the highest noise level during night time was observed at Shivaji Chowk with 66.6 dB(A).

Kolhapur- In Kolhapur region seven locations were monitored. On 26th October, the highest noise level both during daytime and night time was observed at Tara Rani with 81 dB(A) and 70.6 dB(A) respectively. On the day of Laxmi puja, the highest noise level during day time was observed at Shahupuri with 87.8 dB(A) and during night time was observed at Tara Rani with 72.2 dB(A). On 29th October, the highest noise level during day time was observed at Shahupuri with 84.6 dB(A) and during night time was observed at Papachi Tikti with 77.8 dB(A).

Sangli- Out of the three locations monitored in Sangli region, On 26th October, the highest noise level both during daytime and night time was observed at Herbhat Road with 79.5 dB(A) and 61.4 dB(A) respectively. On the day of Laxmi pooja, the highest noise level during day time was observed at Herbhat Road with 89.3 dB(A) and during night time was observed at Ganpati Peth with 66.5 dB(A). On 29th October, the highest noise level during day time was observed at Herbhat Road with 80.2 dB(A) and during night time was observed at Miraj Market with 60 dB(A).

Mira-Bhayander- In Mira-Bhayander also three locations were monitored. On 26th October the highest noise level during day time was observed at Shivaji Chowk Kashi meera with 78.1 dB(A) and the highest noise level during night time was observed at Bhakti Vedant Hospital with 56.2 dB(A). On the day of Laxmi Pooja, the highest noise level both during day time and night time was observed at Golden police Chowki with 68.4 dB(A) and 66.2 dB(A) respectively. On 29th October the highest noise level was observed at Bhakti Vedant Hospital with 68.8 dB(A) and during night time the noise level was high at Shivaji Chowk Kashi meera with 61.2 dB(A).

Vasai-Virar- At Vasai-Virar also three locations were monitored for checking the noise level during Diwali Festival. On 26th October the highest noise level both during day time and night time was observed at N.B. Estate with 73 dB(A) and 64 dB(A) respectively. On the day of Laxmi Pooja, the highest noise level both during day time and night time was observed at Valiv phata with 70.3 dB(A) and 60.5 dB(A) respectively. On 29th October the highest noise level both during day time and night time was observed at Range office with 71.1 dB(A) and 64 dB(A) respectively.

Ulhasnagar-At Ulhasnagar three locations were monitored for checking the Diwali noise levels. On 26th October the highest noise level during day time and night time was observed at Camp No. 1 Gol Maidan with 75.2 dB(A) and at Camp No. 5 Bus Stop with 75 dB(A) respectively. On the day of Laxmi poojan, the highest noise level during day time was observed at Shivaji Chowk No. 3 with 69.9 dB(A) and at night time both at Shivaji Chowk No. 3 and Camp No. 5 Bus Stop had highest noise level with 59.4 dB(A). On 29th October the highest noise level during day time was 69 dB(A) and was observed at Camp No. 5 Bus Stop and the highest noise level during night time was observed at Shivaji Chowk No. 3 with 62.4 dB(A).

Bhiwandi-Nizampur-In Bhiwandi-Nizampur also 3 locations were monitored. On 26th October, Indira Gandhi Memorial Hospital had the highest noise level during day time with 70 dB(A) and Shelar Near Nadi naka had the highest noise level during night time with 65.4 dB(A). On the day of Laxmi poojan, the highest noise level both during day time and night time was observed at Dhamankar Naka. On 29th October, Shelar Near Nadi naka had the highest noise level during day time with 76.3 dB(A) and Indira Gandhi Memorial Hospital had the highest noise level during night time with 71.7 dB(A)

Chandrapur -In Chandrapur region also three locations were monitored. On 26th October, the highest noise level both during day time and night time was observed at Gandhi Chowk with 74 dB(A) and 65.4 dB(A) respectively. On Laxmi Poojan, the highest noise level both during day time and night time was observed at Jatpura Gate with 76.2 dB(A) and 66.5 dB(A) respectively. On 29th October, the highest noise level both during day time and night time was observed at Warora Naka with 73.8 dB(A) and 67 dB(A) respectively.

Nanded-Waghala-At Nanded-Waghala also 3 location was monitored. The highest noise level on all three days both during day time and night time was observed at Shree Guru Govindsing Govt. Medical College & Hospital.

Ahmednagar

On 26th October, the highest noise level both during day time and night time was observed at Old Bus Stand with 69.2 dB(A) and 63.8 dB(A) respectively. On 27th and 29th October the highest noise level both day time and night time was observed at Kotala Chowk.

Dhule- At Dhule also three locations were monitored. On 26th October, the highest noise level during day time was observed at Fulwala Chowk with 69.4 dB(A) and during night time the highest noise level was observed both at Fulwala Chowk and Santoshi Mata Chowk with 68.2 dB(A). On the Laxmi poojan day, the highest noise level during day time and during night time was observed at Agrasen Chowk with 69.5 dB(A) and Santoshi Mata Chowk with 65.7 dB(A) respectively. On 29th October, the highest noise level during day time and during night time was observed at Fulwala Chowk with 68.1 dB(A) and Santoshi Mata Chowk with 64 dB(A) respectively.

Malegaon- At Malegaon also three locations were monitored for the noise level during Diwali festival. On 26th October the highest noise level both during day time and at night time was observed at Mosampul. On the Laxmi poojan day, the highest noise level during day time and during night time was observed at Mosampul with 67.3 dB(A) and Satana Naka with 63.8 dB(A) respectively. On 29th October, the highest noise level during day time and during night time was observed at Malegaon Camp with 69.2 dB(A) and Satana Naka with 66.1 dB(A) respectively.

Pimpri-Chinchwad-In Pimpri-Chinchwad also three locations were monitored. On 26th October, the highest noise level both during day time and night time was observed at Thergaon. On 27th and 29th October during day time the highest noise level was observed at Pimpri and during night time the highest noise level was observed at Thergaon.

Parbhani-The highest noise level in Parbhani region on all 3 days both for day time and night time was near Dnyaneshwar Maharaj Mandir.

Latur-The highest noise level in Latur region on all 3 days both for day time and night time was at Ganjgolai.

Akola-In Akola also three location was monitored highest noise level in Akola region on a City Kotawali Chowk. Table 4.25: Noise Levels Location Date Collector Office 26.10.2019 Civil line Chowk 26.10.2019 City Kotawali Chowk .

Solapur-In Solapur, three location was monitored for noise level during October, the highest noise level during day time was observed at with 81.6 dB(A) and during night time was observed at Laxmi Pooja, the highest noise level both during day time and night time was observed at Ashok chowk.

Panvel-Three locations was monitored from Panvel Municipal Corporation. The highest noise level on 26th October during day time was observed at Kharghar Utsav Chowk with 76 dB(A).and during night time was observed at Khanda Colony with 64.7 dB(A). On 27th and 29th October the highest noise level during day time was observed at Kharghar Utsav Chowk and Khanda Colony respectively.

Conclusion

This year 158 locations from 27 Municipal Corporation of Maharashtra for 3 days period during Diwali Festival i.e. on 26th (before diwali), 27th (Laxmi poojan) and 29th (Bhai Dooj) October 2019 for 24 hours for each location which comprise of residential, commercial and silence zone. In the present study it is concluded that although there was occasional bursting of ear deafening crackers in certain areas and there has been a noticeable decrease in noise levels across the state but decibel levels were definitely lower this year in cities like Mumbai, Thane, Ulhasnagar and Kolhapur. This shows that citizens have become aware of the adverse effect of noise pollution and restricted the bursting of crackers in their respective neighborhood. However, rise in noise levels in some of the cities is the matter of concern and there is need to create general awareness towards the hazardous effects of noise pollution in these cities. The target area should be educational institutions and more particularly schools. The young children of impressionable age should be motivated to desist from playing with firecrackers, use of high sound producing equipments and instruments on festivals, religious and social functions, family get-togethers and celebrations etc. which cause noise pollution. Holding of special talks and lectures can be organized in the schools to highlight the menace of noise pollution and the role of the children in preventing it. We should also discourage use of fire crackers as child labor is employed in their manufacturing. Necessary mitigation measures and strict application of laws can also prevent generation and emission of noise pollution .

Source:-Maharashtra Pollution Control Board Report on Ambient Noise Monitoring During Diwali Festival 2019

HOW TO CELEBRATE ECOFREINDY DIWALI

Save electricity consumption:

The energy used in normal electronic lights is wasted a lot instead of this use the traditional way to celebrate the festival and light days and candles which are the better replacement of it. Decorate our houses with flowers, LED lamps, LED lights and rangolis.

Reduce plastic use:

During the Deepawali celebration, one thing that gets everyone excited about is Diwali shopping! However, shopping means a lot of plastic bags. Let's say 'No' to plastic shopping bags and use cloth bags when going out for shopping.

Use recyclable/reusable decoration.

Excessive consumerism increases the undue pressure on the natural resources, so cutting down purchase of unwanted things should be avoided. Use recyclable/reusable decoration.

Use Eco-Friendly Rangoli Colours

Rangolis are a huge part of Diwali celebrations But what we forget about these pretty and colourful designs is that they require synthetic colours that are dangerous for the environment. We can't skip out on making them, but we can do our best to make sure it complies with our eco-friendly Diwali celebration – opt for rangolis that can be made using flowers, or use eco-friendly colours that do not cause harm to our surroundings. It's really about the simple choices! Instead of selecting conventional chemical crackers, one should opt for eco-friendly diwali crackers. An Eco-friendly cracker comprises of

recycled paper and the sound produced by these crackers is under the decibel limit defined by the Pollution Board. These crackers produce different color lights instead of sound onbursting.

References

- 1.Noise Standards for Fire-crackers (The Noise standards for fire-crackers were notified by the Environment Protection)***
- 2.Maharashtra Pollution Control Board Report on Ambient Noise Monitoring During Diwali Festival 201***
- 3.0Central Pollution control Board of India***