

NOISE POLLUTION DURING DIWALI

Noise quality is also affected by the fireworks during Diwali festival. Diwali is a festival of lights that is celebrated with great enthusiasm all over India during the month of October or November (Onset of winter). Burning of firecrackers and illumination is a symbol of joy and prosperity. Earlier earthen lamps were used and the celebration was eco-friendly, where as with the growing civilization and introduction of new fireworks in the market, the mode of celebration is harming the environment.

In the present scenario, Diwali is celebrated by bursting crackers and fireworks, which increase the pollution load in terms of air and noise quality. Fireworks contain chemical species such as sodium oxalate, aluminium, arsenic, sulphur, manganese, iron dust powder, potassium perchlorate, strontium nitrate and barium nitrate (Ravindra et al, 2003). The various effects of components and by products of are given in Table 1.

Table 1. Effect of various components and by products of fire works

S.No.	Toxic Element	Fireworks Usage	Toxic effect of Fall out dust and fumes
1.	Aluminum	Brilliant Whites	Contact dermatitis bioaccumulation
2.	Antimony Sulfide	Glitter effects	Toxic smoke, possible carcinogen
3.	Arsenic compounds	Used as Colorants	Toxic ash can cause lung cancer, skin irritation and wart formation
4.	Barium Nitrate	Glittering greens	Poisonous, fumes can irritate respiratory tract possible radioactive fallout
5.	Copper Compounds	Blues	Polychlorinated dioxins and dibenzo furans can bioaccumulate Cancer risk.
6.	Hexachlorobenzene	Use was supposed to be banned globally	Persistent environmental toxin Is a carcinogen, mutagen and a reproductive hazard.
7.	Lead Dioxide / Nitrate / Chloride	Oxidizer	Bioaccumulation, developmental danger for kids and unborn babies, may remain airborne for days poisonous in plants and animals.
8.	Lithium Compounds	Blazing redo	Toxic and irritating fumes when burned
9.	Mercury (Mercurous Chloride)	Chlorine donor	Toxic heavy metal can bio accumulate/
10.	Nitric Oxide	Fire works by product	Toxic by inhalation is a free radical
11.	Nitrogen dioxide	Fire works by product	Highly toxic by inhalation
12.	Ozone	Fire works by product	Green house gas that attacks and irritates lungs
13.	Perchlorate – Ammonium and Potassium	Propellant / oxidizer	Can contaminate grounds and surface waters, can cause thyroid problems in humans and animals
14.	Potassium Nitrate	Black powder	Toxic dusts, carcinogenic sulfur – coal compounds
15.	Strontium Compounds	Blazind reds	Can replace calcium in body. Strontium chloride is slightly toxic.
16.	Sulphur dioxide	Gaseous by product of Sulphur combustion	Acid rain from Sulphuric acid affects water sources, vegetation and causes property damage.

Source: Chirgag Verma & Dhananjay K. Deshmukh, 2014

The noise levels monitoring was carried out by Central Pollution Control Board during Diwali. The noise data during 2011, 2012, 2013,2014,2015 at five places in Hyderabad city at Abids, Jeedimetla, Jubliee Hills ,Zoo Park and Punjagutta is depicted below:.

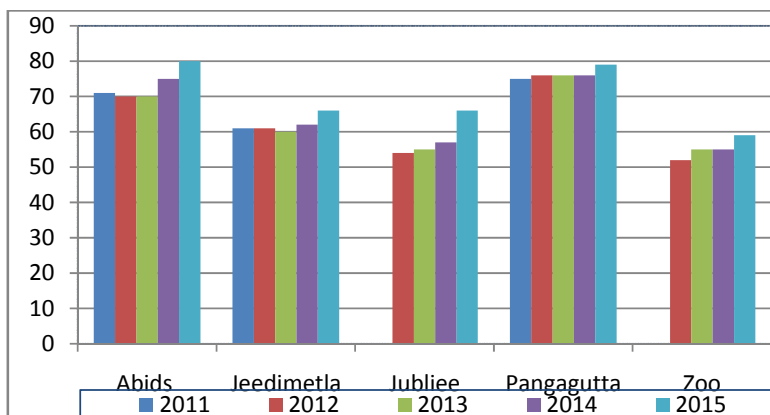


Figure 1: Noise levels during Diwali in Hyderabad

Source: CPCB Press release, Real time noise levels, in 07 Metro cities during Deepawali 2011, 12, 13, 14 and 15.

Prevention and Control of Noise Pollution

Do's	Don'ts
Always maintain your motor vehicle and its exhaust silencer in proper condition	Avoid using horns except at emergencies.
Ensure that your Diesel Generator Set is provided with acoustic enclosure which gives a reduction of a minimum 25 dBA (as per the provisions of the Govt. of India notification GSR 371(E), dated May 17,2002.	Avoid use of multi toned/air horns in your vehicle.
Ask for copy of valid type approval certificate from the dealer while purchasing portable petrol/kerosene generator sets (as per Govt. of India notification viz. GSR 742(E), dated September 25, 2000, which prescribes noise standards for petrol/kerosene generator sets).	Do not install Diesel Generator Sets without prior approval of the competent authority, if required by local laws
Keep the volume of the loudspeaker or sound amplification system low so as not to annoy your neighbors .	Avoid use of loudspeaker in the open.
Ensure that the sound from your music system is played at volume which does not disturb your neighbor.	Do not use loudspeaker or any sound amplification system between 10:00 P.M. and 6:00 A.M., except in closed premises.
Play fire-crackers only outdoors in large open areas and community level.	Do not make your neighbor a captive listener to your music system.
Purchase only those fire-crackers that comply the noise standards as provided by the Govt. of India regulation GSR 682(E), dated October 5, 1999.	Do not play fire-crackers between 10:00 P.M. to 6:00 A.M.

Source: CPCB web site