



# Green Crackers Impact on Environment

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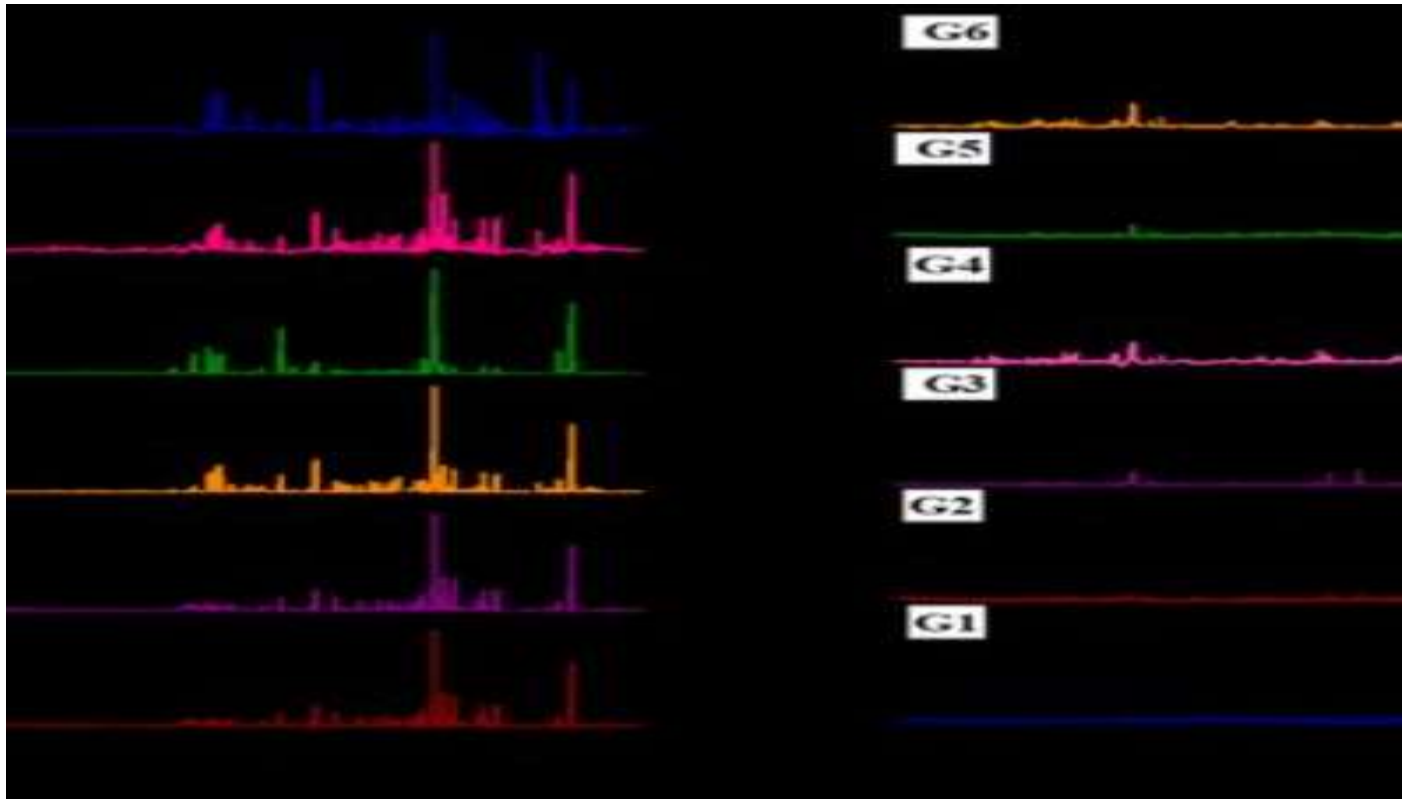
**Abstract:** while introducing green crackers it would reduce 30-35% releases less pollution to the environment( it was declared by CSIR an experiment conducted at Sivakasi under supervision of CSIR EXPERT TEAM, then they would conclude that the traditional crackers releases more chemical pollution and sound pollution then compare to the Green Crackers) due to some alternative elements are added in it like instead of barium nitrate added potassium nitrate/potassium perchlorates were added to reduce barium components and other components also.

**Keywords:** CSIR,NEERI,PESO,STAR,SAFAL,SAWAS,PM10 & PM2.5

**Introduction:** It was introduced by CSIR (council for scientific and Industrial Research) developed by the National environment engineering research of India (NEERI) the production was approved by the petroleum Explosives and safety organization (PESO), The green crackers will made by CSIR approved industries only the main aim for green crackers making to control the pollutions like air pollution, sound pollution and water pollution. The particulate matter in the air would be generally the Air Quality Index for example (Particulate Matter PM 2.5) below 100 is considered as good in air quality and above 100 is unhealthy air quality.

**Methodology:** In the green crackers some of the elements are reduced Barium nitrate, potassium, aluminum, arsenic and carbon by the CSIR. And also, some of the elements reduction suggested by PESO director like firecrackers without antimony, lithium, mercury, arsenic and lead which was releases harmful gases to the environment it will be cause a lot of pollutions i.e. water pollution, air pollution, sound pollution due to this pollution leads to difficult to survive harmful to lungs, kidneys, eyes etc. so CSIR focus to reduce to all three

category of pollutions introduce different types of crackers, The traditional crackers contains barium nitrate, carbon, aluminum etc. due to this replicates high sound and different colors



Colour	Metals Used
White	Magnesium, Aluminum, Titanium
Red	Strontium
Orange	Calcium
Yellow	Sodium
Green	Barium
Blue	Copper
Purple	Strontium, Calcium

## Various Spectrums of crackers

G1- Strontium

G2- Calcium, Strontium

G3-Sodium, calcium

G4-Barium

G6-Copper, Aluminum

Particulate Matter another methodology to count particle in their micro diameter how was the size of particle emissions after the combustion and also conclude the particle present in the environment at what extent, The PM 10 and 2.5 defines the particle with diameter of 10 mm or 2.5mm or even less than that also considered it would also measures optical particles counter without having certain mathematical formula for this PM method

### Types of crackers:

#### SWAS (Safe Water Release):

The SWAS crackers was reduced the water pollution and air pollution, The swas crackers releases water vapor into the air the outside air will contains mixture of dust and pollutants so the water vapor mix with the dust particles in the atmosphere it reduces the pollution percentage.

In this cracker will not contain Sulfur and potassium nitrate it will also reduces water pollution and there will be a dilution release for the gaseous emissions, there will be reduced 30 percent approximately reduction of particle dust in the atmosphere.

#### STAR (Safe Thermite Cracker):

The STAR cracker was reducing Air pollution in these crackers will not contains some of the harmful elements like potassium nitrate and sulfur etc. this cracker produces less sound comparatively traditional cracker and particulate matter of disposal is also reduced, the major use of star cracker is reduced sound pollution

#### SAFAL (Safe Minimal Aluminum):

In this cracker does not contain aluminum, sulfur, potassium nitrate instead of the aluminum uses magnesium nitrate using it would mostly reduce the sound compared to traditional crackers discharge less PM value and releases less amount of pollutants

**Conclusion:** Green crackers will be reduces 30-35 percentage of pollutants as compared to Traditional crackers and also green crackers minimizing the elements like Barium nitrate,lithium,arsenic,lead majorly and also it reduces the sound pollution, air pollution and water pollution

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