HCFI Dr KK Aggarwal Research Fund

Round Table Environment Expert Zoom Meeting on "Green Crackers: Restrictions and Enforcement Challenges"

October 12, 2025 (Sunday, 12 noon-1 PM)

- Green crackers are ecofriendly fireworks developed by Council of Scientific & Industrial Research-National Environmental Engineering Research Institute (CSIR-NEERI). Although considered eco-friendly, they have limitations.
- They are not completely pollution-free as they release reduced amount of harmful pollutants.
- They are made with reduction in size of cell, elimination of ash uses, reduced use of raw materials and use of additives and dust suppressants to reduce emissions.
- Green crackers reduce particulate matter, nitrous oxide, sulfur dioxide as compared to the conventional crackers. They can reduce particulate matter up to ~30%; gaseous emissions are reduced. Noise is also less.
- There are many variants of green crackers; In some, potassium, nitrate, sulfur are not used. In some, sound intensity is less. In others, minimum aluminum is used, it is replaced by magnesium.
- Green crackers can be identified by the distinct green logo of CSIR-NEERI, and an encrypted QR code on the packaging.
- The Delhi government for the first time started a campaign "Say no to crackers" in 1999 with the active involvement of schoolchildren, Eco clubs and Resident Welfare Associations (RWAs).
- The sale of firecrackers was banned in Delhi for the first time in 2017 by the Hon'ble Supreme Court. A nationwide ban was enforced by the Supreme Court in 2018 and only green crackers were allowed in Delhi for just 2 hours.
- All crackers, including green crackers were banned since 2020. A permanent round the year ban was also imposed on firecrackers in Delhi last year. However, the ban has been flouted every year.
- After a gap of 5 years, the Supreme Court allowed only green firecrackers for Diwali this year in Delhi-NCR, but with restrictions including specific sale and bursting times and days.
- There are several challenges in enforcement such as a list of testing labs to verify if they are genuinely green. The QR code needs to be secure and completely unhackable. There is no clear inspection framework by Delhi Police, Petroleum and Explosives Safety Organisation (PESO) and district collectors.
- It is difficult to differentiate between green and non-green crackers visually as many may be fake.
- The short notice before festivals leaves no time for new or temporary license or proper checks.
- Diwali falls during winter season. The problems increase in Delhi-NCR due to meteorological conditions. The mixing height is reduced. Other sources of pollution add to it.
- If only green crackers are allowed to be burst, then non-green cracker factors must be banned. The government has to take this decision and formulate a policy in this regard.
- The campaign "Say no to crackers" must be circulated among school children and families, so that the next generation gradually brings in a change in their lifestyle.
- The emissions from the bursting of crackers and burning of parali create a cocktail leading to the formation of secondary aerosols in the atmosphere, which increases the risk of disease, especially in children and the elderly, including the ill persons.
- This is an episodic pollution.
- The government is trying to find a solution for pollution, which can be both socially relevant for livelihood as crackers do provide employment and ensuring a scientifically backed solution.
- QR codes are often sold to unauthorized persons, so verification through QR code is often faulty.
- Alternate solution such as laser crackers should be explored.
- Air pollution mapping should be done to identify areas where there should be a complete ban on firecrackers. Hot spots should be sealed.
- Before and after monitoring should be recorded. The PESO has no monitoring facility.
- A behavioral change is required. Community celebrations can be a good step.

- There should be a uniform policy in the country for crackers.
- Proactive planning is the need of the hour.
- The source should be controlled for this to be successful.
- This should be done in a phased manner and not country-wide. A time limit is not practical.
- More research is needed in green crackers to make them better by using technology to reduce toxic gases as much as possible.

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