

# Green Crackers

November 9, 2018

## Manifest Pedagogy

The questions on chemicals may appear in the CSE Prelims. As far as the mains linkage is concerned, the topic can be clubbed with environmental degradation, environmental governance, role of judiciary in it and its impact on popular imagination and federalism. These issues will be taken in the upcoming weeks.

## In news

*Ban on sale of crackers except green crackers. The debates and discussions are going on what is a green cracker, the research on that and the laws governing the explosives.*

## Placing it in the syllabus

Paper 2:

Judiciary

Paper 3:

Environmental pollution and degradation

### **What is a Green Cracker?**

According to an affidavit filed by the Ministry of Environment, Forests and Climate Change (MoEF&CC) in the Supreme Court on August 21 this year, 'green crackers' are less polluting, with lower emission levels.

## Static dimensions:

1. Science behind crackers

## 2. Supreme Court's role in environmental activism

### **Current dimensions:**

1. Science behind green crackers.
2. Child labour in firecracker industry.
3. Judiciary – Intellectual elitism Vs. Populist issues
4. Right to religion and the reasonable restrictions.
5. Judicial decrees, Diversity of India (Festivals) and its effect on federalism

### **Content**

Green crackers operate on a technology called Safe Water and Air Sprinklers (SWAS). When a material absorbs water, it generates heat, which aids the bursting of crackers. In a green cracker, a reactant such as aluminium absorbs the water, generating a lot of heat, which enables the explosion. Then the same water also acts as a dust suppressant.

Petroleum and Explosives Safety Organisation (PESO) is the licensing body for firecracker industry.

#### **Research on green crackers:**

The MoEF&CC had commissioned a team from the **Council of Scientific and Industrial Research-National Environmental Engineering Research Institute (CSIR-NEERI)**, Nagpur, to conduct research on 'green crackers'. The study began around June-July this year. There is one team working on the chemical formulation for 'green crackers', and another on sound monitoring.

#### **Supreme Court's Ruling:**

There are no definitive pollution standards for the industry to adhere to. The Supreme Court asked the MoEF&CC and affiliated bodies to come up with solutions. The court also ordered a ban on the use of barium salts in cracker

manufacturing, and also a ban on using series or joint crackers (garlands/laris) on the ground that these caused noise pollution and generated way too much garbage. These decisions by the court were based on suggestions from the MoEF&CC.

### **Apprehensions about the research:**

1. Some chemicals available at laboratory grade cannot be replicated at the industry grade.
2. Whether a cracker is 'green' or not is determined by its emission levels. Theoretically, magnesium has lower emission levels but NEERI has not yet shared the actual figures with the industry.
3. MoEF&CC suggested the use of 'green crackers' or SWAS, but without mentioning either the status of the research or a timeline.
4. 60% of the firecrackers need barium but the court has banned it considering the MoEF&CC's assertion that barium nitrate only gives an attractive colour to the crackers. Anything that emits light needs barium, while something that only explodes does not need barium. Barium added to aluminium gives off white light. When PVC [polyvinyl chloride] powder is added to barium, it lends a green colour to that light. A ban on barium effectively means a ban on flower pots, chakraas, pencils, sparklers, and aerial fireworks.
5. The funding issues and IPR issues.

## **Test Yourself: Mould Your Thoughts**

What are green crackers? How do they differ from other crackers? Will the green crackers address the environmental concerns holistically?