



Green Crackers

For Prelims: Green crackers, SWAS, STAR, SAFAL, PESO

For Mains: Significance of Green Crackers

Why in News?

Recently, a lot of the pollution observed during Diwali can be attributed to the burning of firecrackers or fireworks.

What are the Green Crackers?

- **Green crackers** are dubbed as '**eco-friendly**' crackers and are known to cause less air and noise pollution as compared to traditional firecrackers.
- These crackers were **first designed by the National Environmental and Engineering Research Institute (NEERI)**, under the aegis of the Council for Scientific and Industrial Research (CSIR) in 2018.
 - NEERI is a constituent of CSIR to conduct research and developmental studies in environmental science and engineering.
- These crackers replace certain hazardous agents in traditional crackers with less polluting substances with the aim to reduce the noise intensity and emissions.
- Most green crackers **do not contain barium nitrate**, which is the most dangerous ingredient in conventional crackers.
- Green crackers **use alternative chemicals such as potassium nitrate and aluminium** instead of magnesium and barium as well as carbon instead of arsenic and other harmful pollutants.
- Regular crackers also produce 160-200 decibels of sound, while that from green crackers are limited to about 100-130 decibels.

How can one Identify Green crackers?

- Presently, three brands of green crackers are available for purchase:
 - **SWAS - Safe Water Releaser:** These crackers do not use sulphur or potassium nitrate, and thus release water vapour instead of certain key pollutants. It also deploys the use of diluents, and thus is able to control particulate matter (PM) emissions by upto 30%.
 - **STAR - Safe Thermite Cracker:** Just like SWAS, STAR also does not contain sulphur and potassium nitrate, and besides controlling particulate dust emissions, it also has lower sound intensity.
 - **SAFAL - Safe Minimal Aluminium:** It replaces aluminium content with magnesium and thus produces reduced levels of pollutants.
- All three brands of green crackers **can currently only be produced by licensed manufacturers, approved by the CSIR**. Additionally, the **Petroleum and Explosives Safety Organisation (PESO)** is tasked with certifying that the crackers are made without arsenic, mercury, and barium, and are not loud beyond a certain threshold.

- Furthermore, green crackers can be differentiated from conventional crackers in retail stores by a **green logo printed on their boxes**, along with a Quick Response (QR) coding system.

What is Petroleum and Explosives Safety Organisation?

- PESO is an office under the Department for Promotion of Industry and Internal Trade, **Ministry of Commerce and Industries**.
- It was established in 1898 as a nodal agency for **regulating safety of substances such as explosives, compressed gases and petroleum**.
- Its head office is located in **Nagpur, Maharashtra**.

What are the Concerns regarding Green Crackers?

- Since green crackers **can only be legally manufactured by firms that have signed agreements with the CSIR**, no small-scale business or cottage business house can manufacture green crackers, which coupled with a ban on traditional fireworks, would leave very many unemployed this time of the year.
- There is a **general lack of awareness amongst both the sellers and the public** on how to identify the right green crackers. In fact, experts have cautioned against purchasing green crackers from street vendors as the items may not be credible.
- It is also revealed that most customers prefer 'traditional' crackers due to a **lack of availability of green crackers**, or due to their higher prices.

Way Forward

- There should be efforts by the government to increase their production by giving legal sanctions to small manufacturers for the production activities of green crackers. It will help in tackling the problem of scarcity of Green crackers.
- The people should be made aware of the benefits of green crackers and how to recognize their genuineness.

Source: [DTE](#)

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