



Pusa-2090 Alternative to Pusa-44

[Source: IE](#)

Why in News?

With the [Supreme Court](#) emphasizing the need to **cease stubble burning in states like Punjab, Haryana, Uttar Pradesh, and Rajasthan**, the discussion surrounding **Pusa-2090** rice variety from its ability to provide an alternative to the **problematic long-duration Pusa-44 variety**.

What is Pusa-44 and Pusa-2090?

▪ Pusa-44:

- **Pusa-44**, a long-duration paddy variety bred by the [Indian Agricultural Research Institute \(IARI\)](#), has been a key contributor to stubble burning.
- Its growth cycle of **155-160 days**, from **nursery sowing to harvesting**, leads to late October maturity, leaving a short window for field preparation for the next crop.
- Due to time constraints, farmers **resort to burning the stubble**, causing severe environmental issues.
- Despite its longer duration, the **high-yielding nature of Pusa-44**, averaging 35-36 quintals an acre, makes it popular among farmers.

Note: In the current kharif season, **Pusa-44 covers a significant portion of the paddy cultivation** in Punjab, especially in **non-basmati varieties**. Whereas, [basmati varieties](#), producing softer straw, **contribute less to stubble burning**, but their cultivation area is relatively smaller.

▪ Pusa-2090: A Potential Solution

- IARI has developed **Pusa-2090**, an improved version derived from a **cross between Pusa-44 and CB-501**, an early-maturing Japonica rice line.
- It matures in a **shorter duration of 120-125 days** while maintaining comparable yields, addressing the core issue of stubble burning.
- It combines the **high yield attributes of Pusa-44 with the quicker maturation cycle of CB-501**, making it a promising alternative.
- It has undergone testing at the All-India Coordinated Rice Improvement Project and has been identified for **cultivation in regions like Delhi and Odisha**.
 - Farmers in regions where Pusa-2090 has been tested have reported **promising yield results**.

What can be the Alternatives to Stubble Burning?

- [PUSA Decomposers](#): The decomposers are in the form of **capsules** made by **extracting fungi strains** that help the paddy straw to decompose at a much faster rate.
- [Happy Seeder](#): It is a tractor-mounted device offering an **eco-friendly alternative to stubble burning**.
 - It works by **cutting and lifting rice straw**, simultaneously sowing wheat into the exposed soil and depositing the straw over the sown area as protective mulch.

- **Palletisation:** Paddy straw, when dried and transformed into pellets, becomes a viable alternative fuel source.
 - When mixed with coal, **these pellets can be utilized in thermal power plants** and industries, potentially saving coal usage and lowering carbon emissions.

UPSC Civil Services Examination, Previous Year Question (PYQ)

Prelims

Q. Consider the following agricultural practices: (2012)

1. Contour bunding
2. Relay cropping
3. Zero tillage

In the context of global climate change, which of the above helps/help in carbon sequestration/storage in the soil?

- (a) 1 and 2 only
(b) 3 only
(c) 1, 2 and 3
(d) None of them

Ans: (b)

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