

Decomposer Technology for Stubble

October 12, 2020

In News

The Union Government has said that it will this year test a **straw-decomposing technology developed by scientists at the Indian Agricultural Research Institute**, Pusa, to deter farmers from burning paddy stubble.

Features of PUSA Decomposer

- It is essentially a **fungi-based liquid solution that can soften hard stubble** to the extent that it can be **easily mixed with soil in the field to act as compost**.
- This would then **rule out the need to burn the stubble**, and also help in retaining the essential microbes and nutrients in soil that are otherwise damaged when the residue is burned.
- The **window of time required for the solution to work**, which is currently the main concern of farmers, is around **20 to 25 days**, as per the IARI.
- Farmers argue that this window is too long for them, as they ideally wait about a week or 10 days after harvesting the non-basmati variety of rice, which leaves hard stubble, to sow the wheat crop.
- The IARI scientists have said that farmers do not necessarily have to wait for the entire 20-25 day window before getting to work on the field. They can start ploughing and preparing the land 10-15 days after spraying the decomposer.
- There are **seven strains of fungi** that IARI has identified after research which help in rapid breakdown of hard stubble.
- These seven strains of fungi are packed into four

capsules, which cost about Rs 20 per pack of four. But there is a process for developing the liquid solution from these capsules which can take about four to five days.

- It starts with **boiling 25 litres of water mixed with 150 grams of jaggery, which scientists say has properties that help in multiplication of fungi.** After this mix has cooled, 50 grams of besan (or gram flour) is added to it along with four 'Pusa Decomposer' capsules.
- This solution is then covered with a thin piece of cloth and left in a dark room for four days. On the fourth day, a **thick growth of fungi will be seen on top of the solution.** This has to be mixed well, and thereafter the solution is ready for use.
- A **25-litre solution is advisable for use in one hectare of land after being mixed with 500 litres of water.** It can be sprayed over the field and left to do its work.
- The technology would be used over 100 hectares of land in Punjab and Haryana, 800 hectares in Delhi and 10,000 hectares in Uttar Pradesh.