

LESS POLLUTION, MORE SOIL FERTILITY

If the PUSA Decomposer is successful in tackling stubble burning, we may see a revolution in farming

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Stubble burning refers to the practice of farmers setting fire to plant debris that remain in farms after harvest. Before the 1980s, farmers used to till the remaining debris back into the soil after harvesting the crops manually. The origin of stubble burning can be traced to the advent of the Green Revolution and mechanized harvesting, which utilised the combined harvesting technique. The Green Revolution increased greatly rice and wheat production, which simultaneously increased stubble post harvest. However, the popular combined harvesting technique was not efficacious, as machines left behind one foot tall stalks. This prompted stubble burning as a low cost and speedy solution available to farmers due to the limited time period of 2025 days between harvesting one crop and sowing another.

ENVIRONMENTAL IMPACT

Stubble burning is practiced predominantly by farmers in north India. It releases harmful gases including nitrogen oxide and carbon monoxide into the atmosphere. In recent years, this practice has created vast smoke blankets across the Indo Gangetic Plain and numerous neighboring States, including Delhi. This directly exposes millions of people to air pollution. As per a TERI (The Energy and Resources Institute) report, in 2019 the air pollution in New Delhi and other parts of north India was 20 times higher than the safe threshold level as prescribed by the World Health Organization. Stubble burning also has a deleterious impact on soil fertility, destroys organic fertilizers and reduces ground water levels. Stubble burning during a pandemic could worsen the situation by making lungs weaker and people more susceptible to disease. It could also impact those recovering from infection. In 2013, stubble burning was banned by the Punjab government. In 2015, the National Green Tribunal imposed a ban on stubble burning in Rajasthan, Uttar Pradesh, Haryana and Punjab and directed government to assist farmers by obtaining equipment like happy seeders and rotavator. Stubble burning is an offence under Section 188 of the Indian Penal Code and the Air (Prevention and Control of Pollution) Act of

1981. Recently, in *Aditya Dubey v. Union of India*, the Supreme Court appointed retired apex court judge Justice Madan B. Lokur as a one man committee to monitor and provide steps to prevent stubble burning activities in Punjab, Haryana and U.P. Haryana submitted that numerous steps are taken to curb stubble burning in Punjab and Haryana, including the development of an app to detect and notify authorities about stubble burning committed in a particular field. Now the Union government has brought out an ordinance to set up a permanent commission for air quality management, which will replace the Justice Madan B. Lokur Commission.

NEW REVOLUTION

A revolution in timely stubble removal is the need of the hour. The action plan of Punjab and Haryana appears to focus more on setting up Custom Hiring Centres which will facilitate farmers removing stubble by providing them with machinery such as the happy seeder, rotavator, paddy straw chopper, etc. on rent along with the supply of more balers. As per a study by the International Maize and Wheat Improvement Centre, the application of happy seeders and super SMS machines can improve agricultural productivity by 10% to 15% while reducing labour costs and allowing the soil to become more fertile. This year, the Union government is testing an innovative method, the PUSA Decomposer, developed at the Indian Agricultural Research Institute, Pusa. The PUSA Decomposer is a set of four tablets made by extracting fungi strains that help the paddy straw to decompose at a much faster rate than usual, giving farmers the option to shred the straw, spray a solution containing the fungal strains, and mix it with the soil for decomposition. If methods such as this become successful, it will be a new revolution in farming. This has the potential to both reduce air pollution and increase soil fertility.