

BIO DECOMPOSER SOLUTION AND SPRAY PROGRAMME – FIGHTING STUBBLE BURNING

In a nutshell: To fight pollution caused by stubble burning by providing Bio-decompose spray to farmers

Nodal agency: Agriculture Unit, Development Department, Government of NCT of Delhi

Delhi's air pollution and smog woes during the winter season are largely due to the burning of crop residue in farms in nearby regions. In 2021, the Government of the NCT of Delhi launched a unique programme - the bio-decomposer and spray programme - to reduce the number of cases of stubble burning, and thereby reducing the amount of harmful gases released into the atmosphere.

The programme was launched with the aim of eliminating pollution caused by stubble burning, by providing bio-decomposer spray, free of cost, to farmers to convert stubble into manure.

The programme, launched at Kharkhari Nahar village in Southwest Delhi, uses a bio-decomposer solution, which is a mix of seven fungi that produces enzymes to digest cellulose, lignin and pectin in paddy straw. The liquid formulation is formed using decomposer capsules and is fermented over 8-10 days. This mixture is then sprayed on the fields with crop stubble to ensure speedy bio-decomposition of the stubble. The microbial solution can turn stubble into manure in 15-20 days.

The bio-decomposer liquid is a ready-to-use spray which requires no further multiplication. This manure can then be reused in the fields, thereby eliminating the need to burn the stubble, and causing pollution. Funded by the Government of the National Capital Territory of Delhi, the programme has been scaled up under the guidance of Indian Agricultural Research Institute (IARI), Pusa.

Impact

- The soil organic carbon has increased by 5.36 to 42.11% and the available nitrogen increased by 2.70 to 24.21% in the paddy fields where spraying was done.
- Seed germination of Wheat increased by 17% to 20%.
- Consumption of DAP and urea reduced by 20-25 kg. per acre.
- Average wheat productivity increased by 3% - 3.25 % quintal per hectare.

Challenges

The Delhi government conducted a third party study through Water and Power Consultancy Service (WAPCOS) Limited, a GoI undertaking under the Ministry of Jal Shakti, to assess the impact of the bio-decomposer. As per the WAPCOS report, despite its many advantages, the project faced some resistance from the farming community during its initial stages. However, the Delhi government allayed their fears and provided them with the decomposer free of cost. Another challenge was the unexpected rain that caused delays in the scheduled time of spraying the decomposer. Despite the multiple challenges it faced, the bio decomposer solution is a game-changing step towards ensuring a smog-free New Delhi during the winter months.