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Pusa Decomposer: An Effective Curb to Crop Residue Problem

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Introduction

India is the 2nd largest agriculture based economy with year-round crop cultivation and therefore generates a huge amount of agricultural waste including crop residues. In the absence of appropriate sustainable management practices, approximately 92 metric tons of crop waste is burned every year in India, causing excessive gaseous and particulate matter emissions and air pollution. Crop residue burning has become a major environmental concern causing health related issues as well as major causing factor in global warming. The grave situation of rising levels of air pollution caused by crop residue burning in the various parts of country, especially the northern parts of India observed in recent years, especially in and after the year of 2015. The solution to curb crop residue burning lies in the effective implementation of sustainable management practices. Pusa Decomposer, a microbial spray, developed by the Indian Agriculture Research Institute (IARI), Delhi, is the harbinger of hope to end the issue of paddy residue burning which is common practice especially in the paddy growing fields of Punjab, Haryana, Uttar Pradesh and adjoining Delhi for the last half a decade.

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Pusa Decomposer:- hold promise against issue of residue burning and are available in the form of capsules made by extracting fungi strains that accelerate the decomposition of paddy straw and other crop residues at a much faster rate than its usual rate. The fungi help to produce the essential enzymes for the degradation process.

Decomposer Mixture: It involves making a liquid formulation using decomposer capsules and fermenting it and then spraying the mixture on fields with paddy crop straw to ensure speedy bio-decomposition of the stubble. The farmers can prepare 25 litre of liquid mixture with one kit containing 4 capsules of Pusa decomposer, jaggery and chickpea flour.

Preparation of mixture and application: Decomposer mixture is prepared by using around 250 gm jaggery boiled in approximately 5 lt water. Then mix around 50 gm of finely grounded chickpea flour. Cover it with thin cloth and left it for fermentation for a period of 4-5 days in dry place. One can use this culture for further preparation of the decomposer solution and it takes around 10-12 days. For one acre land around 10 lt of decomposer solution is sufficient. After spraying the decomposer solution turn the soil thoroughly. Also, ensure the adequate supply of water in the fields.

Time to Decompose: It takes around 20 days for the degradation process to be completed. Under usual circumstances, shredded and watered paddy straw, which is mixed with soil, takes at least 45 days to decompose.

Benefits: The decomposer will improves the fertility and productivity of the soil as the crop stubble works as manure and compost for the crops and will lessen the fertiliser requirement in the future. The soil loses its richness due to stubble burning and it also destroys the useful

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bacteria and fungi in the soil apart from causing harm to the environment. It is an efficient and effective, cheaper, doable and practical technique to stop stubble burning. It is an eco-friendly and environmental friendly technology and will contribute to achieve Swachh Bharat Mission. It is highly cost effective; one kit containing 4 capsules of Pusa decomposer is only cost Rs. 20 and can be used for preparation of 25lit. of decomposer spray.