

Researchers devise a new method to eschew stubble burning

New Delhi, Sept 24 (India Science Wire): From the last few years onset of winters brings a worry that is of stubble burning or crop residue burning. It gives rise to many problems. Like it aggravates the problem of air pollution particularly in Northern India as it brings down the air quality index to dangerous levels.

Scientists at Indian Agriculture Research Institute (IARI) have come up with a solution to tackle the problem. They have developed PUSA Decomposer, which are in the form of capsules made by extracting fungi strains that help the paddy straw to decompose at a much faster rate than usual. "The fungi used has to be amyolytic and ligninolytic that can produce the essential enzymes for the degradation process. If it is given at the right time then it should take around 25 to 30 days for the degradation process to be completed" said Dr K. Annapurna, Head, Microbiology Department, IARI while speaking with *India Science Wire*. Under usual circumstances shredded and watered paddy straw, which is mixed with soil, takes at least 45 days to decompose. It does not give enough time to farmers to prepare fields for the wheat crop on time.

The capsules have to scale up 25 liters of the formulation. To make the formulation 150 grams of old jaggery may be boiled with water. The dirt should be removed that came out during boiling after that it should be cooled. This solution then has to be mixed in about 5 liters of water. After this, 50 grams of gram flour should be added to it. Now 4 capsules should be mixed in it and this solution should be placed in some warm place for at least 5 days. To make 25 liters of formulation out of 4 capsules it takes around 8-10 days.

"Once the scaling up is done the formulation has to be diluted using another 200 liters of water for one acre of paddy straw. Every acre of paddy generates about 4-5 tons of straw so in every acre there would be around 4-5 tons of straw" pointed out Dr Annapurna.

The method will be cheap and also result in better soil quality. "Based on our experiments, the cost of employing this method will come to about Rs 300 per acre, including the cost of labour. That is not the only benefit though. When organic matter decomposes in sand, it improves the quality of soil in a way that inorganic fertilizers cannot. As the fungi only impact dead straw, the wheat crop is not in danger," observed Dr AK Singh, Director, IARI. (India Science Wire)

Keywords: PUSA Decomposer, paddy straw, crop residue burning, stubble, fungi, IARI

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Stubble burning (Image: Creative Commons)