

# Microbial Decomposer Capsule

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**In News:** scientists have developed a bio-decomposer technique called 'PUSA Decomposers' for converting crop stubble into compost.

## What is Decomposition ?

- Decomposition refers to a biological process of breaking down organic material into smaller constituent parts.
- The decomposition of organic substances is ecologically significant. It plays a part in the nutrient cycle. It is an essential process of recycling matter in the biosphere.
- A decomposer is an organism whose ecological function involves the recycling of nutrients by performing the natural process of decomposition as it feeds on decaying organisms.
- Examples of decomposers are fungi and bacteria that obtain their nutrients from a dead plant or animal material.
- They break down cells of dead plants and animals into simpler substances, which become organic nutrients available to the ecosystem.

## Pusa Bio-decomposer

- It is a solution developed by the scientists at the Indian Agricultural Research Institute, Pusa, which can turn crop residue into manure in 15 to 20 days and therefore, can prevent stubble burning.
- It involves making a liquid formulation using Pusa decomposer capsules and readily available inputs, fermenting it over 8-10 days, and then spraying the mixture on fields.
- It is a mix of seven fungi that produce enzymes to digest cellulose, lignin and pectin in paddy straw.

- The fungi thrive at 30-32 degree Celsius, which is the temperature prevailing when paddy is harvested and wheat is sown.

### **Benefits of PUSA decomposers:**

- Improves the fertility and productivity of the soil as the stubble works as manure and compost for the crops and lesser fertiliser consumption is required in the future.
- It is an efficient and effective, cheaper, doable and practical technique to stop stubble burning.
- It is an eco-friendly and environmentally useful technology.

### **Mobile apps to Display AQI**

#### **SAMEER :**

- Launched in October 2017, SAMEER provides information on air quality to the public.
- It also has provision for registering complaints against air polluting activities.
- Air quality information collection and dissemination are done from a centralized location.
- It provides real-time air quality status to all stakeholders apart from hourly updates on the National Air Quality Index (AQI) published by the Central Pollution Control Board.

#### **SAFAR:**

- An integrated early warning System of Air Quality and Weather Forecasting and Research (SAFAR) was launched to provide forecast of the Air Quality and Weather 72 hours in advance.
- SAFAR is operational in four cities – Delhi, Pune, Mumbai and Ahmedabad.