



Shriram Institute for Industrial Research

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SIIR developed Technology to Convert Press-mud into Bio-enriched Organic Fertiliser

Introduction

India is highly dependent on agriculture, which is the main income source and employment-generating sector for the economic growth of the country. India is one of the major commercial producers of sugar from sugarcane in the world.



The bagasse, molasses and pressmud are the major waste products obtained from the sugar industry, to handle such a large quantity of waste products, safe and eco-friendly disposal is required. Sugarcane pressmud is the residual solid product obtained from sugarcane juice before crystallisation of sugar. The clarification process separates the juice into a clear liquid and mud, which collects at the bottom.

Due to high nutrient value of sugarcane pressmud it is valuable for soil-nutrition, thus SIIR offers technology transfer to sugarcane industries by which sugarcane pressmud is converted to bio enriched organic manure through microbial consortium thereby

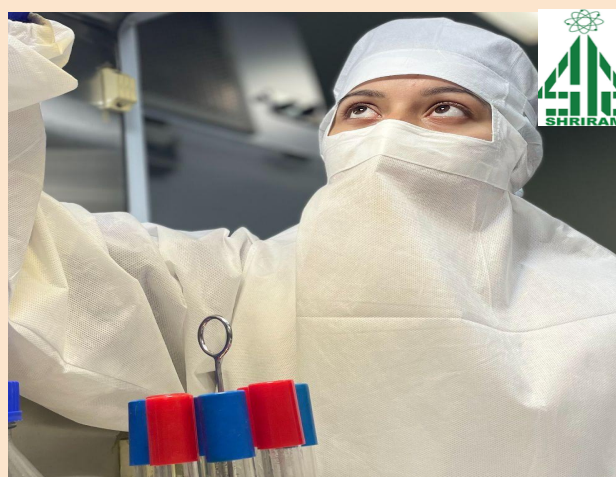
leading to sustained soil fertility and enhanced crop productivity.

Why is sugarcane pressmud a concern?

In our country there is a huge accumulation of sugarcane by-products, a lot of this material is not being utilised in a productive manner and one of the best examples is sugarcane pressmud, the rejected waste material of the sugarcane industry which causes pollution to surroundings of sugar mills on its accumulation. Though, it can be used as a composting material with suitable aerobic microbial activity which converts into stable material known as bio compost (organic manure).

How can SIIR help in addressing this problem and help sugarcane industries to overcome sugarcane pressmud?

SIIR provides a solution for potential target users of sugarcane industries with twin objectives of safe waste management and sustainable agriculture by converting the industrial pollutant into nutritive



biofertilizer or plant probiotics. The microbial aided consortia system would rapidly convert the sugarcane pressmud under *in-vivo* conditions to produce organic manure with minimal inputs within a short period of time. The final product obtained in lab



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scale (SIIR, Delhi) as well as in pilot trial (Daurala sugar works) lies within the acceptance criteria of bio-enriched organic manure as per the Fertiliser Control Order (FCO).

What is the SIIR proposal?

- Introduction of novel technology in formulation of organic manure for the agricultural sector.
- Producing organic fertiliser from sugarcane pressmud will ease the waste treatment burden of sugar processing plants.

Why is SIIR the right platform under “AtmaNirbhar Bharat” with a concerned problem?



Shriram Institute for Industrial Research is an independent, self-sustaining, non-profit multidisciplinary Indian institute established in 1947. SIIR is the only Institute in the country which has In-house world class infrastructure for various sectors which can offer inter-departmental and cross-functional capabilities and is a part of the journey of “Atma Nirbhar Bharat”. The ‘bio enriched organic manure’ as a by-product is marketable; there is significant contribution to the economy out of the waste management. Bioconversion of sugarcane pressmud

and its biotransformation to a value added product would contribute towards uniting the environment and economy (e- eco) by developing innovative; ‘bio-safe’ waste treatment technologies of national and global importance.

Target users and application area

Sugarcane industries are potential target users. The greatest advantage of composting technology is that it is “on site” treatment and there are no additional problem of economic and environmental cost.

Fig: A) Windrow of 100 MT sample of

Fig: B) Mixing of pressmud by DSW Aerotiller pressmud after inoculation at Pilot Trial at Pilot Trial

Path forward

SIIR will be happy to have a partnership with affected sugarcane industries in states and national level.

Meet our technical experts and witness the infrastructure developed at SIIR to solve this problem.