



PRESSMUD

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ABSTRACT

Sugarcane is one of the largest produced crop of India whose byproducts are usually thrown away. The byproducts of sugarcane include pressmud, baggase, molasses which are a great organic source. Pressmud also called filter cake is the byproduct formed during the generated during the purification of sugar by carbonation or sulphitation process. Pressmud as bio compost used to maintain soil fertility and enhance crop production because it is rich in sugar and contains appreciable amount of essential plant nutrients. When 100 t of sugarcane is crushed, about 3 t of press mud are produced as a by-product. Agricultural crop production, build up a significant amount of organic carbon in soil and improve soil health. Pressmud is used as organic manure along with vermicompost and will improve the soil structure, soil texture and improve soil aeration.

KEYWORD-Pressmud, Sugarcane, Properties

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I. INTRODUCTION

The Indian sugar industry, second largest in the world, is a key driver of rural development, supporting India's economic growth (Solomon, 2016). It is cultivated on about 26.9 million hectares (M ha), in more than 109 countries, with a worldwide harvest of 1.91 billion tonnes (Factfish, 2015). Total production of **Sugarcane** in India, during 2022-23 is estimated at 4905.33 Lakh tonnes (PIB, 2023). Brazil is a large producer of sugarcane in the world. The next five major producers, in decreasing amounts of production, are India, China, Thailand, Pakistan, and Mexico (Sarwar et al. 2010). Sugarcane is one of the world's oldest commercial and viable crops in the tropics and sub-tropics. It is a significant source of raw materials, not just for sugar, as well as other related groups of industries (Sumit et al, 2023).

The sugar processing industry not only serve the food diet, but the side product has also a significant role in energy generation, medicines and chemical products (Bruna et al, 2015). There are mainly three side-product of sugar processing industry bagasse (25–30% cane) after crushing of sugarcane, pressmud (3–5% cane) after clarification and molasses (3.5–5% cane) after centrifuge (Omprakash, 2018).

PRESSMUD

Press mud is a solid residue, obtained from sugarcane juice before crystallization of sugar (Malik et al, 2019). Press mud is also a byproduct of the sugar industry and known to filter cake which contains 75–80% moisture; 2–5% of sugar and 5–10% of fibers (Omprakash, 2018) which is characterized as a soft, spongy, amorphous, and dark brown to brownish material (Ghulam et al. 2012). Press mud supplies a good amount of organic manure (Bokhtiar et al. 2001). It contains significant amounts of iron, manganese, calcium, magnesium, silicon, and phosphorus, and enhanced the suitability of SPM as a source of nutrient (Yadav and Solomon 2006). Composted pressmud contains N, P, K, Mg, Ca, etc. which are nutrient source and can help in the plant growth. Pressmud also contains micronutrients viz., Zn, Cu, Fe and Mn. (Aparna and Gunjal, 2021)



Fig 1: Pressmud

PRESSMUD ON SOIL AND PLANT

Composted pressmud contains N, P, K, Mg, Ca, etc which are nutrient source and can help in the plant growth. Pressmud also contains micronutrients viz., Zn, Cu, Fe and Mn (Aparna and Gunjal, 2021). It prevents soil erosion, crusting and cracking, adjusts soil pH, improves drainage and promotes normal bacterial and microbial growth in the soil. It is also used as soil reclaimant and soil conditioner (Moshfekus et al, 2012). Pressmud is mixed with vermicompost and is applied as organic manure. Improves the structure, texture & quality of the soil, Improves the water holding capacity of the soil as this compost contains fibrous material like decomposed coir waste & other Agriculture biomass (Sunil et al, 2017). Pressmud can reduce the water need of the crops as well as they are rich in nutrients which helps in increasing soil health and quality.



Fig: Formation of pressmud

Pressmud makes the soil rich in microorganisms that help in the proliferation of the root hairs & lateral roots of the tap root/fibrous root system. Addition of pressmud improves soil aeration and drainage in heavy soils, whereas in sandy soils it helps in improving the retention of moisture. When added to agriculture fields it increased the cane yield, improved the juice quality and enhanced the ammonifying power of the soils (Hussain et al, 2001).

). Pressmud application as fertilizer has enhanced in fungal, bacterial and actinomycetes populations by application of pressmud in agricultural soils mark their roles in decomposition of organic materials to release nutrients for plants growth and development(Sunil et al,2017)

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