



Electrical Conductivity (dS/m) Study for Agricultural Benefits after Optimization of Bio-Methanated High TDS Spent wash from Distilleries

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ABSTRACT

The Spent wash is a beneficial by product produced from distilleries after extraction of ethyl alcohol from molasses. Being a plant extract, which is derived from sugar cane and contains nutrients and easily oxidisable organic matters. Spent wash is a rich source of organic matters and nutrients like N, P, K, Ca, and S. in addition to that sufficient amount of micro-nutrients such as Fe, Zn, Cu, Mn, B, Mb etc. It does not contain any toxic heavy metals and Hazardous constituents therefore it increases the soil fertility to increase the yield. Salinity of Soil, its structure and texture along with water availability can be studied by electrical conductivity.

Index Terms— Ethyl alcohol, Molasses, Spent wash, Anaerobic, Bio-methanation, Salinity, Electrical Conductivity.

I. INTRODUCTION

Sugar Industries globally gives lot off inputs like food items(Jagger y, sugar), Beverages, spirits, organic solutions and even waste water known as Spent wash. This Spent wash is a waste product and can be discarded to water resources or neighbouring lands but, if industries do so means it creates lot of Environmental pollution, so it is necessary to all the industries to follow treatment methodologies to avoid unnecessary harm to the environment, the treated spent wash if optimized thoroughly gives duel benefits to the mankind in the form of methane gas (bio gas) and as a fertilizer, to enrich soil fertility.

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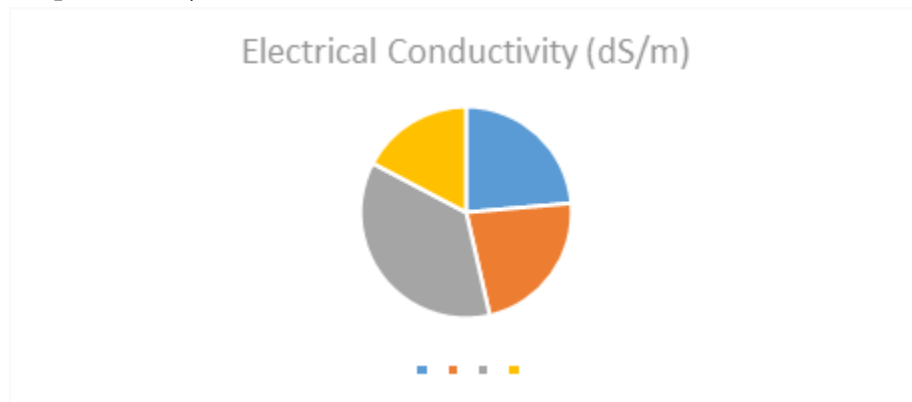
II. METHODOLOGY

Based upon UASB method Anaerobic Biomethanation process is carried and also Physical, Chemical characteristic parameters were studied along with microbial culture, pH study, and obtained optimized Spent wash is added to mud in the following order for two days and dried, subjected to determination of Electrical conductivity of soil the following results were obtained.

Table

S.N	Electrical Conductivity (dS/m)	Spent wash in ml/Soil in kg	Result
1	0.56	40ml/kg- type-1 soil	It is observed that depending upon the soil type salinity is moderate in all.
2	0.54	60ml/kg-type-2 soil	
3.	0.86	30ml/kg-type-3 soil	
4.	0.41	50ml/kg-type-4 soil	

Graphical study



Blue- 0.56 dS/m, Grey - 0.86 dS/m, orange-0.54 dS/m and yellow - 0.41 dS/m



Electrical Conductivity meter used



soil type-1

III. RESULTS AND DISCUSSION

According to obtained data the result is It is observed that depending upon the soil type salinity is moderate in all, and from that it is not much hazardous to the soil with respect to the above-mentioned ratio and spent wash

added in milliliter to soil type in kilogram. So fertility is not affecting much as the spent wash sprayed on soil in the form of press mud.

IV. CONCLUSION

Spent wash obtained from distillery as waste product can be used in dual mode as a biogas generation and also as manure to spray on the mud especially for agricultural purposes based upon the proper ratio along with mud as press mud.

V. REFERENCES

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