

Utilisation of Waste's from Sugar Industries

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Abstract: *Sugarcane industries are age-industrial practices in India which contribute a significant amount of by-products as waste. Handling and management of these by-products are huge task, because those require a lot of space for storage. However, it provides opportunity to utilize these by-products in agriculture crop production as organic nutrient source. Therefore, it is attempted to review the potential of sugar industries by-products, their availability, and use in agricultural production. Sugarcane today is considered as one of the best converters of solar energy into biomass and sugar. It is a rich source of food (sucrose, jaggery and syrup), fiber(cellulose), fodder(green leaves and tops of cane plant, bagasse, and molasses and some extent pressmud), fuel and chemical. The main by-products are bagasse, molasses and pressmud.*

Keywords: Bagasse, Molasses, Pressmud, Water, Sugarcane, Furfural, greenbricks

1. Objectives

The other products and their by-products of less commercial value are green leaves and tops, trash, boiler ash and effluent generated by sugar industry and distillery. Many countries have thought of diversification and utilization of its by-products. In the case where economies entirely depend on sugar export earnings any fall in international rates shatter their economies. They find it wise to diversify the activities of this sector by setting up industries based on by-products. Though many products can be made, production of few is financially available. About 500 tons of industrial wastes (liquid and solid) being discharged daily from sugar factory during crushing season and presently dumped in vicinity of the sugar factory. The of wastes, however, depends on the crushing capacity of sugar mills. Studies for recycling and compositing of sugarcane industrial waste by-products.

2. Introduction

Indian sugar mills produced approximately 160 lack tones of sugar. India is now the largest sugar producing and sugar consuming country in the world. The sugar industry plays an important role in Indians economy. It is the largest among the processing industries next to cotton textiles. Located in rural areas, sugar mills have been intrinsic symbiotic relationship with the rural masses and serve as a nerve center for rural development. During the process of manufacture of sugar, a sugar mills produces several wastes use as molasses, bagasse, pressmud, waste water, bagasse ash of the above, molasses and bagasse have become valuasble by-products of the sugar industry and cannot be therefore termed as wastes any longer.

3. Methodology

Baggasesmould,Cement ,Benzene,propane 2 ol

4. Procedure

Baggase- It is the by-product of sugarcane industries during the extraction of juice from cane. It is dry pulpy residue and fibrous in nature. It is used as a bio-fuels or in industrial level; it is used as a binding material. In general, bagasse

contains major portion as cellulose, hemi cellulose, and lignin are 47–52, 25–28, and 20–21 %, respectively.

Uses:-Baggase is used as a fuel for producing electricity,It is used in manufacturing of plywoods,It is used in manufacturing of paper(banana paper)method of making banana paper

Step 1: pour the gallons of water In the rectangular plastic container.

Step 2: place 1 ½ cup dried chopped bagasse and 3 cups of water into the blender. blend on high for one min. pour the bagasse solution into the water basin. Repeat the process one time.

Step 3: use your hands and stir the solution in the plastic container. Evenly distribute the fibers through the water.

Step 4: put the two parts of the deckle together with the empty frame on top and hold firmly. Slide the 8-inch edge of the deckle into the water next to an 11-inch edge of the plastic container. slide the deckle along the bottom of the container until it is completely submerged.

Step 5: slide the deckle back and forth along the bottom of the container. Continue the motion and lift up slowly until the deckle is entirely out of the water. Hold above the container, allowing the excess water to drain.

Step 6: remove carefully the top frame from the deckle. Center and place the chamois over the top of the bagasse paper. Press the chamois lightly to begin absorbing the water on the bagasse paper. Quickly flip the deckle over so the chamois is on the bottom and laying on the flat surface. Gently remove the screen from the surface of the paper. Allow the paper to dry 24 hours before use. also in making of tissues and towel products, In making of green bricks, Step: 1sugarcane bagasse first must be burned to get the ash.Step2: the sugarcane ash was mixed with the sugarcane baggase that not be burnt then mix thoroughly.Step3: after that, the mixture then was added with cement.Step4: then, mixture is then added with water to make compounds mixture. Step5: the mixture then was put into the mould and leave it dry for about 1 week.Furfural, methane,turning sugar waste into light- these forms tiny carbon nano-particles can serve as biosensors and light-emitting

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diodes. Press mud:-The precipitated impurities contained in the cane juice, after removal by filtration, form a cake of varying moisture content called filter muds. This cake contains much of the colloidal organic matter anions that precipitate during clarification, as well as certain non-sugars occluded in these precipitates. Uses:-It is used in sericulture for promoting normal bacterial growth, and extract the wax from press mud. It is used in medical application for preparing the medicine like polycosanol. Wax used in chocolate thin coating and keeps vegetables fresh dip in wax emulsion. Used in production of biogas.

Molasses: Molasses is the final effluent obtained in the preparation of sugar by repeated crystallization; it is the residual syrup from which no crystalline sucrose can be obtained by simple means. The yield of molasses is approximately 3.0 percent per tone of cane but it is influenced by a number of factors and may vary within a wide range (2.2 to 3.7 percent). The specific gravity varies between 1.39 and 1.49, with 1.43 as indicative average.

Uses: it is used in preparation of rectified spirit, and ethyl alcohol, acetic acid, butanol- acetone, citric acid, yeast (baker's yeast), industrial alcohol as cooking fuel

Health Benefits of Molasses:

Antioxidant: used as Antioxidant in cancer and cardiovascular disorder, used good source of iron for menstruation for women, obesity-, it was evident that its extract helps in lowering the body weight and fat content by the reducing the absorption of calories in the body, constipation- Molasses has been proven to be valuable in treating consumptions. Research studies have shown that routine milk and the molasses enemas are as effective as sodium phosphate enemas given in the pediatric emergency department to cure constipation, healthy bones- Black strap molasses is a good source of calcium, which plays an important role in maintaining bone health, the functioning of enzyme system, the removal of toxins from the colon and cell membrane function, rheumatism- Molasses has been effectively utilized in the preparation of medication for treating rheumatism and neuralgia. The anti-inflammatory and antioxidant properties of molasses make it a reliable ingredient for curing such disorders, diabetes- Blackstrap molasses helps in stabilizing blood sugar levels

Waste water: Rich in lather, acidic, mixed with oil, black brown to yellow color water that goes down drains from sinks, showers, toilets, laundries, industries, factories, mills etc is dirty, it is called waste water this used water should not be wasted we must clean it up by removing pollutants.

Treatment of waste water- Nutrient removal, BOD/COD removal, Suspended Solids removal, Color removal Others (sulfide removal, heavy metal removal, etc.) Sludge dewatering. How can recycled water benefits us?

Recycled water can satisfy most water demands, as long as it is adequately treated to ensure water quality appropriate for the use. types of treatment processes and suggested uses at each level of treatment. In uses where there is a greater chance of human exposure to the water, more treatment is required. As for any water source that is not properly treated,

health problems could arise from drinking or being exposed to recycled water if it contains disease-causing organisms or other contaminants.

Uses of recycled water- agriculture, landscape, public parks, golf course irrigation, cooling water for power plants and oil refineries, processing water for mills, plants toilet flushing, dust control, construction activities, concrete mixing, artificial lakes

5. Conclusion

The time when cost of chemical fertilizer is skyrocketing and not affordable by farmers, press mud has promise as a source of plant nutrient and as a medium for rising sugarcane seedlings and leguminous inoculants. Wastes produce from sugarcane industries are organic in nature, and it augmented the soil chemical, physical, and biological properties as well as improves crop yield and quality.

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