A Review On Uses Natural Fibres For Industrial Watse Water Treatment

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Abstract- *Water safety and Security are Global Problems. Indeed, researchers have taken this matter seriously and have begun to find Alternative ways of Treating wastewater. Biosorption Techniques and mechanisms have shown to be effective Alternative to replace Conventional Technologies. This review has Explore The role Natural Fibres as adsorbents for waste water treatment while at the same time, for the removal of adsorbates such as oil, dyes, heavy metals, ionic compounds and others as reported in the literature also investigated in this study,were the different modification types used to enhance the fibres and the mechanism of contaminant removal by the absorbents.*

Keywords- Adsorbents ,Natural Fibres, Biosorption, Wastewater, Coconut Fibres, Palm Fibres

I. INTRODUCTION

Water is one of the primary necessities to sustain life. As reported by the united nations, in 2017, the estimated world populations of 7.6 billion is placing increasing pressures on the worlds limited water resources. However, While more water is being consumed, the quality of water is declining due to the significant of amounts of pollutants being discarded into the worlds river systems, lakes and oceans each day. Therefore different approaches must be employed for wastewater treatment.

Points source pollution originates from a single, specific sites such as municipal or industrial waste. Industrial point sources contribute heavy metals, toxic contaminants and oils.

Higher specific surface area, fibrous materials are often considered a better choice for increased microbial support and treatment efficiency.

Using synthetic fibrous materials as a fixed media in the wastewater treatment but only limited efforts have been made to use naturals fibrous materials such as Palm tree and Coconut coir as submerged aerated bed. Natural fibres have low density, low relative cost and good biodegradiability while polymers have high resistance to moisture and impact .

II. OBJECTIVES

1. To study the performance of the Coconut fibres used as Filter Media.
2. To study the removal efficiency of COD, BOD, Sulphate, Nitrate using Palm tree and Coconut coir fibres.

III. MATERIALS

TYPES OF NATURAL FIBRES

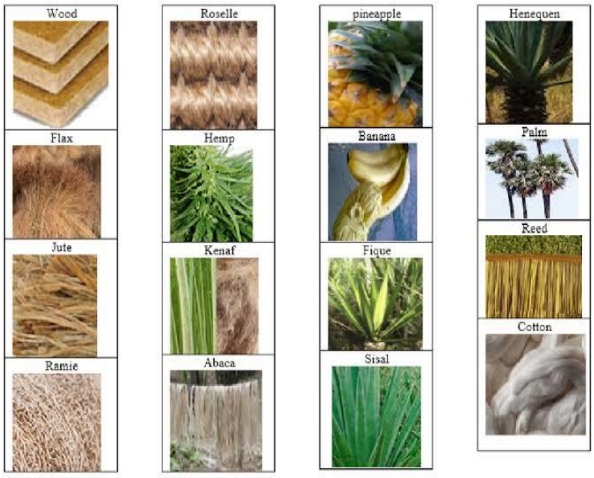

Fig.no.1

Fiber Source	Origin	% Cellulose
Banana	Leaf	60,0 – 65,0
Coir	Fruit	32,0 – 43,0
Cork bark	Leaf	12,0 – 25,0
Corn cob	Stalk	33,7 – 41,2
Cotton	Seed	82,7 – 95,0
Curaua	Leaf	63,4 – 73,6
Flax	Stem	64,0 – 84,0
Hardwood	Stem	39,0 – 50,0
Hemp	Stem	67,0 – 78,0
Jute	Bast	51,0 – 78,0
Kenaf	Bast	44,0 – 72,0
Maize Straw	Straw	28,0 – 44,0
Nettle	Bast	53,0 – 86,0
Ramie	Bast	67,0 – 99,0
Rice Husk	Straw	25,0 – 35,0
Softwood	Stem	42,0 – 50,0
Sugar cane bagasse	Stem	32,9 – 50,0
Sisal	Leaf	60,0 – 73,0
Wheat Straw	Stalk	30,0 – 35,0

Fig.no.2

Coconut Fibres : coconut fibre, is a natural fibre extracted from the husk of coconut and used in products such as floor mats, doormats, brushes and mattresses. Coir is the fibrous material found between the hard, internal shell and the outer coat of a coconut.

Uses in industirial waste water :

1. used as an Oil and Fluid Absorption.
2. used as an filter media.
3. Coconut coir pith is a waste product in abundance in countries where coconut is a major agriculture product.

Palm tree Fibre : Palm fibers typically are composed of about 63 % cellulose, 18 % hemicellulose, and 18 % lignin. Natural cellulose fibers have been extracted from various types and parts of the palm tree.

Uses in industrial waste water :

1. Used as an Bioorganic filter media
2. Used as an Horizontal screening.

IV. PROBLEM STATEMENT

Wastewater treatment and disposal is a serious over world wide. there are several methods to treat industrial waste water industrial water contains chemicals and high amount of organic matters so we have to design a treatment process which is able remove organic matter with filter media from waste water Natural fibres like Coconut fibre and Palm fibre they acts as a filter material we use filter media of locally available material in vertical flow column to treat waste water natural fibres have different filtering efficiencies.

V. METHODOLOGY

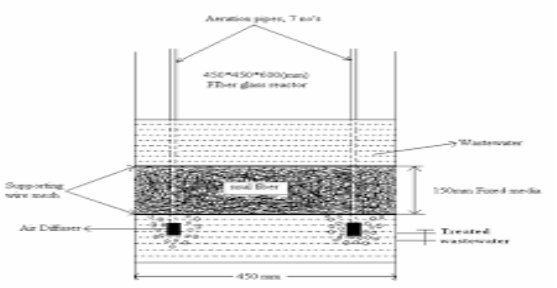

Fig.no.3

Two Different Fibrous packing materials used for the present study, Coconut fibre and Palm fibre

Procedure of making Aerated base

Step 1- Selection of an industrial waste.
Step 2- Selection of materials.
Step 3- Selection of natural fibres material and glass Aquariam.
Step 4- Making a Glass Mould.
Step 5- placing of a fibres in Mould.
Step 6- Tests Carried on Sample-B.O.D, C.O.D, pH, Nitrate

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