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MICROBIAL INOCULUM FOR THE MANAGEMENT OF COFFEE PULP EFFLUENT

Introduction: The product is "Inoculum" itself. This inoculum consists of three yeasts cultures, which will help in the breakdown of complex molecules present in coffee pulp helping in the management of coffee pulp effluent. Normally, $CaCO_3$ is used and the chemical is expensive to farmers and usage quantity has not been standardized based on the TDS of the effluent. The compounds precipitated by $CaCO_3$ in the form of calcium pectate are insoluble; hence secondary disposal is a problem. The effluent left after precipitation has copious amounts of sugars leading to growth of natural micro-flora and putrefaction. This leads to air, water and soil pollution. The present method is a biological process of waste disposal and the organism is natural, non-pathogenic, can be produced easily.

Use: Coffee pulp effluent is a waste material with restriction on its disposal as it is an environmental pollutant. Due to its high acidic nature and the presence of polyphenolics, coffee pulp is considered phytotoxic. Hence, disposal of this waste has been a problem. Even though coffee pulp effluent has copious amounts of sugars in the form of pectins; polyphenols resist degradation leading to the requirement of storing the waste for a long period of time. Due to the development of acidic pH under natural condition during the initial period of degradation, the pectic material gets precipitated as pectic acids and float on the top of forming a thick scum, which leads to the development of anaerobic condition. During anaerobic degradation gases produced leads to putrefaction and gases like H_2S, CO_2, CO are released leading to air pollution. The above said problems can be managed by using microbial cultures.

Shelf life of the product is about 2 months.

Raw material : Yeast extract, Peptone, Dextrose media), Lactose, Distilled water etc.

EQUIPMENTS REQUIRED: Autoclave, Laminar Air Flow, Centrifuge, pH meter, shaker Incubator, Refrigerator, Deep Freezer, Drum Mixer , Moisture Meter, Colony Counter etc.

PROJECT REQUIREMENT (an estimate) :

Land (Approx. in Sq. Metres)	1000
Building (Approx. in Sq. Metres)	120
Plant & Machinery (Approx. Rs. in '000)	400
Total Project cost (Approx. Rs. in '000)	2000

Cost of production / Kg : ~ Rs. 11

CAPACITY :

Capacity: 25 ltrs of inoculum/day
Working days : 250 days/ annum