

LIPASE PRODUCTION BY LIPID DEGRADING BACTERIA SPECIES IN WASTE WATER IN EMBU, KENYA

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B132/11144/2014

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Abstract

Lipids are hydrophobic non polar and made up of hydrocarbon chains. Lipid degrading bacteria are able to completely remove lipids in waste water by use of lipase enzyme. Other microorganisms such as yeast, bacteria and molds have been observed to be capable of degrading lipids completely. High lipid concentration contained in waste water cause clogging of sewage pipes and this in return results to overflowing of the sewage and bad odour produce by the waste in the environment. Lipids can be removed through physicochemical techniques although they are not completely removed and thus lipid degrading bacteria are required for complete removal of lipids. Since physicochemical processes used to remove the lipids in waste water treatment are costly, pollute the environment and do not completely remove some colloidal lipids there is need of using the lipid degrading bacteria which are more effective. The objectives of this study is to determine lipase production by lipid degrading bacteria species in waste water in Embu, Kenya, by isolating and purifying the lipid degrading bacteria species , determining conditions favourable for lipid degradation and accessing the rate and quantity of lipase production by the lipid degrading bacteria species. Media containing peptone water, agar and olive oil was used for enrichment of the bacteria. Serial dilution was done which was followed by colony counting .Identification of lipid degrading bacteria was carried out using biochemical test and Gram staining. The observed bacterial isolates were Gram positive, were able to utilize starch and xylose and some utilized citrate. They were also observed to produce catalase enzyme.