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Commentary

Evaluation of Palm Oil Mill Grade Yeast Biomass for Food Production

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DESCRIPTION

The most extensively used vegetable oil is palm oil, which accounts for around 33% of all vegetable oil output worldwide. Almost 93% of the world's palm oil is produced by these nations together. With about 930,000 metric tonnes produced yearly, the fifth-largest producer. Nigeria's palm oil business is a significant agricultural sector, particularly in the southern regions where palm trees are grown both naturally and on farms. Smallholders, who mainly employ manual machinery and, to a lesser extent, semi-mechanized processors to process palm fruit, account for around 80% of the palm oil business. Both techniques of processing palm fruit need a lot of water. As a result, enormous amounts of the liquid waste known as palm oil mill effluent are produced (POME). There are limited and inconsistent estimates of the amount of POME generated per liter of palm oil extracted from palm fruits. This is brought about by a number of factors, such as variations in the efficacy of the various procedures and the characteristics of the fruit. When it comes to the amount of POME created, manual methods tend to be the least effective. In certain cases, more than 10 litres of POME are produced for every liter of oil produced. One tonne of fresh fruit bunches requires between 72 litres-80 litres of water to process, with 72% to 75% of that amount ending up as POME. POME has been treated using a variety of methods, with varied degrees of effectiveness. Ponding, aerobic and anaerobic digestion, and physicochemical treatments are some of these. Without taking into account the current trend in the management of high strength agro-food wastes, which attempts to reprocess them through value addition, these strategies aim to dispose of POME. Treatment for disposal has given way to resource-beneficial usage through valorization in the management of agro-food wastes. By using efficient methods, the notion of "valorization" aims to recover value-added goods from wastes and effluents. As POME currently has little to no recycling value, it poses a risk to the environment. It slowly degrades in pits, where it generates a strong, foul odour that pollutes air, surface and ground waterways, and agricultural land in addition to attracting pests *Via* the production of microbial biomass, enzymes, energy, and biochemical, efforts have been made to value POME.

A sustainable and cost-effective technique of treatment is necessary for cost-effective disposal of POME. The attainment of a clean environment will be a plus where this can be linked with some value addition, leading to a no-loss waste treatment or a decrease in total cost. It has been hypothesised that POME might be used to produce biomass, and in this case, there is space for creativity in both the microbe selection and fermentation environment. The conception of a process for producing yeast biomass from POME is expected to speed up the cycle from raw material to finished product while also lowering costs. This will open up opportunities for the recycling of waste streams, whose accumulation and environmental impact will only grow as palm oil production increases globally. This research was done to examine the treatment and commercialization of POME using yeast biomass and to evaluate the quality of the biomass based on its amino acid composition.

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