Treatment technologies of palm oil mill effluent (POME) and olive mill wastewater (OMW) : A brief review

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Abstract:
Attributable to the enormous population growth, tonnes of effluents are unavoid-ably generated throughout the agricultural activities. The inadequate effluents disposalinduces perpetual contamination to the sea and river water sources, which has subse-quently raised the public environmental concern. For that reason, the handling protocolof agricultural effluents was flagged up as an interest area for research. Despite theenvironmental hazards, agricultural effluents have the potential to be transformed fromwastes into wealth via biological, physicochemical, thermochemical or a combinationof processes thereof. The identical characteristics of palm oil mill effluent (POME) andolive mill wastewater (OMW) render the possibility of treating these wastes using thesimilar treatment method. Generally, biological treatment requires a longer processtime compared to physicochemical and thermochemical technologies despite its easyand low-cost operation. Comparatively, physicochemical and thermochemical methodsextend their potentiality in converting the agricultural effluents into higher valueproducts more efficiently. This paper reviews the source and characteristics of bothPOME and OMW. Subsequently, a comparison of the current and alternative treatmentsfor both effluents was done before the future perspectives of both effluents' treatmentare paved based on the well-being of the human, environment, and economic.

Keywords: Agricultural effluent; Olive mill wastewater; Palm oil mill effluent; Wastewater treatment