

A Study on Zeolite Performance in Waste Treating Ponds for Treatment of Palm Oil Mill Effluent.

ABSTRACT

Oil palm currently occupies the largest acreage of farm land in Malaysia. In 2011, the production of palm oil in Malaysia was recorded as 19.8 million tons which has led to a huge amount of wastewater known as palm oil mill effluent (POME). This work focuses on the ponding system which acts as wastewater treatment plant in order to treat POME. The conventional ponding system applied in mills consists of a series of seven ponds. The maintenance costs of the pond are expensive thus study of alternative methods is needed. POME treatment using zeolite shows a potential to overcome the problem. Samples collected from selected ponds are tested and analyzed using water analyzer method. Result from adsorption by zeolite shows a significant reduction of COD, BOD, Fe, Zn, Mn and turbidity. This shows that zeolite is highly potential to be applied as adsorbent in the POME treatment plants. The results here may lead to lower maintenance cost, lower quantity of treatment ponds and lesser land occupied for the treatment of POME in Malaysia.

Keyword: Palm Oil Mill Effluent (POME), Zeolite, Wastewater Treatment