COMPACT TERTIARY PLANT FOR THE TREATMENT OF POME

by: MOHAMAD SULONG and NOORSHAMSIANA ABDUL WAHAB



MPOB INFORMATION SERIES • ISSN 1511-7871 • JUNE 2008

MPOB TT No. 382

ffluent treatment is of increasing importance to Malaysian palm oil mills as they strive to reduce their operating costs and meet the increasingly stringent standards for discharging their wastes. This article summarizes the polishing technique

This article summarizes the polishing technique for tertiary treatment of palm oil mill effluent (POME). The method allows mills to achieve long term regulatory compliance with the standards for discharge of their wastes to controlled waters and/or land application.

TERTIARY TREATMENT OF POME

Polishing or tertiary treatment of POME is generally performed as a precursor to water reuse or to minimize the organic constituent (BOD) so as to be able to discharge the waste in public water

bodies. It also removes residual suspended solids, ammonia, and colour in the final effluent.

Effluent polishing enables mills to meet strict emission consent limits or for them to reuse the treated effluent.

COMPACT TERTIARY PLANT

The compact tertiary plant (CTP) is designed for effective BOD and suspended solids reduction in POME, using an odour-free treatment in a minimum of space to produce a high quality waste.

The treatment employs biological, physical and chemical processes to reduce the organic matter content in POME. The plant can treat POME with up to 1000 mg/l BOD.

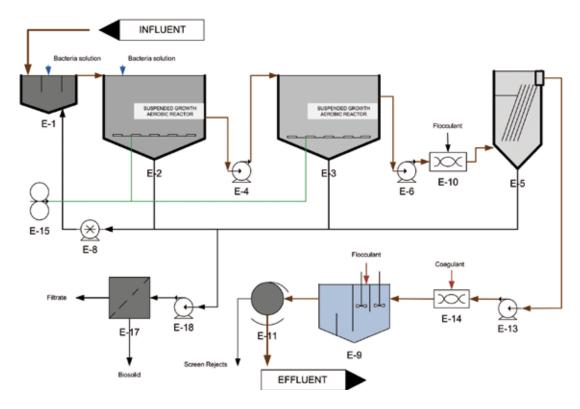


Figure 1. Process flow of compact biological, chemical and physical tertiary treatment process.





ADVANTAGES OF CTP SYSTEM

- Small footprint. CTP occupies as little as 40% of the space required by a conventional activated sludge treatment system.
- High quality effluent produced and reusable. In the CTP treatment plant, the final effluent quality can be tailored to the mill's needs.

CTP PROCESS

A typical tertiary POME treatment process is shown in *Figure 1*.

COST

The estimated cost for a CTP plant for a 30-tonne FFB hr¹ palm oil mill is RM 1.4 million, depending on the existing primary effluent plant set-up. The cost of the plant will also depend on the selection of clarifier, sludge mixer and micro screen.

For more information kindly contact:

Director-General MPOB P. O. Box 10620 50720 Kuala Lumpur, Malaysia. Tel: 03-87694400 Website: www.mpob.gov.my

Telefax: 03-89259446