

#### **D-04: Cost effective treatment method for factory effluent discharged from rubber factory in Sri Lanka**

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Rubber processing factory effluent is normally treated by anaerobic/facultative and aerobic systems such as the oxidation ditch, aerated lagoon, activated sludge or submerged aeration. Due to problems related to malodour and space required in the anaerobic/facultative ponding systems and the high capital and operating costs of the aerobic systems, there is an interest in the use of the enclosed anaerobic digestion process as a pre-treatment system for this type of effluent. The poor efficiency of the anaerobic digestion process is often related to the poor retention of useful microorganisms in the reactor to degrade the organic matter. Thus, a new high rate type anaerobic digester using rubberized coir as a carrier matrix for the microorganisms was developed, based on the septic tank principle. It was found that the starting up was quite rapid, as it took only a few days to achieve a COD reduction between 60- 70% at high organic loading rates in a hydraulic retention time of one day. Coupled with this system is a technique known as effluent cascading aerobic system. Within a very short retention time, an appreciable level of reduction of COD and other parameters were achieved by this enclosed anaerobic digester coupled with effluent cascading technique. The other advantages are the limited space requirement, low implementation cost and the appreciable reduction in the level of obnoxious odours.