

CO-DIGESTION OF TANNERY SOLID WASTE FOR BIOGAS GENERATION

INTRODUCTION

Today tanneries in India face the twin problem of managing process solid waste i.e fleshing, a process solid waste and effluent treatment plant sludge. Fleshing pose serious environmental threat and reuse potential is scarce. Likewise, the treatment of effluent treatment plant's waste activated sludge (WAS) in a sludge digester demands huge investment cost. Keeping these two specific needs, technology has been developed for co-digestion of these two substrates i.e fleshing a process solid waste in combination with waste activated sludge (WAS) for biogas generation. The leather tanning and products industries play prominent roles in the world's economy, particularly for developing countries. Co-digestion is nothing but anaerobic digestion of two or more substrates simultaneously. A pilot scale demonstration plant of capacity 750 kg/day on wet weight basis has been implemented at Calcutta Leather Complex (CLC), Kolkata. After size reduction of fleshing, the fleshings and sludge will be mixed in an optimized mix ratio and will be fed into the anaerobic digester fitted with gas collection system. Digestate will be withdrawn in regular intervals of time and will be dewatered with the help of mechanical dewatering system. Mechanically Dewatered digestate is further dried and can be used as manure.

SALIENT FEATURES

- Protection of environment ie air, water and soil from contamination due to dumping of waste
- Disposal problem of fleshing and WAS in tannery sector can be minimized
- Odour and groundwater pollution problem can be minimized
- Minimization of carbon release into environment and thereby reduction in carbon foot print
- No additional treatment cost due to reusing the produced energy from the waste for operation the plant
- Improves the aesthetic value in and around leather complexes
- Digestate can be used as manure.

