

Abstract

Mushrooms are a primary part of managing solid waste, building organic soil and returning minerals to the soil. Sisal processing in Kenya generates an estimated 611,875 tonnes of solid waste annually, which is discarded leading to environmental pollution. Sisal waste contains; lignin, cellulose and hemicelluloses 4.5 %, 76.5 and 21.6 % respectively, which are ideal for mushroom cultivation. However, the waste from Kilifi Kenya has high concentrations of salts such as chlorides and sodium in the range of 31,857.12 and 20,660.28 mg/l, respectively, which are inhibitory to mycelia vegetative growth. The aim of this study was to evaluate pre treatment of saline sisal waste for mushroom production Two *Pleurotus* mushrooms commercial strains, *Pleurotus*. HK 37 and *P. sapidus* 969 were cultivated. The highest recorded biological efficiencies for P.HK 37 And *P. sapidus* 969 were 39.4% and 26.3% in cold water soaked substrate as well as 40.05% and 38.2% in a 1:1 co-substrate combination of grass and sisal waste, this can result to annual generation of 159,088 - 244,750 tonnes of fresh mushrooms. The results from this study indicate that saline sisal solid waste can be utilised for commercial mushroom production.