Isolation and selection of appropriate cellulolytic mixed microbial cultures for cellulases production from oil palm empty fruit bunch.

ABSTRACT

In order to construct cellulolytic fungal mixed cultures, screening and isolation of cellulolytic fungi was done using rotten oil palm fruit bunches as microorganism source. Three isolated fungi had shown the ability to degrade cellulose based on decolorization of CMC selective agar using Gram's iodine as color indicator. However, only two strains; KS1 and KS5 were selected for construction fungal mixed culture. Based on fungal interaction evaluation test done on PDA agar, both strains showed contact deadlock inhibition interaction with each other. In correlation to cellulase enzymes production, mixed cultures of strains KS1 and KS5 showed low enzymes activity compared to pure culture system. Although, the cellulase enzymes production is low, total cellulase enzymes composition was better than in pure culture system individually.

Keyword: Consortia; OPEFB; Submerged fermentation.