

## ABSTRACT

The present study is concerned with the optimization of cultural conditions for the enhanced production of intracellular enzyme  $\beta$ -galactosidase (EC-3.2.1.23) by *Kluyveromyces fragilis* NRRL Y-2415 by submerged fermentation. Three different fermentation media were evaluated for the production of enzyme. Among all the media examined, the milk whey (M1) gave maximum production of  $\beta$ -galactosidase. The production of enzyme was significantly improved when fermentation medium was supplemented with 0.8 %  $(\text{NH}_4)_2\text{HPO}_4$ . The effect of age (24 h old) and size (2.0 %, v/v) of vegetative inoculum was investigated. The other cultural conditions such as initial pH (6.5) and volume of medium (50 ml/250 ml Erlenmeyer flask) were also optimized. The production of enzyme was found to be maximal (33.75  $\mu\text{M/g}$  cell mass) 48 h after inoculation at 30°C.