

MICROBIOLOGICAL STUDIES ON  
 $\beta$ - GLUCOSIDASE FROM YEAST

By

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B.Sc. Agric. Microbiology, Fac. Agric.,  
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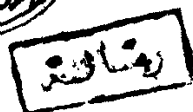
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## ABSTRACT

**Mervat Morcy Appas El-Gendy. Microbiological studies on  $\beta$ -glucosidase from yeast. Unpubl-ished M.Sc., University of Ain Shams, Faculty of Agriculture, Department of Agricultural Microbiology, 1999.**

$\beta$ -glucosidase production by 150 isolates of yeasts isolated from Egyptian soils were qualitatively examined. Quantitative assay test showed that isolates No. 2, 4, 5, 10 and 53 were the most active producers. These five isolates were characterized and identified as *Kluyveromyces drosophilum*, *Kluyveromyces lactis*, *Pichia nakazawae*, *Debaryomyces hansenii* and *Hansenula anomala* respectively.

Studies on the nature of their  $\beta$ -glucosidase production clearly indicated that the enzyme was constitutively synthesized by these five strains. In addition, factors affecting their  $\beta$ -glucosidase activity were also determined.

For the most active strain (i.e.; *Kluyveromyces lactis*) which has been chosen for further studies, the growth conditions and nutritional requirements required for its maximum  $\beta$ -glucosidase production were determined.

In addition, chemical and physical treatments for releasing active enzyme in a good yield from yeast cells were carried out, because no activity of  $\beta$ -glucosidase enzyme was detected in its culture fluid.

On the other hand, the enzyme was purified by ammonium sulphate precipitation followed by gel filtration using sephadex G-100 filtration. Furthermore, some physio-chemical and biochemical properties of the purified enzyme were investigated.

**Key words:** Yeasts,  $\beta$ -glucosidase, *Kluyveromyces lactis*.





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