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بالرسالة صفحات

لم ترد بالأصل

HOSSAM MAGHRABY

XYLANASE PRODUCTION BY *ASPERGILLUS TERREUS* IN SOLID STATE CULTURES

Thesis
Submitted to the Faculty of Science
Alexandria University

By

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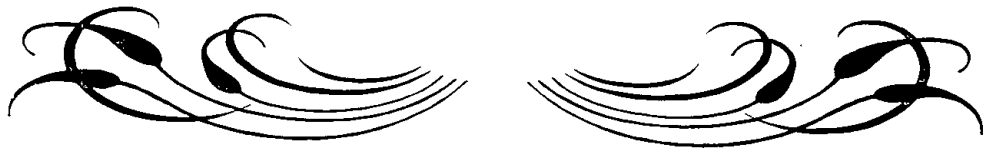
1998


بسم الله الرحمن الرحيم

This thesis has not been previously submitted for a degree at this or any other university and is the original work of the writer

Heba Kamal Mahrouse

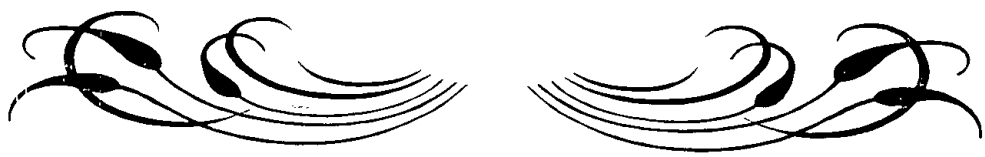


To my mother

To whom I owe my gratitude and appreciation.

To the one who granted me patience and persistence to complete this research. I dedicate all my success and achievement to her.

May God bless her soul



CONTENTS

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1. INTRODUCTION

1.1. Solid-substrate fermentation SSF

Solid substrate fermentations (SSF) are characterized by the growth of microorganisms on water insoluble substrates in the presence of varying amounts of free water (Mitchell and Lonsane, 1992). The term solid-state fermentation was proposed for all those processes which utilize water insoluble materials for microbial growth in the absence of free water (Moo-Young *et al*, 1983). SSF processes are variously referred to as solid fermentation, semi-solid fermentation, surface culture, kojii fermentation (Blain, 1975; Mial, 1975; Knapp and Howell, 1980; Lonsane *et al*, 1985).

The efficiency, productivity and economy of SSC are affected by various factors (Ralph, 1976; Hesseltine, 1977a,b; Aidoo *et al*, 1982; Lonsane, *et al*, 1985). The single most important feature is the moisture content of the medium, which makes SSC fundamentally different from submerged liquid culture (Mudgett, 1986). Several advantages of solid-state cultures over submerged-liquid cultures have been claimed by various workers (Hesseltine, 1977a,b; Cannel & Moo-Young, 1980; Mudgett, 1986).

1.1.1. Filamentous fungi in solid-substrate cultivation (SSC)

Many bacteria, yeast and fungi are capable of growth on solid substrates and find therefore application in SSC processes. Amongst these microorganisms, filamentous fungi are the most important group owing to their physiological capabilities and hyphal mode of growth (Mitchell, 1992). Extensive research work is progressing in SSC processes for the