INTRODUCTION

The lignocellulosic materials represent the largest reservoir of potentially fermentable carbohydrate on earth. It is estimated that approximately 50 billion tons of renewable resources as cellulose and hemicellulose which are produced annually worldwide by photosynthesis, ***Dale et.al (1985).***

Cellulose is probably the most abundant biological compound in our world, in the form of lignified cellulose and / or pure cellulose in paper fibers, and textiles. Cellulose is the predominant waste material in agricultural residues, in the form of straw, stalks, stems, and husks, and the main waste product, both in nature and man-made.

Lignocellulosic materials are abundant and consist mainly of cellulose "40-60%", with lesser, but significant, amounts of hemicellulose "20-30%" and lignin "15-30%", ***Dekker and Wallis (1983).*** These renewable resources provide us with Fuel, feed, and fiber and will be the basis for a much larger fermentation industry if we can solve a number of technical problems.

The annual consumption of sucrose in Egypt reached to about 1.59 million tons ***(Ministry of Agriculture 1994)*** and the major part of this sugar is imported. To cover this shortage of sucrose in the local market, some valuable products e.g. glucose syrup and ethanol are produced from renewable lignocellulosic materials.

The aim of the present investigation is to study the effect of some pretreatments on some lignocellulosic materials i.e. soybean straw and artichoke residues to high susceptibility of lignocelluosic materials towards enzymatic hydrolysis. Besides, optimal conditions and the kinetic behaviour of cellulase (Celluclast 1.5 L) enzyme were examined during hydrolysis . Also the saccharification processes were throughly studied to obtain the most suitable conditions for glucose syrup production from the abovementioned lignocellulosic materials.