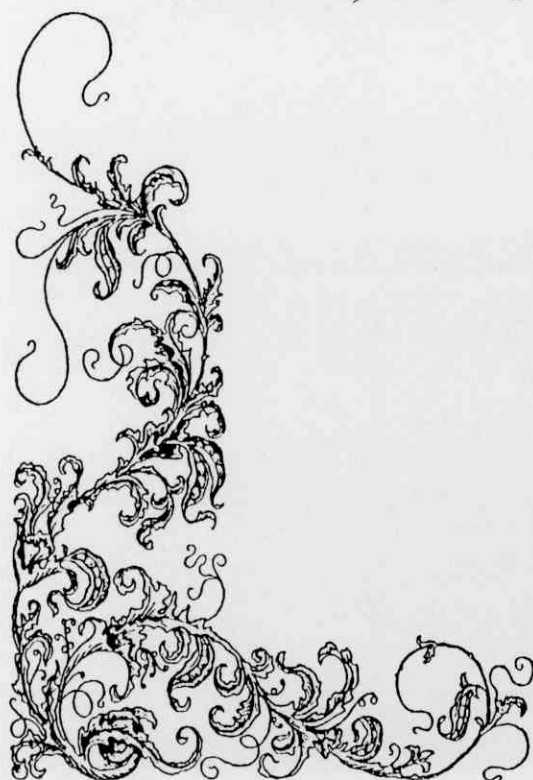


# INTRODUCTION



# 1-INTRODUCTION

Sweet corn (*Zea mays* L.) is considered one of the ten most important vegetable crops. Sweet corn resulted from a mutation in chromosom 4 at the Su1 locus of the cultivated corn (*Zea mays* L.). The uniqueness of the sweet corn is manifested in a ccumulation of sugars and water-soluble polysaccharides in the endosperm tissue that becomes translucent and brittle by the completion of maturation (Kaukis and Davis, 1986). Sweet corn is of relatively recent origin and is produced primarily in North America, but foreign consumption has increased in many lacations of the world including Egypt (Kaukis and Davis, 1986, El-Seidy, 2001).

Sweet corn has the potentiality to be an important vegetable crop for both local consumption and export in Egypt. The most important quality characteristics of sweet corn are the high sweetness of kernels and the slow rate of sugar decrease in kernels during storage of ears after harvest. In addition, low starch content in of kernels is a desirable quality characteristic (Hassan, 1989).

The main objective of the present study was to estimate the different genetic parameters required to design a successful breeding program to improve ears yield/plant, the sweetness of kernels at harvest time, and the rate of total sugars decrease during storage of sweet corn ears. This will lead to new sweet corn lines and /or hybrids with ears characterized by high yield and long shelf life.