

# بسم الله الرحمن الرحيم



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# شبكة المعلومات الجامعية التوثيق الالكتروني والميكرو فيلم



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# جامعة عين شمس

## التوثيق الإلكتروني والميكروفيلم

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# VARIETIES BY ENVIRONMENT INTERACTION AND ITS EFFECT ON ZONING EGYPTIAN COTTON

BY

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# *INTRODUCTION*

## INTRODUCTION

Cotton is one of the most important fiber crops of the world and is likely to enjoy this advantage in the future. In Egypt, cotton is important for both export and local textile industry. Now, cotton area extends longitudinally about 1000 km from north to south in Egypt. Because of environmental conditions vary or likely to vary from one location to another and / or from year to year in this extended area, the evaluation process of the commercial varieties as well as the newly released or promising strains over different locations and over different years is of great importance for the breeder. It is essential to develop new varieties characterized by high yielding ability and better fiber quality to replace old ones or those which ran out. Before taken any decisions breeder has to evaluate promising strains which could be desirable for their genetic and commercial work of the same category by testing their phenotypic performance and genotypic stability.

Testing the superiority of the new lines over their alternatives, is conducted in field trials over wide range of environments for several years and is very important to prove that these promising lines could serve as good stable substitutes.

Variations in the environment can be divided into two sorts : predictable and unpredictable. The first category includes all permanent characters of the environment, such as general features of the climate and soil type, as well as those characteristics of the environment, which fluctuate in a systematic manner, such as day length. The second category includes fluctuations in weather, such as amount and distribution of rain fall and temperature. Under an inefficient agricultural system it may also include variations in agronomic practices which in more advanced agriculture might be held reasonably constant ( Allard and Bradshaw, 1964 ).

The present investigation aims to study the relative magnitude of the genotype - environment interactions and determine the degree of the genotypic stability for each of twelve Egyptian cotton cultivars, in addition to three promising strains at ten locations over three growing seasons to provide information as to the following aspects :-

- 1- The effect of environmental elements interaction on yield and fiber properties.
- 2- Evaluation of the varieties at different environment regions to recommend the best varieties for each region.
- 3- The effects of seasons and locations on new and cultivated varieties now in production.
- 4- Study of phenotypic and genotypic stability for each cultivar and promising strains.

*REVIEW OF LITERATURE*