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شبكة المعلومات الجامعية

# بسم الله الرحمن الرحيم



سامية محمد مصطفى



شبكة المعلومات الجامعية



# شبكة المعلومات الجامعية التوثيق الالكتروني والميكرو فيلم





سامية محمد مصطفى



شبكة المعلومات الجامعية

# جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

## قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها  
علي هذه الأقراص المدمجة قد أعدت دون أية تغيرات



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شبكة المعلومات الجامعية



# بالرسالة صفحات لم ترد بالأصل



**ESTIMATION OF STATISTICAL GENETIC  
PARAMETERS AND COMBINING ABILITY  
IN MAIZE CROSSES UNDER DIFFERENT  
ENVIRONMENTS**

**BY**  
**MOHAMED ABDEL-AZIEM HASSIB**  
**B.Sc. Agric. Ain Shams Univ., 1992**

**A thesis submitted in partial fulfillment  
of  
the requirements for the degree of**

**MASTER OF SCIENCE**  
**IN**  
**Agriculture**  
**(Agronomy)**

**Department of Agronomy**  
**Faculty of Agriculture**  
**Ain Shams University**

**1997**

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## APPROVAL SHEET

### ESTIMATION OF STATISTICAL GENETIC PARAMETERS AND COMBINING ABILITY IN MAIZE CROSSES UNDER DIFFERENT ENVIRONMENTS

BY

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B.Sc. Agric. Ain Shams Univ., 1992

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1. *Introduction*

*Journal of Management Education*

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1. *Chlorophyll a* and *Chlorophyll b* were determined by the method of Lichtenthal and Whistler (1973).

1. *Chlorophyll a* and *Chlorophyll b* were determined by the method of Arar and Collins (1971).

4422 J. Neurosci., September 24, 2008 • 28(39):4415–4424

1. *Introduction*

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Abstract: The purpose of this study was to determine the effect of a 12-week training program on the heart rate variability (HRV) of young adults. The study was conducted in a laboratory setting. The participants were 20 young adults (10 males and 10 females) who were randomly assigned to two groups: a control group and an experimental group. The control group did not receive any training, while the experimental group received a 12-week training program. The HRV was measured at the beginning and at the end of the 12-week period. The results showed that the experimental group had a significant increase in HRV compared to the control group. This suggests that the 12-week training program had a positive effect on the HRV of young adults.



## ABSTRACT

**Mohamed Abd El-Azeim Hassib**, Estimation of statistical genetic parameters and combining ability in maize crosses under different environments. Unpublished Master of science, Agronomy Department, Fac. of Agric., Ain Shams University, 1997.

This investigation aimed to study the effect of heterosis, combining ability estimates and correlations among yield and its attributes under six different environments in maize. Eight inbred lines and their 28  $F_1$ 's produced using diallel fashion were evaluated for twelve characters, viz., tasseling and silking dates, plant and ear heights, number of leaves/plant, stem diameter, ear length, ear circumference, number of rows/ear, number of kernels/row, 100-kernel weight, grain yield/plant in 1995 season.

The results showed that environments, crosses and crosses by environments mean squares were significant for all traits under study. Percentage of heterotic effect of the  $F_1$  hybrids relative to grand mean and check variety ranged from -48.81 to 38.18% and from -58.85 to 11.08%, respectively for grain yield/plant. Ten and one hybrids significantly exceeded the grand mean and check variety respectively. The hybrid ( $P_5 \times P_7$ ) had the highest heterosis values of 38.18 and 11.08% over grand mean and check variety, respectively.

Both additive and non-additive genetic effects were involved in the inheritance of most traits, with difference of their relative importance in the expression of each trait. High GCA/SCA ratios which exceeded the unity were obtained for most characters in combined data. Significant mean squares obtained for interactions of both GCA and SCA with environments for all traits with exception of ( $SCA \times Env.$ ) for ear circumference, indicated the

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sensitivity of both kinds of genetic effects to the environments variations. Sensitivity of GCA was higher than SCA for all studied traits. Effects of both GCA and SCA showed distinct differences under various environments. The parental lines 52I, 50I and Rg4 were good general combiner for grain yield/plant. Inbred line 21G was good general combiner for tasseling and silking dates and plant and ear heights. The hybrid ( $P_1 \times P_2$ ) was good  $F_1$  cross combination for grain yield/plant. Result also indicated that grain yield was positively and significantly correlated with each of ear length, ear circumference, number of kernels/row, 100-kernel weight, tasseling and silking dates, plant and ear heights, number of leaves/plant and stem diameter. Results of path analysis indicate that ear circumference, silking date and 100-kernel weight proved to be important components affecting plant yield variation. In general it can be concluded that the importance of evaluating genotypes under various environments in order to get through evaluation for genotypes performance and to recognize the favorable conditions for exploiting both types of gene action in maize breeding programs.

#### **KEY WORDS:**

Maize, yield and its attributes, statistical genetic parameters, heterosis, combining ability, genotype-environments interaction correlation and path coefficients analysis.



