بسم الله الرحمن الرحيم

شبكة المعلومـــــات الجامعية

التوثيق الالكتروني والميكروفيلم

شبكة المعلومات الجامعية

جامعة عين شمس

التوثيق الالكتروني والميكروفيلم

﴿ قـــسـم ﴾

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
علي هذه الأفلام قد اعدت دون آية تغيرات

يجب أن

تحفظ هذه الأفلام بعيداً عن الغبار

في درجة حرارة من 15 – 20 مئوية ورطوبة نسبية من 20-40 %

To be kept away from dust in dry cool place of
15 – 25c and relative humidity 20-40 %

بعض الوثائق الأصلية تالفة

بالرسالة صفحات

لم ترد بالأصـــل

YIELD COMPONENTS DYNAMICS OF SOME NEWLY RELEASED YELLOW MAIZE HYBRIDS UNDER DIFFERENT LEVELS OF SOURCE CAPACITY

BY

TAMER IBRAHIM EL SAYED ABDEL WAHAB

B.Sc., Agric. Sci , (Crop Breeding), Ain Shams Univ., 1996

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

of

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in

Agricultural Science

(Agronomy)

Department of Agronomy

Faculty of Agriculture

Ain Shams University

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APPROVAL SHEET

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ABSTRACT

Tamer Ibrahim El Sayed Abdel Wahab, Yield components dynamics of some newly released yellow maize hybrids under different levels of source capacity. Unpublished Master of Science Thesis, Dept. of Agronomy, Faculty of Agriculture, Ain Shams University, 2002.

The objective of this study was to investigate the dynamics of yield components of certain newly yellow maize hybrids (*Zea mays L.*) grown in Egypt under different levels of source capacity, *i.e.* leaf area index (LAI) to provide plant breeder and crop physiologist with information of the most important characteristics related to yield. So, twelve treatments which were the combinations of three planting distances (source capacity) and four yellow maize hybrids were tried. The obtained results indicated that the effect of plant density per feddan (source capacity) on ear characteristics of yellow maize plants, *i.e.* ear length (cm), ear diameter (cm), number of rows/ear, number of kernels/row and seed index (100 kernels weight g) was shown to increase significantly as plant density was decreased from 35000 to 17500 plant/fed. On the other hand, increasing maize plant density from 17500 to 35000 plant/fed by decreasing distance between hills from 40 to 20 cm apart increased significantly grain and stover yields/fed. Harvest index value decreased from 22.25 to 21.00 % in the 1st season and from 22.14 to 20.04 % in the 2nd season by widening distance between maize plants from 20 to 40 cm, respectively, meaning that grain yield suffered more reduction than the biological yield. .

Yellow maize hybrids differed significantly in ear length, ear diameter, number of rows/ear, number of kernels/row and seed index. Grain yield/fed of SC 155, SC 161 and TWC 352 exhibited the highest grain yield without significant differences among them, whereas TWC 351 recorded the lowest grain yield. Ear characteristics, grain and stover

yields, shelling percentage, harvest index and relative photosynthetic potential (RPP) of the four studied varieties behaved the same trend of change under different levels of plant density treatments, *i.e.* different levels of source capacity.

Leaf area index (LAI) was found to be positively and significantly correlated with stover yield/fed in the two growing seasons. In addition positive but insignificant correlation coefficients were found between LAI and each of grain yield/fed and harvest index in the two growing seasons. While, significantly negative correlations were found between LAI and each of ear weight, ear length, ear diameter and number of kernels/row, and this was true in both seasons of the experimentation as well as seed index in the 2nd season.

Values of coefficients of phenotypic (P.C.V) and genotypic (G.C.V) variation were relatively high and approximately equal in magnitudes and were higher than those of coefficients of environmental (E.C.V) variation values for yield components, *i.e.* ear length, number of rows/ear, number of kernels/row, seed index, ear weight and shelling percentage, suggesting that most differences among yellow maize cultivars for these traits are mainly due to genetic causes with little effects for environmental factors represented as plant densities and seasonal factors in the present study, while grain yield was found to be more affected by seasonal factors.

Key words: Maize- Yellow hybrids- Plant density- Growth characteristics- Source capacity- Leaves characteristics- Ear characteristics- Grain and stover yields- Simple correlation.

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