

# COMPARATIVE STUDIES ON GROWTH AND YIELD OF SOME TOMATO HYBRIDS

By

**ALFONS GRISS ZAKHER**

B.Sc. Agric. (Horticulture) Ain Shams University 1991

A thesis submitted in partial fulfillment  
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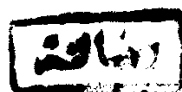
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## APPROVAL SHEET

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## ABSTRACT

**Alfons Griss Zakher. Comparative studies on growth and yield of some tomato hybrids. Unpublished Master of Agriculture Science, Ain Shams University, Faculty of Agriculture, Horticultural Department 1999.**

This study was carried out from 1996 to 1998 at the Experimental farm, Barrage Horticultural Experiment Station. Seven  $F_1$  commercial hybrids and their  $F_2$  plants obtained by inbred lines were evaluated with Castle Rock (open pollinated cultivar) in the two growing seasons. the evaluations were in a randomized complete block design with four replicates.

Data were recorded on: plant height, number of main branches per/plant, earliness of flowering, early yield, marketable yield, total yield, fruit shape index, fruit weight, number of locules, fruit firmness, flesh thickness, total soluble solid, titratable acidity and vitamin C content. In this study, the inbreeding depression was studied for some vegetative growth, flowering, yield components and fruit quality characteristics.

Results indicate that no significant differences were obtained between Roda 2000  $F_1$  (a locally introduced tomato hybrid) and each imported  $F_1$  hybrids in all characters except total soluble solids and vitamin C content.

Positive inbreeding depression between  $F_1$  &  $F_2$  was expressed for early yield, Marketable yield, Total yield and fruit weight, whereas, negative inbreeding depression was found for earliness of flowering and titratable acidity in all obtained hybrids.

In addition, a score for determination the best genotypes and lowest inbreeding depression in two growing seasons was established.

The hybrids "Typhoon  $F_1$ , Ax-81-01  $F_1$  and Dora  $F_1$ " were the best obtained for fresh market and "Typhoon  $F_1$  and Ax-81-01  $F_1$ " for processing.



The “Dora F<sub>2</sub> and Rocky F<sub>2</sub>” were the lowest obtained for inbreeding depression.

**Key Wordes:**

Tomato, Inbreeding depression - evaluation - F<sub>1</sub> hybrids - F<sub>2</sub> plants - Early, marketable, total yield - Fruit quality.

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**I. D.% :** Inbreeding depression

**T.S.S :** Total Soluble Solids

**T. A. :** Titratable acidity

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