



**EFFECT OF IRRIGATION AND ANTITRANSPIRANT ON  
GROWTH AND PRODUCTIVITY OF SOME TOMATO  
CULTIVARS UNDER KAFRELSHIEKH CONDITION**

*By*

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## Abstract

Two field experiments were carried out during the two successive summer seasons of 2017 and 2018 in a private farm at Kafrelsheikh Governorate, to investigate the effect of irrigation intervals (every 10days, 15days, 20days and 25days) and foliar spray with Kaolin (at 6% 60 g/l and Glycine betaine at 2 g/l ) on vegetative growth, chemical composition, fruit yield and quality of some tomato hybrids under Kafrelsheikh conditions.

The first study included 12 treatments which were resulted from the combinations between four irrigation treatments and three tomato hybrids (Alissa F<sub>1</sub>, Carmen F<sub>1</sub> and Super strain B). Results clearly showed that using irrigation every 10 days (90 % of field capacity) and 15 days (75 % of field capacity) with Super strain B hybrid reflected the highest values of vegetative growth aspects for tomato plants, i.e plant height, number of branches and leaves /plant and fresh and dry weight of plant as well as leaves area per plant ,chlorophyll reading, N, P, K, and proline content. In addition, both fruit yield per plant and feddan as well as marketable fruit yield were increased, while unmarketable yield was decreased as a result of the same interaction treatments. Also, the quality traits of tomato fruits, i.e., average fruit weight, length, diameter, fruit firmness, T.S.S., vitamin C and total acidity were increased by the same interaction treatments.

The second study included 12 treatments which were resulted from the combinations between four irrigation treatments and three foliar spray treatment with in addition to control treatment (with distilled water ). Results clearly showed that the highest values in all measured growth traits were recorded as a result of using irrigation every 10 days (200 m<sup>3</sup>/fed) and spraying the plants with kaolin at 60g/l. Moreover, the highest values of the most fruit yield and its components (total yield kg/plant, total yield t/fed and marketable yield t/fed) were recorded as a result of using irrigation every 10 days (200 m<sup>3</sup>/ fed) followed by irrigation every 15 and 20 days( 250 and 200 m<sup>3</sup>/fed, respectively) with foliar spray with kaolin at 6% (60g/l) and gave the highest average fruit weight, length, diameter, fruit firmness, T.S.S., vitamin C and total acidity of produced fruit.