EFFECT OF PLANT POPULATION AND BURST APPLICATION
ON YIELD, GROWTH AND FRUIT QUALITY OF FIELD
TOMATO IN THE JORDAN VALLEY

BY
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I hereby recommend that this thesis prepared under my direction by:

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Entitled:

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Dr. Muhammad A. Suwwan February, 1986

As members of the final examination committee, we certify that we
have read this thesis and agree that it may be presented for

final defense.

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Final approval and acceptance of this thesis is contingent on the
candidate's adequate performance and defence thereof at the final oral
examination.
ABSTRACT

For two consecutive harvest seasons, increasing plant population increased early marketable yields and fruit numbers, early total yields and fruit numbers, seasonal marketable yields and fruit numbers and total yields and fruit numbers of field tomato. Blossom end rot decreased while cracking, sunscald, small fruits, early total unmarketable and seasonal total unmarketable yield and fruit numbers tended to increase as plant population increased during the first harvest season. Increasing plant population significantly reduced average weight of individual tomato fruits, but had no appreciable effects on chemical properties (PH, % TSS, % TA) and specific gravity of tomato fruits in both the harvest seasons. Dry weight of leaves and stems per hectare, but not total dry weight of vegetative growth, increased with plant population of the second season only; on the other hand a significant reduction in dry weight of leaves, stems, and total vegetative growth per plant occurred in both harvest seasons as plant population increased.

Throughout the experiment, burst application showed no significant effects on marketable yields and fruit numbers and total yields and fruit numbers of field tomato. Blossom end rot, cracking, sunscald, small fruits and total unmarketable yields and fruit numbers were not affected by burst application. Chemical properties (PH, % TSS, % TA) and specific gravity of tomato fruits as well as vegetative growth and its components per hectare showed no significant changes following application of burst in both seasons. However, dry weight of vegetative growth and its components on per plant basis were significantly highest at the 0.59 l/ha rate of the 1984 season.

Hence the 80 thousand plant population per hectare is recommended for tomato production under conditions similar to those of this experiment.