5th IMPB INTERNATIONAL MEETING ON PLANT BREEDING

INTEGRATED DATA ANALYSIS AS A TOOL TO REVOLUTIONIZE PLANT BREEDING

Unoeste

CEFOP

INTRA AND INTERSPECIFIC VARIABILITY OF TOMATO GENOTYPES FOR WATER DEFICIT RESISTANCE

Guilherme J. A. Oliveira[1]*; Joana N. M. Oliveira[1]; Bruno Da R. Toroco[1]; André R. Zeist[1]

[1]University of Oeste Paulista. *guilhermejaost@hotmail.com

Introduction

The tomato crop requires great demand for water, being susceptible to water deficit. With this finite resource increasingly scarce, there is a need to develop cultivars that are more efficient in the use of water.

Objective

The objective was to explore the intra and interspecific variability of wild accessions, hybrid and commercial genotypes regarding resistance to water deficit

Materials and methods

Seven wild tomato species genotypes were assessed, namely: *S. pimpinellifolium* accession AF 26970, *S. galapagense* accession LA 1401, *S. peruvianum* accession AF 19684, *S. chilense* accession LA 1967, *S. habrochaites* var. *hirsutum* accession PI 127826, *S. habrochaites* var. *glabratum* accession PI 134417, and *S. pennellii* accession LA 716; three *S. lycopersicum* var. *cerasiforme* genotypes, accession RVTC 03, RVTC 20, and RVTC 66; six commercial tomatoes (*S. lycopersicum*), including the four lines Santa Cruz Kada, Santa Clara I-5300, BRS Tospodoro, and Redenção and the two F_1 hybrids, Giuliana and Milagros. The experiment was carried out in a greenhouse with average temperature of 24.80 °C ± 0.78, relative humidity of 77.83% ± 0.98 and 12 h of daily light. A randomized block design was used.

Results

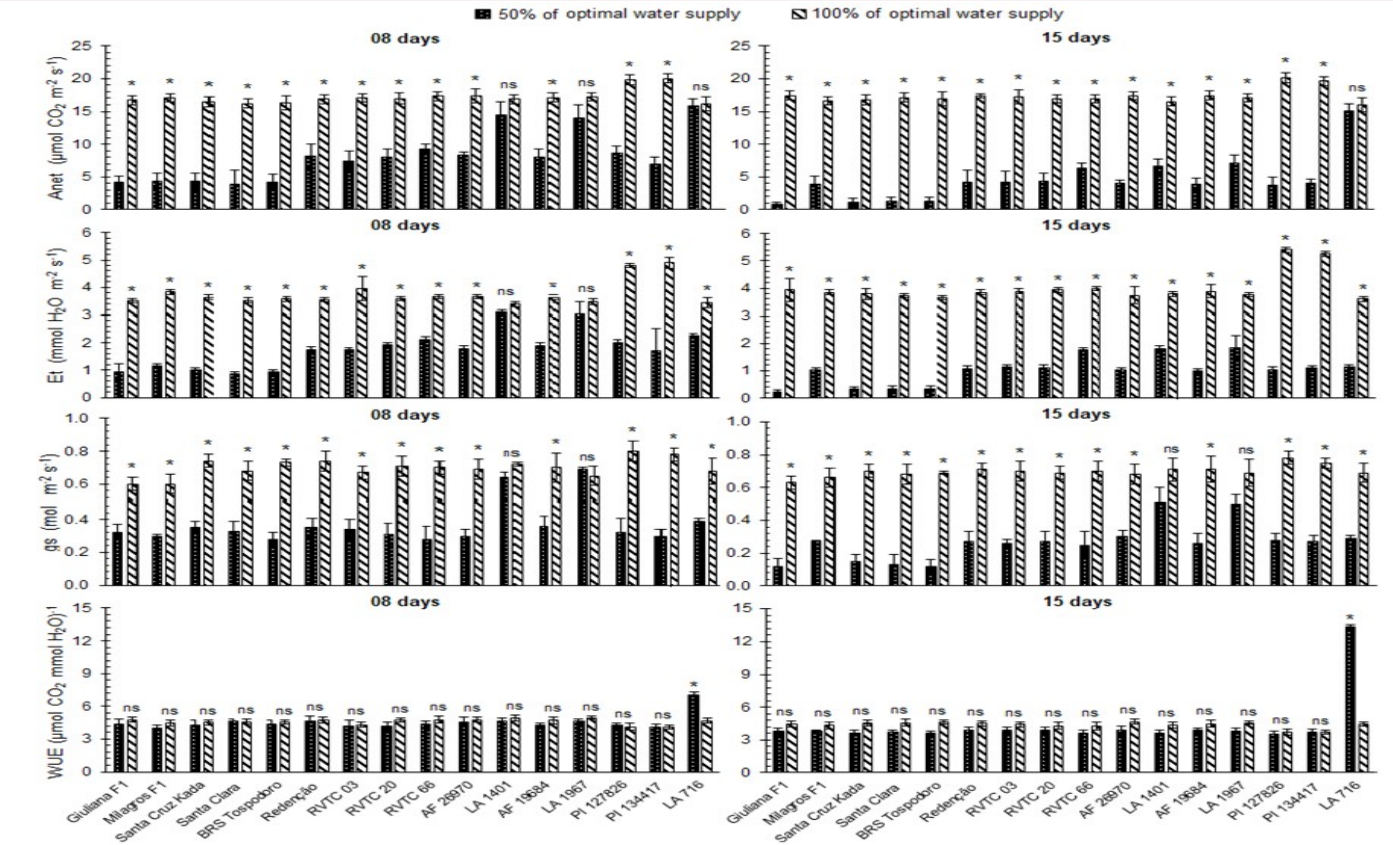

Fig. 1 Net CO_2 assimilation rate (Anet), transpiration rate (Et), stomatal conductance (gs), and water use efficiency (WUE) of tomatoes after eight and 15 days with 50 and 100% of water requirement supplied. *indicates a significant difference between treatments at $P < 0.05$ level (t-test). Bars indicate standard deviation of the mean.

Conclusion

The accession LA716 was the genotype in which it showed a greater tolerance to water deficit, and may be indicated for breeding programs as a source of genetics for this characteristic.