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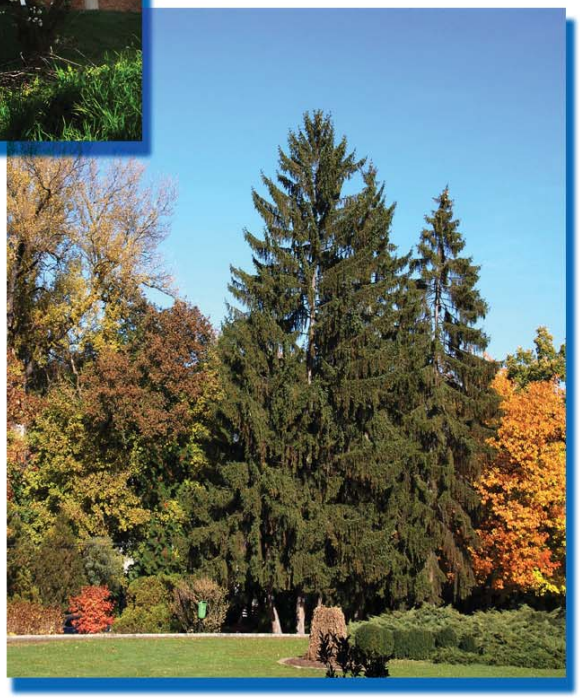

DROUGHT TOLERANCE AMONG ACCESSIONS OF EGGPLANT AND RELATED SPECIES

Ana FITA[1]*, Fabrizio FIORUCI[1], Mariola PLAZAS[1], Adrián RODRIGUEZ-BURRUEZO[1] and Jaime PROHENS[1]

[1]*Instituto de Conservación y Mejora de la Agrodiversidad Valenciana. Universitat Politècnica de València, Spain.*
[*]Corresponding author, e-mail: anfifer@btc.upv.es

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Introduction. Eggplant (*Solanum melongena* L.) is a widespread horticultural species in temperate and tropical areas around the world. Given the challenges posed by climate change it is necessary to develop cultivars adapted to drought. Particularly, this situation is acute in the case of desertification of large areas of traditional cultivation of this vegetable. The development of cultivars or even rootstocks tolerant to drought depends on: i) identification of germplasm of interest, and ii) introgression of genes from this germplasm into eggplant lines. Both activities require quick, cheap and effective assessment of drought tolerance, if possible in young plants.
Aims. The objective of this study was: i) to screen a collection of 15 accessions of eggplant and related species for tolerance to drought, and ii) develop an appropriate high throughput phenotyping system in young plants feasible to evaluate large populations.
Materials and Methods. The plant material used was: six accessions of cultivated *S. melongena* from diverse backgrounds, and five of related species: two accessions of *S. aethiopicum*, one of *S. linneanum*, one of *S. macrocarpon* and one of *S. eleagnifolium*. Plants were grown under two different treatments: i) control with optimum irrigation, and ii) drought treatment where irrigation was reduced by 50% with respect to the control. The measurements were divided into non-destructive (plant height, leaf size) and destructive (biomass, total leaf area, etc) measurements.
Results. The results showed an important diversity within cultivated eggplant for tolerance to drought. Also, not all relatives of eggplant necessarily showed a better response to drought than cultivated *S. melongena*. In fact the genotypes with best results were the cultivated eggplant variety Kermit and the wild species *S. eleagnifolium*, which was very vigorous under stress. The different genotypes appear to have different mechanisms of drought tolerance, which may be of interest to combine these mechanisms in order to obtain new improved varieties tolerant to drought. Regarding the protocol used, the most discriminant parameters to select resistant plants were the plant height and its biomass.
Conclusion. An important diversity for tolerance to drought exists in cultivated eggplant, as well as in related species. For future screenings in young plants, we propose to use plant height to make a quick selection of highly susceptible genotypes, eliminate them, and subsequently make a more accurate evaluation based on biomass accumulation.