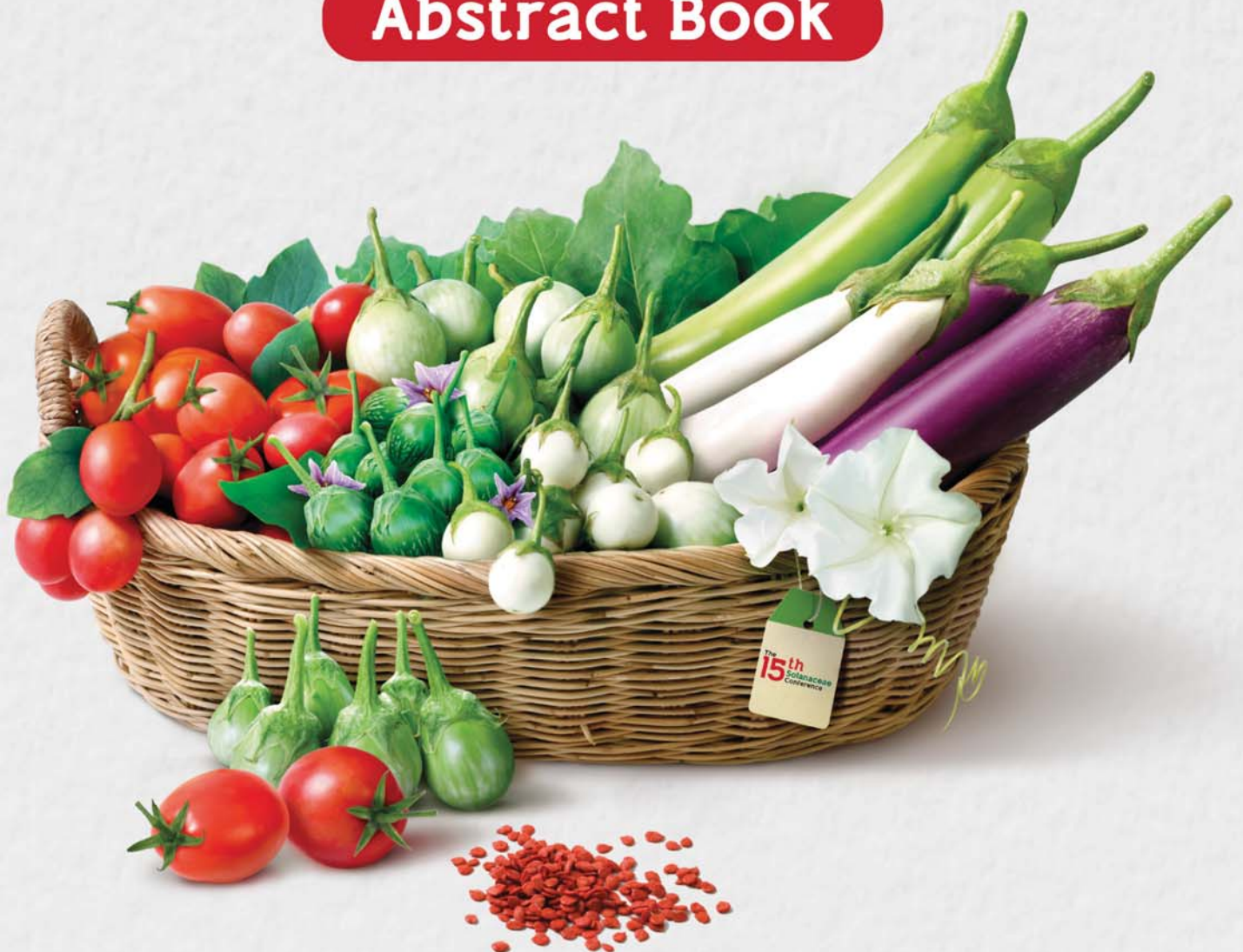


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Abstract Book





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Use of eggplant wild gene pools biodiversity for introgression breeding

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Eggplant (*Solanum melongena*) is an Old World domesticate related to a large number of wild species from *Solanum* subgenus *Leptostemonum*. Many of these wild relatives are of interest for eggplant breeding for their resistance or tolerance to biotic and abiotic stresses, as well as for high levels of bioactive compounds. We are developing an ambitious programme aimed at the large scale generation of eggplant materials with introgressions from wild relatives from the primary, secondary, and tertiary gene pools. Interspecific hybrids with eggplant were obtained with the only eggplant primary gene pool species (*S. insanum*; the wild ancestor of eggplant), and with the eleven secondary gene pool species used (from the Eggplant and Madagascar clades and from the Anguivi grade) as well as, using embryo rescue, with two (*S. elaeagnifolium* and *S. torvum*) out of the three (the two former plus *S. sisymbriifolium*) tertiary gene pool species used. Success of hybridization was variable depending on the accessions of cultivated eggplant and wild species used for the crossings. Successful backcrossing to eggplant involving all wild species with which interspecific hybrids were available was obtained, except for *S. torvum*. Multiple first backcross (BC1) generations were screened for tolerance to drought and selected individuals were used to obtain the BC2 generation, which is being selfed for several generations for fixation. A first set of introgression lines (ILs) with *S. insanum* has been obtained, and three new sets of ILs with *S. insanum*, *S. dasyphyllum* and *S. elaeagnifolium*, are under development (BC3-BC4 generations) using high throughput genotyping for selection. In addition, a MAGIC population which includes an accession of the wild *S. insanum* is being developed. The new materials obtained reveal a wide phenotypic diversity for morphological traits. Some of the selected materials have shown enhanced tolerance to drought. Evaluation of the first introgression lines under two environments have allowed the identification of QTLs for agronomically important traits. The new eggplant materials with introgressions from wild relatives will allow broadening the genetic base of eggplant and can make an effective contribution to the development of a new generation of eggplant cultivars with improved characteristics, including adaptation to stresses resulting from climatic change.

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