Breakthroughs in the Genetics and Breeding of Capsicum and Eggplant

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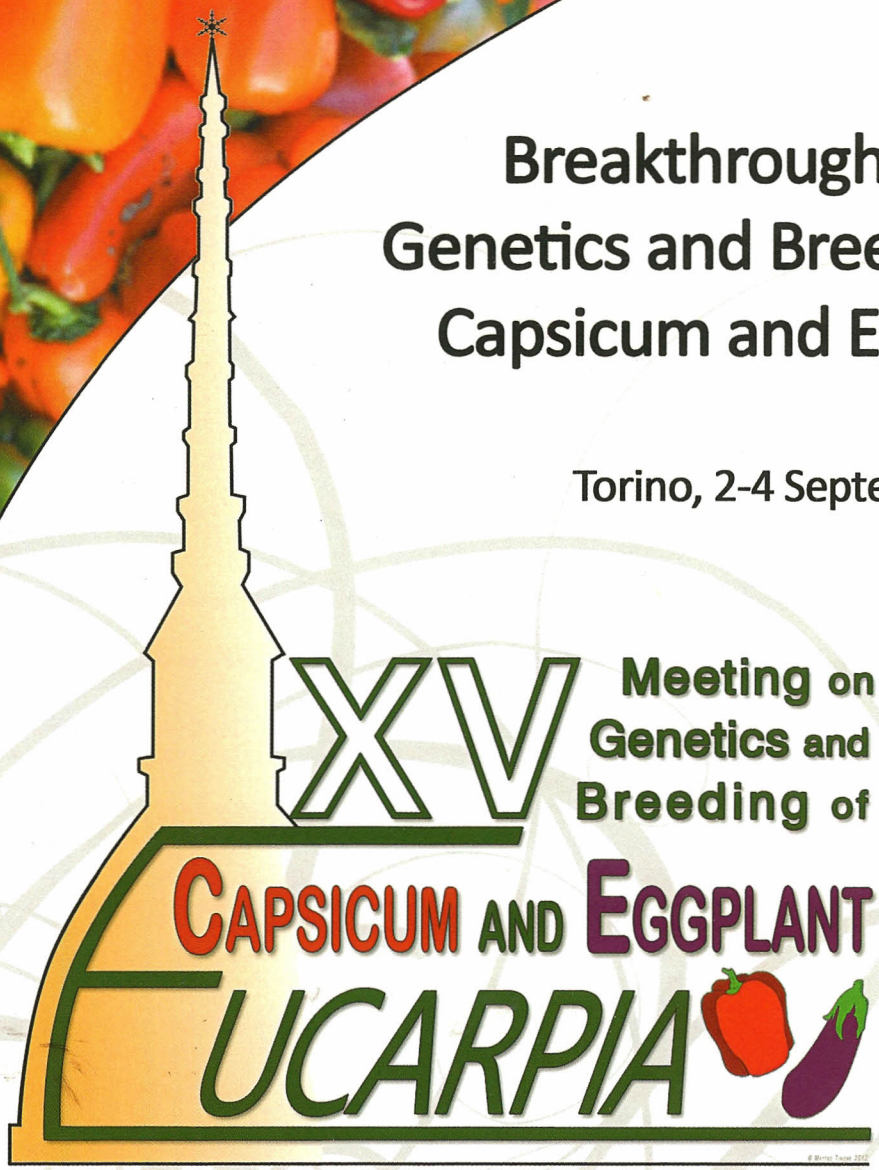

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Potentialities of wild relatives for eggplants and eggplants rootstocks breeding.

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Abstract

Cultivated eggplants (*S. melongena*, *S. aethiopicum*, *S. macrocarpon*) and their wild relatives belong to genus *Solanum* subgenus *Leptostemonum*. Although most species of this subgenus are native from the American continent, the eggplants and their closest relatives originate mostly from Africa and Asia. The largest living collections of wild *Solanum* species are maintained at Radboud University (Nijmegen, The Netherlands) and at INRA (Montfavet, France). Part of these collections has been characterized for traits of agronomic interest during the so called EGGNET project (1999-2004) within the frame of the European Union GENRES programme, project. *Verticillium* wilt and root knot nematode (*Meloidogyne incognita*) resistances have been screened for by artificial inoculation on young plantlets. Good levels of resistance have been identified in other *Solanum* species than the well known and partially resistant *S. torvum* and *S. sisymbriifolium*. Graft affinity experiences using the wild material as rootstock and *S. melongena* as scion have been carried out on young as well as on adult plants and various levels of grafting affinity have been identified. The characterization results obtained are discussed in the light of the present understanding of interspecific cross compatibility between wild and cultivated eggplants. The results obtained clearly indicate the high potential of the wild diversity for eggplants and eggplants rootstocks breeding, as well as the need to intensify the characterization of these collections for traits of agronomic interest.

Keywords: Eggplant, *S. melongena*, *S. aethiopicum*, *S. macrocarpon*, wild *Solanum*, *Verticillium*, *Meloidogyne incognita*, resistance, grafting, genetic resources, breeding, rootstock