

**Poster Session**  
**S1-Genetic Resources & Breeding**  
**Abst# P1-P90**

[P1]

**Profiles of Carotenoids in Citrus Species, Their Relatives and Hybrids**

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Carotenoids are major components of pigments of the citrus fruits color. We measured different kinds of the carotenoids contents in the citrus flavedo and juice sacs, and tried to classify Citrus species, their relatives and hybrids. The flavedo possessed total carotenoids more than the juice sacs. On the basis of the profiles of carotenoids in the flavedo and juice sacs, specimens could be classified into three categories (low (L), middle (M) and High (H)) statistically. In the flavedo, every category could divide into several types according to accumulation of carotenoids. Most of mandarins and some oranges belonged to H categories of total carotenoids whereas most of lemons, limes and citrons belonged to L categories. Using statistical analysis, Citrus species and relatives was able to classify in flavedo and juice sacs. Specimens of the juice sacs could be more definite to classify more than those of the flavedo. These results suggested chemotaxonomical analysis of carotenoids in the citrus juice sac would be useful to classify and breed citrus species, relatives and hybrids.

[P2]

**Creation of New Intergeneric and Interspecific somatic Hybrids: An Objective of The 6TH PCRD European Project 'CIBEWU' to Face THE Mediterranean Citrus Rootstock Challenge**

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The predominance of sour orange rootstock in the southern and eastern part of the Mediterranean Basin is presently threatened by the spread of Citrus Tristeza Virus (CTV) and the dispersion of its main vector *Toxoptera citricida*. As a result the search for alternative rootstocks resistant to CTV and standing other constraints such as drought, alkalinity, salinity, *phytophthora* and nematods problems is now considered an urgent priority. Complementary genitors should be found in citrus germplasm to combine the desired traits particularly between *Poncirus* or trifoliolate hybrids (citrange, citrumello) for resistances to pest and diseases and *Citrus* species for abiotic tolerances. The creation of somatic hybrids allows cumulating all dominant genes for tolerance to biotic and abiotic factors of the two parents, irrespective to their heterozygosity level. Moreover tetraploid level *per se* seems to improve tolerances to salt and osmotic stress. Thus, the creation of new intergeneric and interspecific somatic hybrids has been included as one of the objectives in the 6th PCRD European Project 'CIBEWU' aiming to face the Mediterranean citrus rootstock challenge. New embryogenic callus lines to be used for somatic hybridization have been induced by INRAM (Morocco), INRAT (Tunisia), Çukurova University (Turkey), IVIA (Spain) and CIRAD (France). Somatic hybridizations have been realized at CIRAD and IVIA with special emphasis in intergeneric (*Citrus* + *Poncirus*) combinations. Plants have been regenerated from 6 intergeneric and 1 interspecific combinations. Analysis of ploidy by flow cytometry and SSR markers studies are going on. The obtainment of interesting new tetraploid somatic hybrids has already been confirmed for 4 intergeneric (CIRAD: *C. reshni* + C35 citrange, *C. sinensis* + *P. trifoliata*; *C. sinensis* + C35 citrange; IVIA: *C. macrophylla* + Carrizo citrange) combinations and 1 interspecific combinations (IVIA: *C. aurantium* + *C. taiwanica*). Diploid cybrids with trifoliolate hybrid nucleus and *C. deliciosa* or *C. macrophylla* mitochondria have also been identified for 3 intergeneric combinations (CIRAD: *C. deliciosa* + 4475 citrumello; *C. deliciosa* + C35 citrange; IVIA: *C. macrophylla* + Carrizo citrange). Methodological transfer to INRAM (Morocco), INRAT (Tunisia) and Çukurova University (Turkey) has been done.

[P3]

**Evaluation of Exotic Citrus Germplasm Imported from USA for Processing under Punjab Conditions**

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