'Citremon' in terms of salinity. The experiment was carried out in a greenhouse. The treatments were control [nutrient solution with electrical conductivity [EC(w) of 0.41 dS m($^{-1}$)] and salinity [nutrient solution with EC(w) 6.0 dS m($^{-1}$)] in a randomized block design with -thirty replicants -during 90 days period. Thus shoot and root dry weights, leaf and root potassium (K) concentrations, leaf and root calsium (Ca) concentrations, leaf and root chloride (Cl) concentrations, leaf and root sodium (Na) concentrations and symptoms in leaves were observed. Although root dry weight did not differ among those rootstocks, significant differences were determined in K, Ca, Cl, Na concentrations and shoot dry weights.

S08P03

Salt stress tolerance in acidic and sweet mandarins

Ben Yahmed J.[1], Ben Mimoun M.[2], Talon M.[3], Ollitrault P.[1] and Morillon R.[1]

[1]Centre de coopération internationale en recherche agronomique pour le développement (CIRAD), Amélioration des Plantes à Multiplication Végétative, France; [2]Institut National Agronomique de Tunisie (INAT), Tunisie; and [3]Centro de Genomica, Instituto Valenciano de Investigaciones Agrarias (IVIA), Spain. jihene.benyahmed@gmail.com

Mandarin genotypes can be split in two main groups: the acidic and the sweet mandarins. Acidic are used as rootstocks whereas sweet mandarins are the varieties that are consumed for fruits. The acidic 'Cleopatra' mandarin (*Citrus reshni*) is considered to be the most salt stress tolerant rootstock since it is able to limit the absorption of chloride and sodium at root level. As a consequence, limited amount of toxic ions are translocated to leaves of the seedling or the variety grafted onto the rootstock. If salt stress tolerance of 'Cleopatra' mandarin and its hybrids has been quite documented, little data exist for sweet mandarins. We investigated 16 genotypes representing the large diversity of mandarins when subjected to salt stress. Physiological parameters such as gas exchanges, quantum yield of PSII electron transport, osmotic pressure and leaf chloride contents were analyzed. Samples were also harvested for molecular and biochemical analysis. Very different behaviors were observed. If most of the acidic varieties were considered to be tolerant, also some sweet varieties showed traits of tolerance. Taking account of the results of leaf ion contents, we observed that large leaf chloride contents were not always associated with sensitivity. Molecular analyses are going on to decipher the origin of the tolerance in these genotypes.

S08P04

Changes in transcriptional profiles of mature and immature citrus leaves acclimated to salinity

Pérez-Pérez J.G.[1], Talón M.[2], Brumós J.[2], Botía P.[1] and Colmenero J.M.[2]

[1]Instituto Murciano de Investigación y Desarrollo Agrario y Alimentario (IMIDA), Department of Citriculture, Spain; and [2]Instituto Valenciano de Investigaciones Agrarias (IVIA), Centro de Genómica, Spain. juang.perez@carm.es

While the molecular response of salinized plants in the short-medium term (hours-days) has been broadly studied, the knowledge about the nature of the genes involved in maintaining homeostatic conditions the long term (months-years) has remained elusive. With this aim, we have analyzed the transcriptome of leaves from citrus plants acclimated to moderate salinity (2 years with NaCl 30 mM). Through functional genomics, using the 7K cDNA chip from "Consorcio Valenciano de Genómica Funcional de Cítricos", the transcriptome of citrus plants acclimatized to salinity was analyzed in mature leaves (8 months) and immature leaves (2 months). Although immature leaves accumulated low levels of chloride (0.51%±0.06), they exhibited high responsiveness to salinity (1,211 differential-responsive genes) compared with mature leaves, which cumulated higher chloride levels (1.05% ± 0.01), and showed a lower number of differentially-responsive genes (100 genes). Immature leaves induced functional categories that were not induced in mature leaves, like "cell wall biosynthesis", "metabolism", "defense", "secretion and membrane traffic", "water transport" and "antioxidant activity". On the other hand, the degree of coincidence was higher in the group of genes that were repressed by salinity. Both mature and immature leaves repressed genes mostly involved in "stress response". We highlight how the same plant organ in different developmental stages show huge differences in the amount and nature of genes which are responding to an abiotic stimulus.