

Microsatellite loci inheritance in a Citrus interspecific somatic hybrid

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ABSTRACT: Polyploidy plays an important role in plant evolution. Many works were made to investigate the establishment, formation, genome organisation and evolution of polyploids. Allelic diversity and heterozygosity in polyploids may provide a genetic buffer against inbreeding depression. Many strategies have been developed for triploid citrus breeding. One of these strategies consists in sexual hybridization between diploids and allotetraploid somatic hybrids. Genetic structure of gametes of allotetraploids depends on the mode of chromosome association at meiosis. Microsatellite markers can provide many informations on the structure and genetic studies. In the present work, the allelic segregation is studied on a mandarin (*Citrus reticulata* Blanco) + lemon (*Citrus limon* L.) interspecific citrus somatic hybrid. A progeny derived from crossing pollen of allotetraploid hybrid (MC+EUR) with *Citrus maxima* (Burm.) Merr (CH) ($2n=2x=18$) was used in the present work for genetic analyses. 17 polymorphic markers have been selected among 200 microsatellites markers. Chi-square goodness-of-fit analysis test (χ^2) was carried to determine inheritance mode and which hypotheses described best the obtained frequencies. These results support a tetrasomic inheritance on a Citrus interspecific somatic hybrid. That means that chromosomes pairing on a Citrus interspecific somatic hybrid is the same as on autotetraploid. The allelic inheritance mode of this somatic hybrid provided valuable information for their utilization in a citrus breeding program.