

DETECTION AND VALIDATION OF SNPs AND A SFP IN CHLOROPLAST *Prunus* SPECIES

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Prunus spp. is a very wide genus including all the stone fruits. Peach, almond, plum, apricot and cherry, are mainly grown in the Mediterranean regions. The amplification, sequencing and annotation of plastomes (ASAP) technique has been used to identify polymorphism between different genotypes of rootstocks because it is a simple and an inexpensive method. The genotypes studied were myrobalan plums (*P. cerasifera* Ehrh), and almond × peach hybrid (*P. amygdalus* × *P. persica*), used as control rootstock for many abiotic response like chlorosis, drought and waterlogging tolerance. The amplification and sequencing of the IR region of 25960pb plastid genome using the ASAP technique, revealed single-nucleotide polymorphisms (SNPs) in the 3' end of the IR B region. The SNPs were common between the almond and peach genotypes but different from the myrobalan progeny. In addition, a SFP-indel of 18 nucleotides was found in the 5' end IR B region. This indel was present in the hybrid 'GF-677' but absent in the myrobalan genotype 'Myrobalan 29C'. Primers were designed to identify and amplify such as indel generating a 182 bp fragment in the almond x peach hybrid genotypes and a 165 pb fragment in the plum genotypes. Several other almond x peach hybrid rootstocks ('Garnem', 'Felinem') and plum genotypes ('P.2175' and 'P.2980') have been also tested in order to validate the indel polymorphism. This single-feature polymorphism (SFPs) has been further used to identify several 3-way hybrids created in a breeding program for the characterization of new interspecific plant material. It is noteworthy that the chloroplast genome region where these polymorphisms have been identified is distinct from the regions where most of the chloroplast microsatellites (SSRs) have been identified previously by several other groups. In this paper we are presenting the detection and validation of such a indel in several interspecific hybrids, between plum and almond × peach hybrids.