

S5-1

Fine mapping of self-compatibility locus in sweet cherry

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Keywords: Self-incompatibility, *Prunus*, SNP, Cristobalina, S-locus

Abstract

Sweet cherry (*Prunus avium* L.) is self-incompatible. Spontaneous self-compatibility is rare in the species but some self-compatible varieties have been described. One of these is the local variety 'Cristobalina', from eastern Spain. Self-compatibility is a main breeding objective in sweet cherry and the characterization of this trait will allow its selection in sweet cherry breeding. Earlier works revealed that in 'Cristobalina' self-compatibility is due to a pollen part mutation not linked to the S-locus. Later, Bulk Segregant Analysis approach identified markers linked to the trait and the locus was mapped in the lower part linkage group 3 of sweet cherry. In this work, additional genotypes from families that descend from Cristobalina have been used to fine map the trait using SNP markers. The results provide more closely linked markers flanking the trait, which will allow a more precise selection in marker assisted breeding. The genomic region of the trait was narrowed facilitating candidate gene and NGS approaches for the identification of gene/s associated to the trait.