



Self-compatibility in local Spanish sweet cherry (Prunus avium L.) cultivars Cachi AM<sup>1</sup>, Hormaza JI<sup>2</sup> and Wünsch A<sup>1</sup>

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Sweet cherry is a self-incompatible species, which exhibits S-RNase based gametophytic self-incompatibility. Self-compatibility is a relevant trait in sweet cherry breeding but all self-compatible commercially cultivated varieties derive from a unique ancestor, implying the need to identify and characterize new sources of self-compatibility in order to increase the genetic base of selfcompatible sweet cherry cultivars. In Spain spontaneous self-compatible cultivars are grown locally. This type of self-compatibility is being studied with the aim of designing tools that allow its early selection in breeding programs and with the aim of deepening our understanding of self-incompatibility in Prunus. Molecular and genetic analyses have allowed determining that this type of selfcompatibility is caused by breakdown of the pollen function, but that it is not linked to the S-locus. The S-locus genes S-RNase and SFB do not show structural or transcriptional differences when compared with self-incompatible genotypes with the same S-genotype. Linked markers to this trait have been identified and mapped in the lower region of linkage group 3 of the sweet cherry linkage map, whereas the S-locus is located in linkage group 6. These results and recent findings on the dynamics of self-compatible pollen tube growth will be discussed in the context of the current knowledge of self-incompatibility in Prunus.

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