

Molecular and physiological bases of the rootstock-scion interaction in fruit trees

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Plant grafting is a widely used means of plant propagation. It is of considerable importance in the deployment and regional adaptation of elite cultivars, but its range of application is restricted by anatomical, physiological and biochemical aspects that produce incompatible grafts. The localized type of graft incompatibility is manifested by physical breaking of the trees at the point of union several years after grafting. It is a general phenomenon in many cultivated fruit species and is a factor that makes rootstock and cultivar selection difficult because the introduction of some new varieties requires knowledge of the extent and nature of incompatibility reactions. For a deeper knowledge of this topic, the main goal of our group is to identify genes differentially expressed and anatomical markers involved in the early stages of the incompatibility reaction between graft partners, potentially affecting the fate of the graft. These studies will contribute to a genomic and cellular-level understanding of the complex process of graft incompatibility and thereby ameliorate incompatibility and to extend the range of useful and compatible fruit tree grafting.