

## ***Genetic determinism of graft compatibility in apricot***

*Patricia Irisarri<sup>1</sup>, Tetyana Zhebentyayeva<sup>2</sup>, Pilar Errea<sup>1</sup> and Ana Pina<sup>1</sup>*

<sup>1</sup>Unidad de Hortofruticultura, CITA de Aragón. Avda Montañana, 930, 50059, Zaragoza, Spain.

<sup>2</sup>Department of Genetics and Biochemistry. Genomics and Computational Biology Laboratory. Clemson University. Office 310 Biosystems Research Complex. 105 Collings Street. Clemson, SC 2963.

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Breeding of most fruit tree species is an expensive and time-consuming process due to the long juvenile period, the long generation time and the large plant size. The rapid increase of new cultivars and rootstocks along with the slow and expensive processes of selection make necessary the search for new methods for an early selection of the plant material. In this sense, early detection of graft compatibility substantially aids cultivar and rootstock breeding selection. The inheritance of graft (in)-compatibility trait was studied in a population of 81 apricot seedlings obtained from a controlled intraspecific cross between the Spanish cultivar 'Moniqui' (female parent, incompatible) and the French cultivar 'Paviot' (male parent, compatible). Screening of graft compatibility on the progeny grafted onto the plum rootstock 'Marianna 2624' was based on anatomical symptoms. Bud take, growth, necrotic line and vascular discontinuity were observed during one year after grafting. Despite that the results showed that graft compatibility is a complex agronomic trait, the phenotypic parameters observed in the F1 individuals revealed that the necrotic line, discontinuities in the bark and wood, are highly correlated and play an important role in the development of the graft union and the establishment of vascular connections. Knowledge of compatibility inheritance will help cultivar and rootstock breeding and will contribute to understand the genetic mechanism of graft compatibility.

### **Corresponding author:**

Ana Pina

apina@aragon.es

Unidad de Hortofruticultura, CITA de Aragón. Avda Montañana, 930, 50059, Zaragoza, Spain.