



Genetic diversity of Spanish *Prunus domestica* L. germplasm reveals a complex genetic structure underlying

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Abstract:

European plum (*Prunus domestica* L.) is an ancient domesticated species cultivated in temperate areas worldwide whose genetic structure has been scarcely analyzed to date. In this study, a broad representation of Spanish European plum germplasm collected in Northeastern Spain and a representative set of reference cultivars were compared using nuclear and chloroplast markers. The number of alleles per locus detected with the SSR markers ranged from 8 to 39, with an average of 23.4 alleles, and 8 haplotypes were identified. Bayesian model-based clustering, minimum spanning networks, and the analysis of molecular variance showed the existence of a hierarchical structure. At the first level, two genetic groups were found, one containing 'Reine Claude' type reference cultivars altogether with ca. 25% of local genotypes, and a second one much more diverse. This latter group split in two groups, one containing most (ca. 70%) local genotypes and some old Spanish and French reference cultivars, whereas the other included 24 reference cultivars and only six local genotypes. A third partition level allowed a significant finer delineation into five groups. As a whole, the genetic structure of European plum from Northeastern Spain was shown to be complex and conditioned by a geographical proximity factor. This study not only contributes to genetic conservation and breeding for this species at the national level, but also supports the relevance of undertaking similar tasks of collection and characterization in other unexplored areas. Moreover, this kind of research could lead to future coordinated ac-



tions for the examination of the whole European plum diversity, to define conservation strategies, and could be used to better understand the genetic control of traits of horticultural interest through association mapping.

Biography:

Hortofruti culture Unit, Center for Agri food Research and Technology of Aragón (CITA), Agri-Food Institute of Aragón-IA2 (CITA-University of Zaragoza). Conceptualization, Data duration, Formal analysis, Investigation, Methodology, Resources, Supervision, Writing – original draft, Writing – review & editing

Publication of speakers:

1. Zohary D, Hopf M. Domestication of plants in the old world. Oxford University Press, Oxford, UK; 2000.
2. Reales A, Sargent DJ, Tobutt KR, Rivera D. Phylogenetics of Eurasian plums, *Prunus* L. section *Prunus* (Rosaceae), according to coding and non-coding chloroplast DNA sequences. *Tree Genet Genomes*. 2010; 6: 37–45.
3. Tedesco, Sara & Pina, Ana & Feveireiro, Pedro & Kragler, Friedrich. (2020). A Phenotypic Search on Graft Compatibility in Grapevine. *Agronomy*. 10. 706. 10.3390/agronomy10050706.
4. Irisarri, Patricia & Zhebentyayeva, T. & Errea, Pilar & Pina, Ana. (2019). Inheritance of self- And graft-incompatibility traits in an F 1 apricot progeny. *PLOS ONE*. 14. e0216371. 10.1371/journal.pone.0216371.

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