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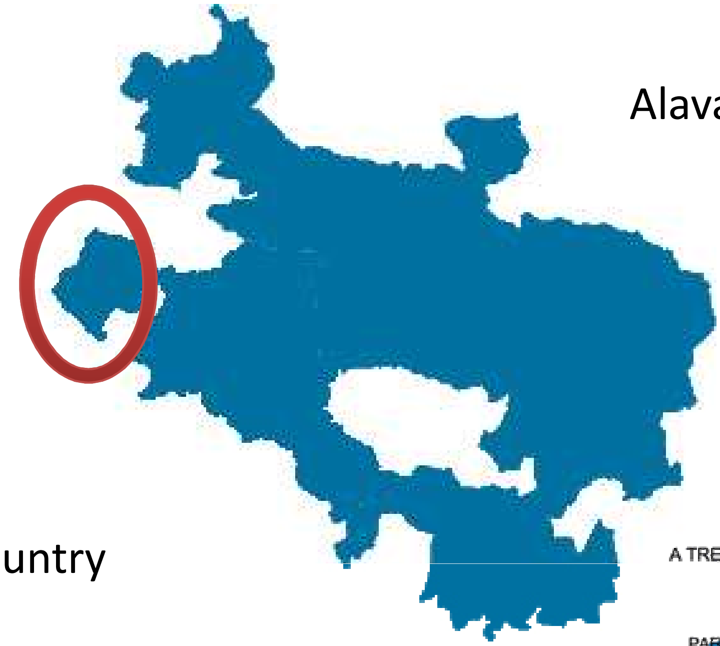
Analysis of genetic identity of Apples, Pears and European Plums prospected at Valderejo Natural Park (Álava, Spain)

M.J. Laquidáin, J. Urrestarazu, S. Crespo, L.G. Santesteban, C. Miranda and J.B. Royo
Departamento de Producción Agraria/Escuela Técnica Superior de Ingenieros Agrónomos
Universidad Pública de Navarra.
Campus de Arrosadia, 31006 Pamplona (Spain)

Valderejo Natural Park (Alava, Basque Country, Spain)

Basque Country



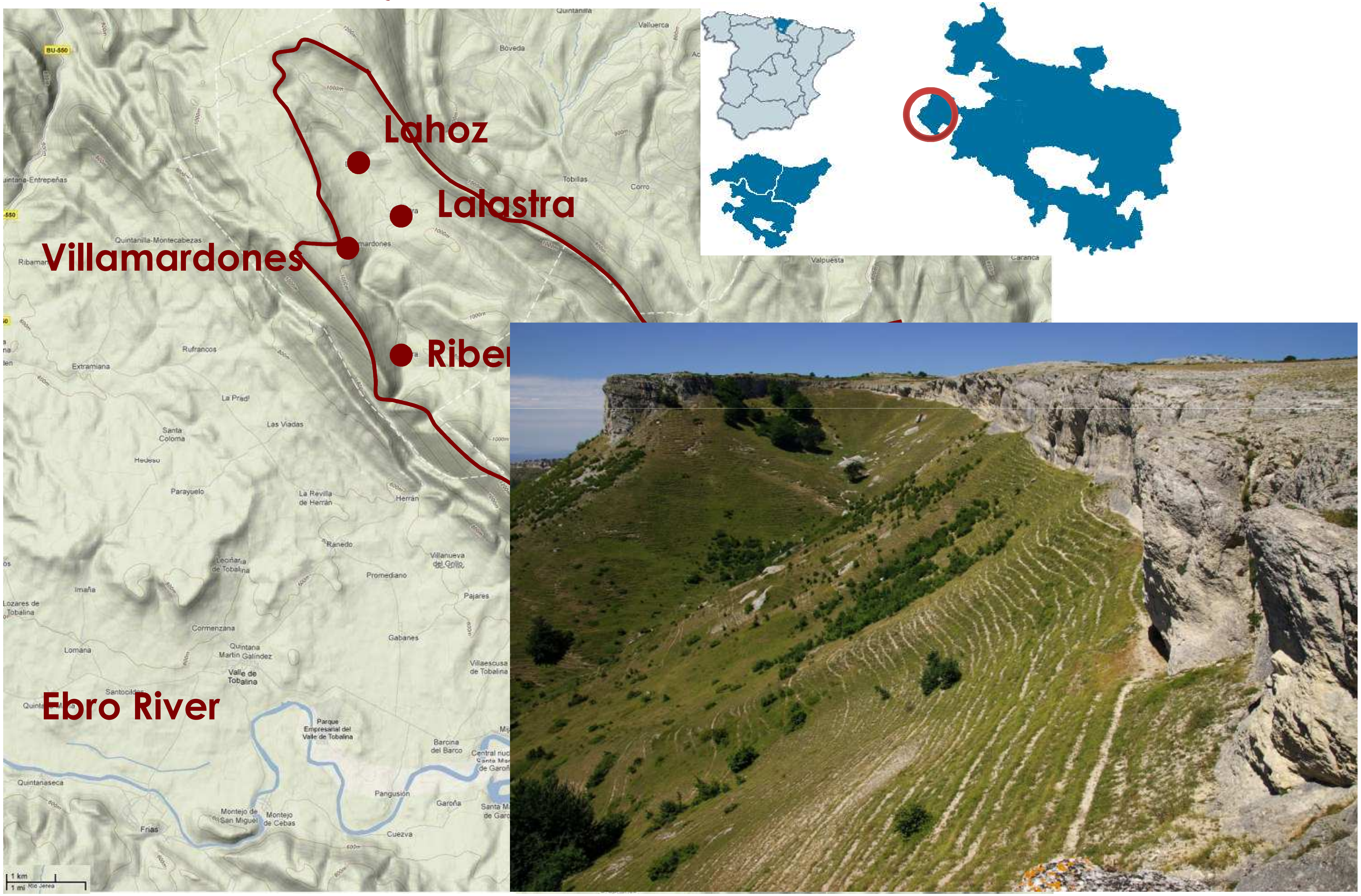
Alava

Declaration as Natural Park: 1992

3.500 Ha.

Stable population: 9 (in Lalastra)

Valderejo Natural Park (Alava, Basque Country, Spain)



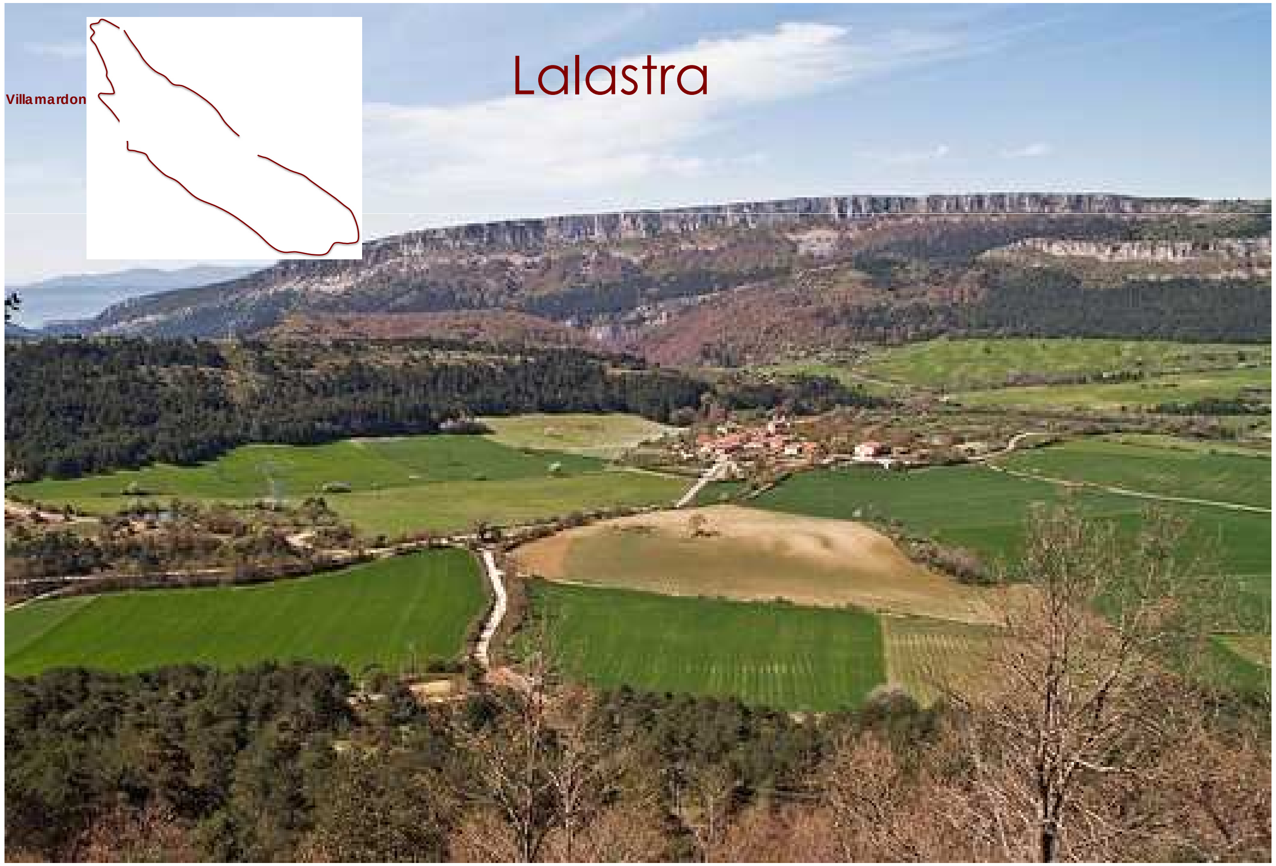
Valderejo Natural Park (Alava, Basque Country, Spain)

Valderejo Natural Park (Alava, Basque Country, Spain)

Villamardones

"Recovery and Conservation of the Fruit Genetic Heritage kept in Valderejo Natural Park"

2006: 'Red de Semillas de Euskadi' (Basque Country Seed Network) begin surveys



164 accessions collected
18 fruit tree species
Apple
Pear
Quince
European plum
Cherry
Fig
Walnut
Medlar
Hazel
Grapevine
…

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…

To determine with SSR genetic identities and potential relationships of 15 apple, 2 pear and 16 european plum prospected in Valderejo Natural Park

SSR used

Apple	Pear	E. Plum
NZ02b01[z]	CH01h10[x]	UDP98-409[v]
COL[y]	NB103a[w]	UDP98-410[u]
CH02c09[x]	NB105a[w]	ps12a02[t]
CH02d08[x]	NB106a[w]	BPPCT-007[s]
CH04e05[x]	NB109a[w]	BPPCT-010[s]
CH01e12[x]	NH023a[w]	BPPCT-026[s]
CH01f02[x]	NH029a[w]	Pac B35[r]
CH01h02[x]	RLG1-1[w]	Pac A33[r]
CH01h10[x]		Pac B22[r]
		Pac C13[r]
		Pac C25[r]
		Pac A49[r]

[z]Guilford et al. (1997), [y]Guianfranceschi et al. (1998), [x]Liebhard et al., 2002)
[w]Yamamoto et al. (2002), [v]Cipriani et al. (1999), [u]Testolin et al. (2000),
[t]Sosinski et al. (2000); [s]Dirlewanger et al. (2002), [r](Decrocq et al. (2003)

Reference material

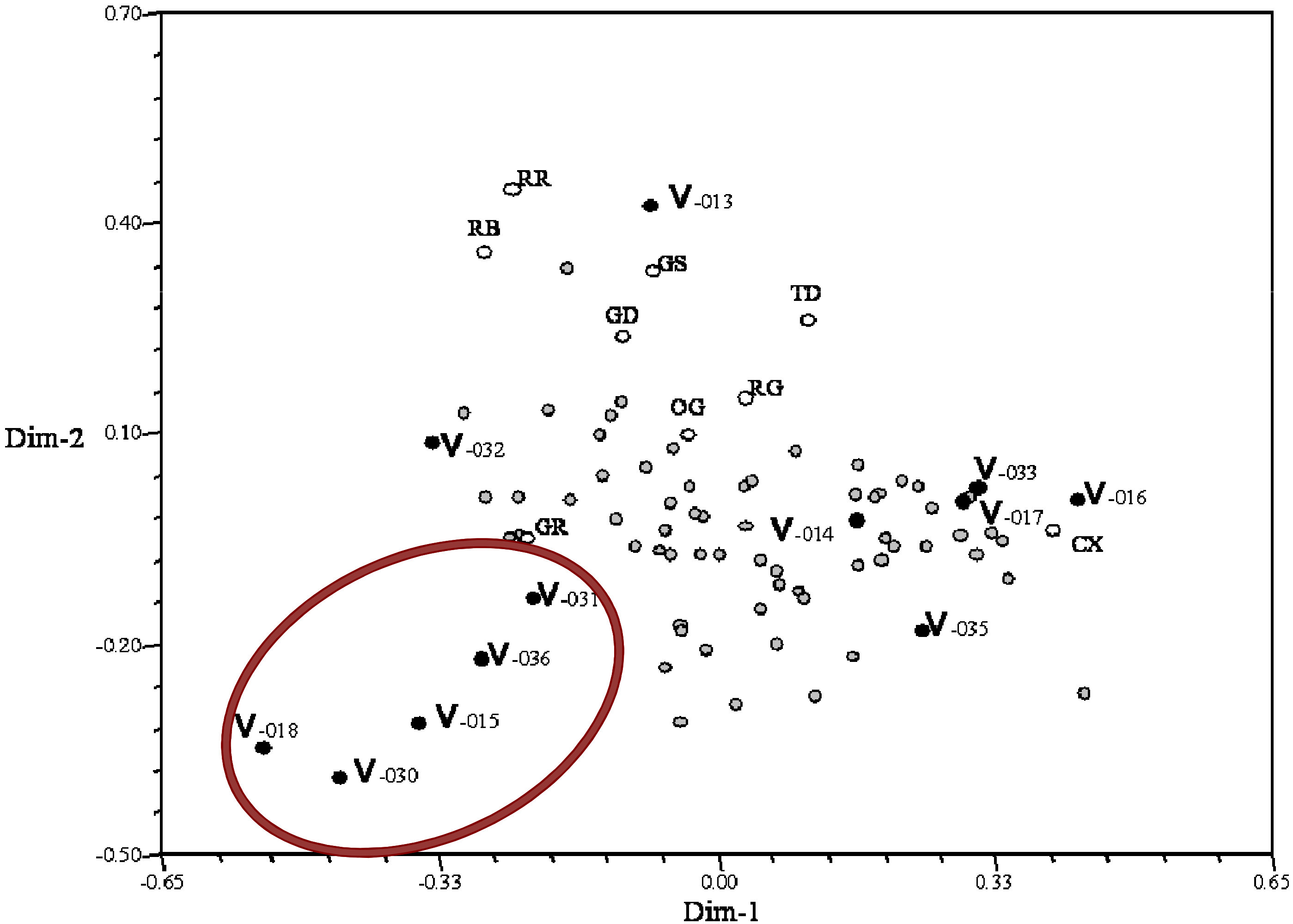
- Commercial cultivars
- Ancient cultivars curated in Germplasm Banks:
  - Universidad Pública de Navarra
  - Universidad de Lleida
  - Est. Experimental Aula Dei

Genetic relationships

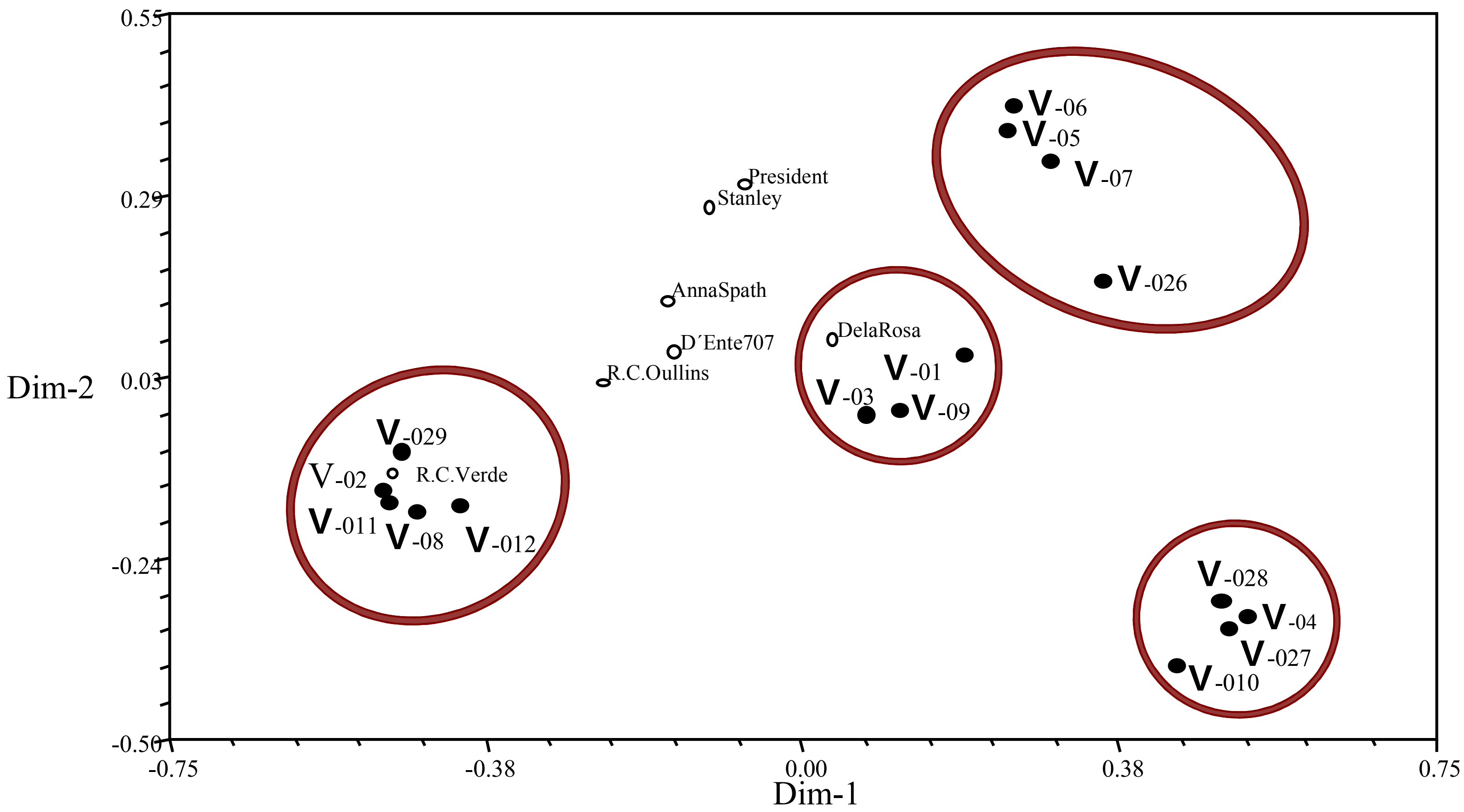
- Nei and Li distance
- UPGMA clustering
- PCA clustering

61 alleles amplified – All previously identified in the references
No identities with references (453 ancient and 10 international cultivars)
2 groups of synonims identified in Valderejo germplasm:

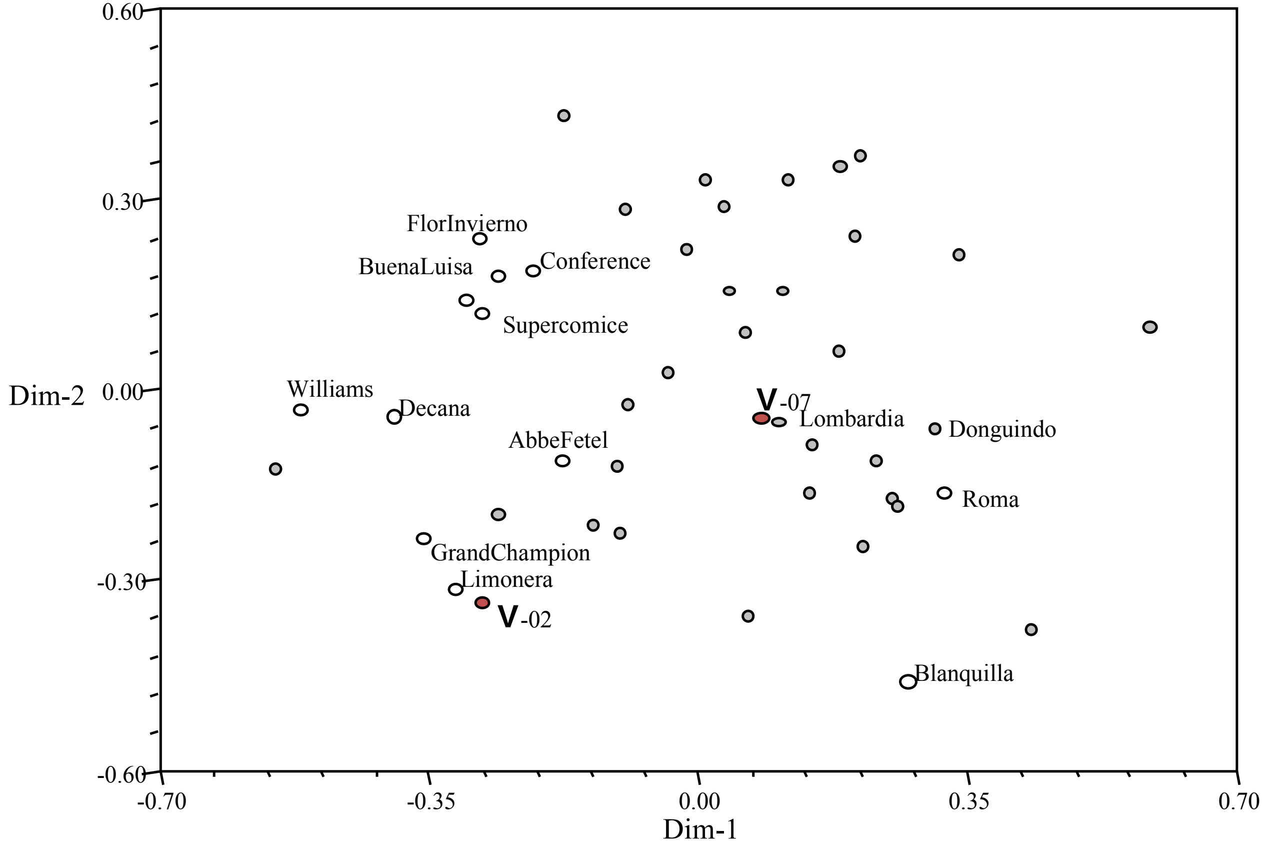
- V-018, V-019, V-029
- V-033, V-034



137 alleles amplified – 27 "new" alleles
No identities with references.
No synonims



23 alleles amplified – no “new” alleles
No identities with references.
No synonims



Conclusions

The prospections perfomed in Valderejo have located some promising material, as it comprehends several individuals remarkably different from the reference material.

It is necessary further characterizations, mainly morpho-agronomical, that will be performed when the grafted trees develop at the germplasm bank.

Thanks for your attention.

Acknowledgments

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Dr. Maria Herrero – EEAD

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