

White wines

Red Wines

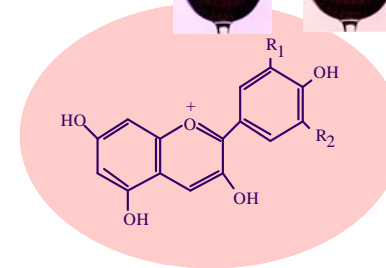
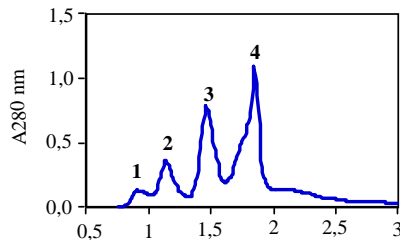


Quality

Varietal Identification by
molecular techniques

Proteins and polysaccharides in wine:
Foamability of sparkling wines
Protein Haze: estabilization

Color Extraction and Estabilization
Astringency and Bitterness
Phenolic maturity



*Only by knowing the factors that determine the quality
we can improve the product*

Seniors: { Fernando Zamora
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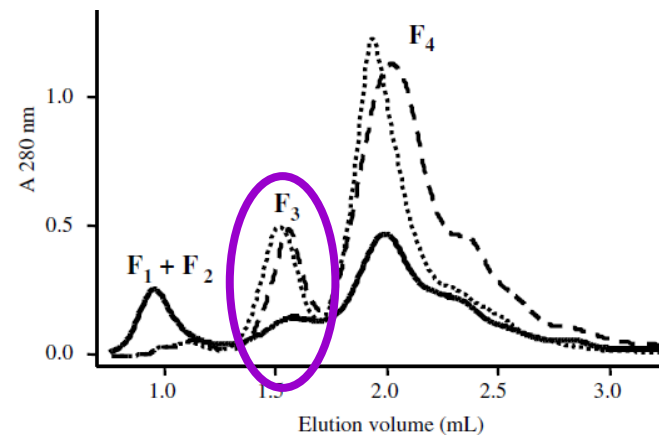
PhD estudents: { Gemma Marsal
Mariona Gil
Elena González
Martín Fanzone

Objetives

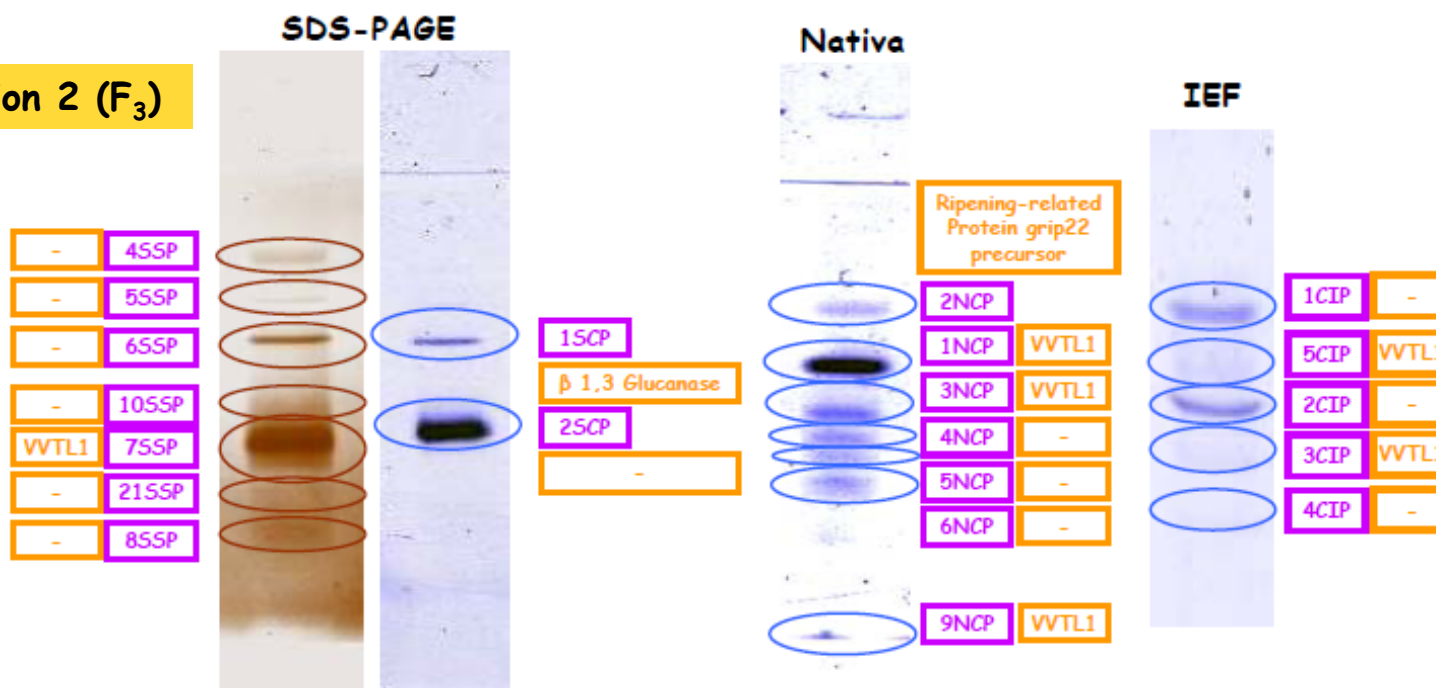
- ◆ Identification of wine instable proteins and factors conditioning protein haze
- ◆ Identification of the factors conditioning foam quality of sparkling wines
- ◆ Influence of winemaking techniques on protein stability and foan quality
- ◆ Influence of climate change on the quality of Cava

Characterization of natural haze protein in sauvignon white wine

Esteruelas, M., Poinsaut, P., Sieczkowski, N., Manteau, S., Fort, F., Canals, J.M., Zamora, F. (2009) *Food Chemistry*, **113**, 28–35.



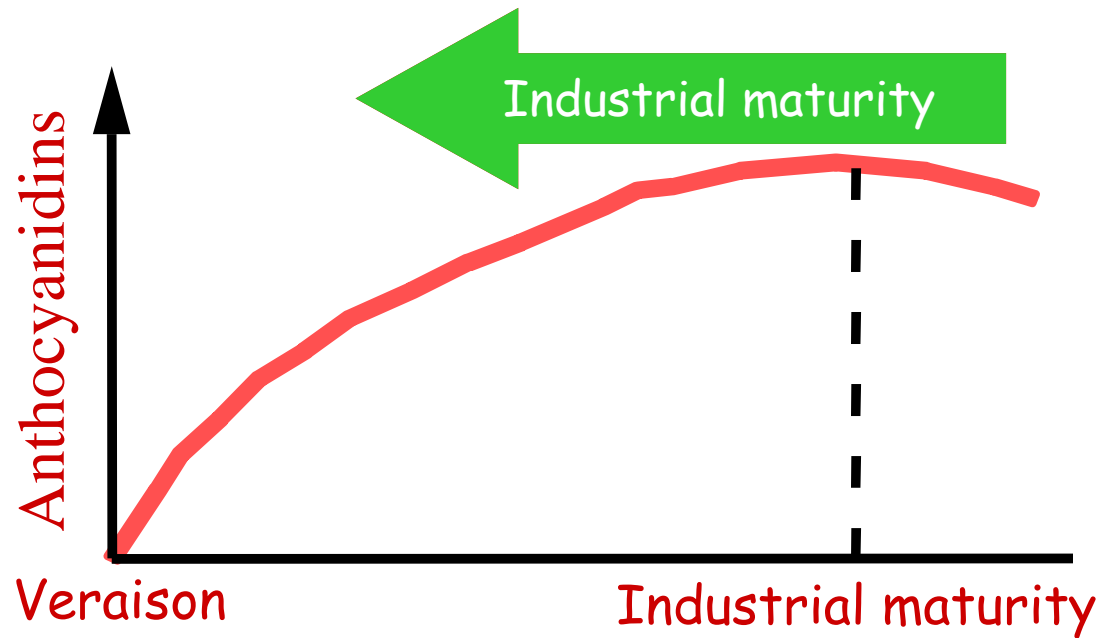
Fraction 2 (F₃)



Objetives

- Development of methodologies for assessing color stability, astringency, phenolic maturity and phenolic characterization
- Influence of winemaking and aging techniques on color stability, astringency and ability for aging
- Influence of climate change on the quality of red wines; Adapting winemaking techniques to these conditionants

An increasing imbalance between industrial and phenolic ripeness



*Bitterness,
astringency and
herbaceous characters*

↑ Alcoholic degree and pH

↓ Titratable acidity

}



Advance of the
date of harvest

However Skins and specially seeds remain already green



The million dollar question

How can we adapt the winemaking to the constraints of climate change?

•A:

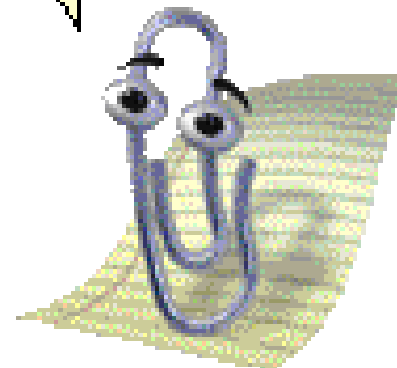
•B:

•C:

•D:

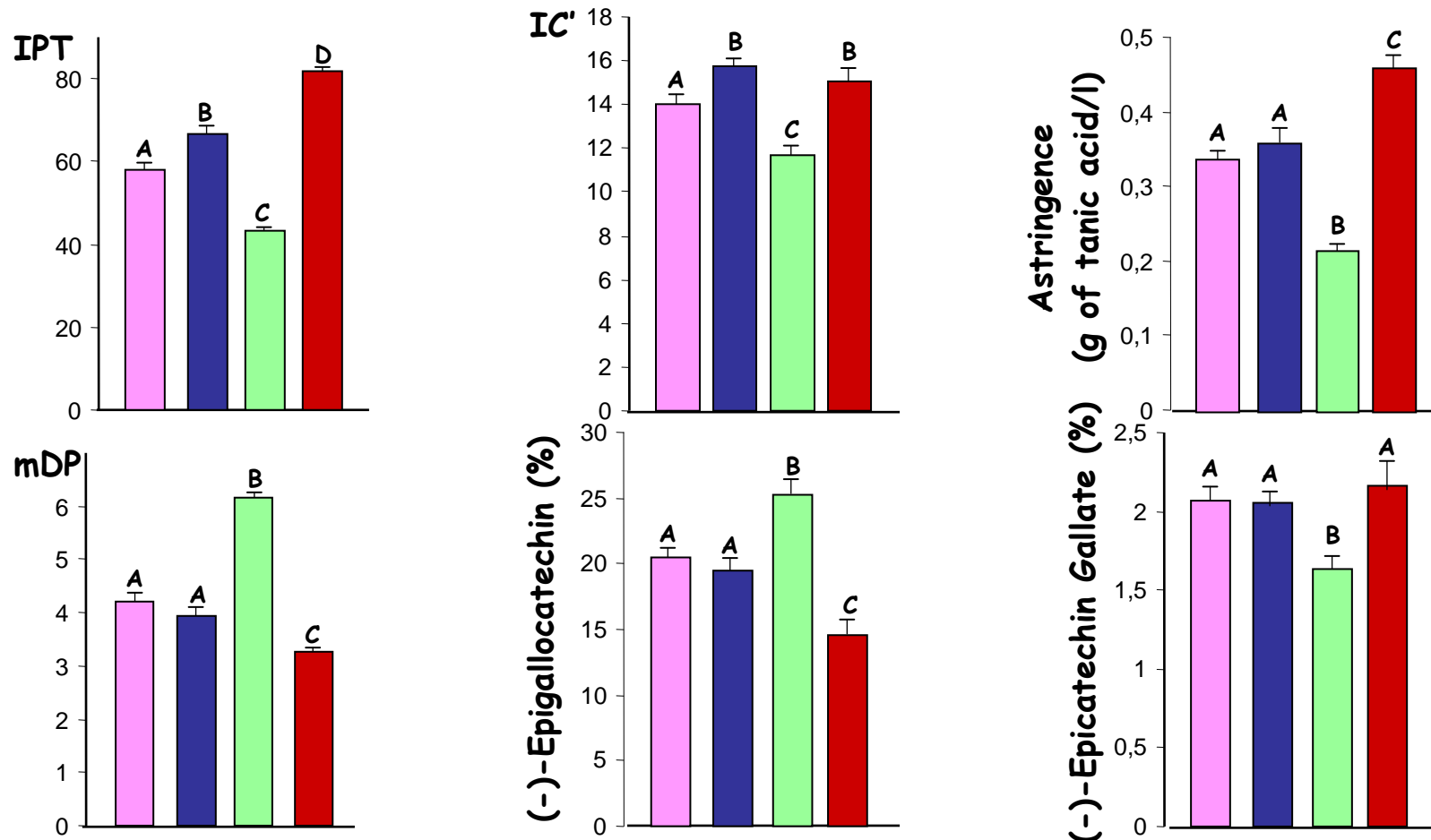
From our point of view, there are only two possibilities:

- Adapting winemaking techniques to not-fully ripen grapes
- Wait for full maturity and apply techniques for partial dealcoholization and for decreasing pH



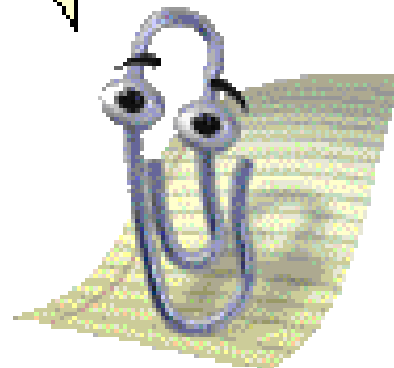
Influence of the elimination and addition of seeds

Canals, R.; Llaudy, M.C.; Canals, J.M.; Zamora, F. *Eur Food Res Technol* (2008) 226:1183–1190



From our point of view, there are only two possibilities:

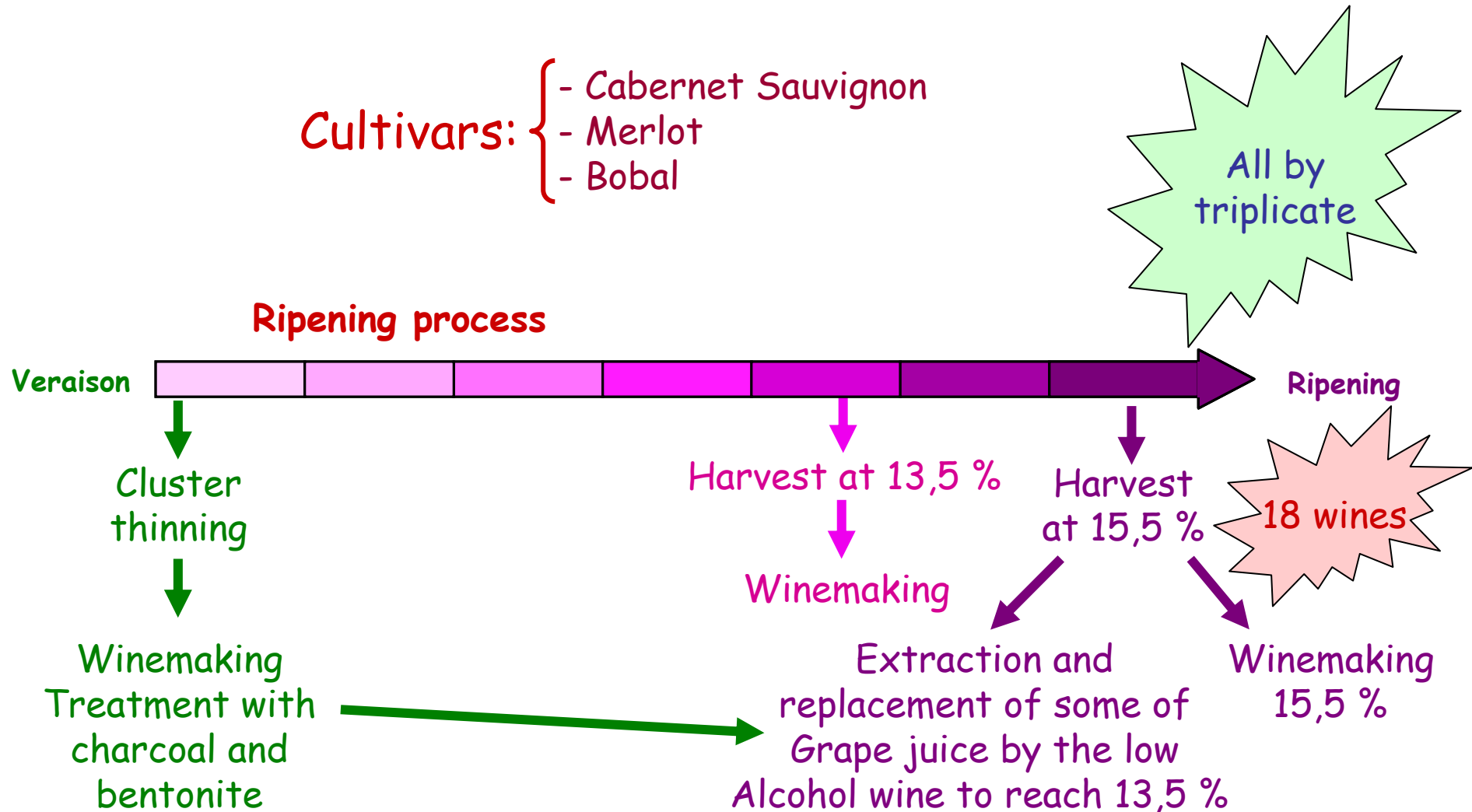
- Adapting winemaking techniques to not-fully ripen grapes
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Use of green grapes from a cluster thinning for simultaneously decreasing ethanol content and pH

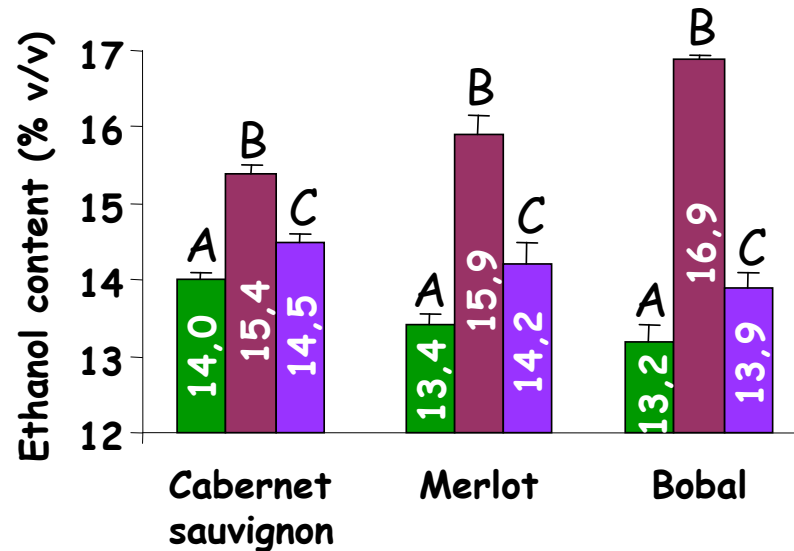
Kontoudakis, N., Esteruelas, M., Fort, F., Canals, J. M., Zamora, F. (2011) *Aust. J. Grape Wine Res.*, **17**, 230-238

Cultivars: {
- Cabernet Sauvignon
- Merlot
- Bobal

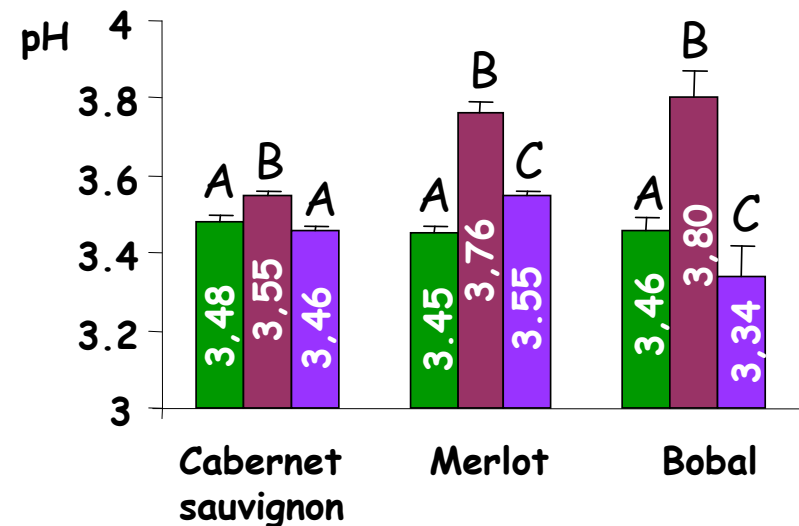
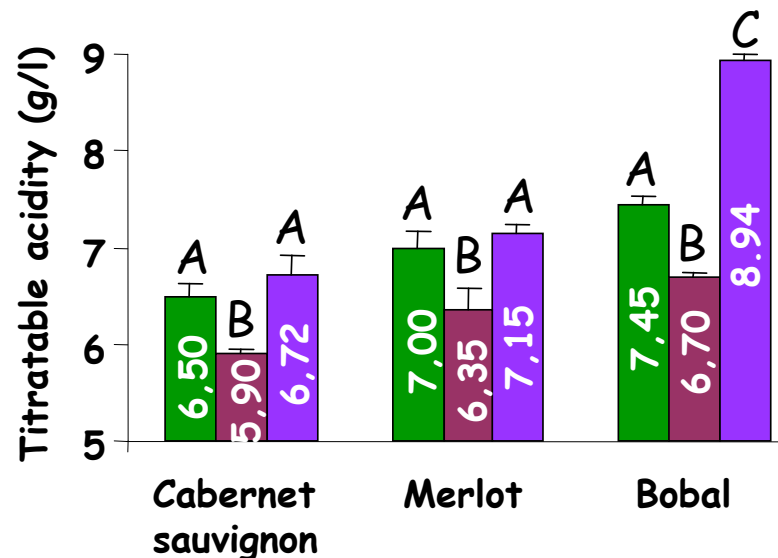


Kontoudakis, N., Esteruelas, M., Fort, F., Canals, J. M., Zamora, F. (2011) *Aust. J. Grape Wine Res.*, **17**, 230-238

General Parameters



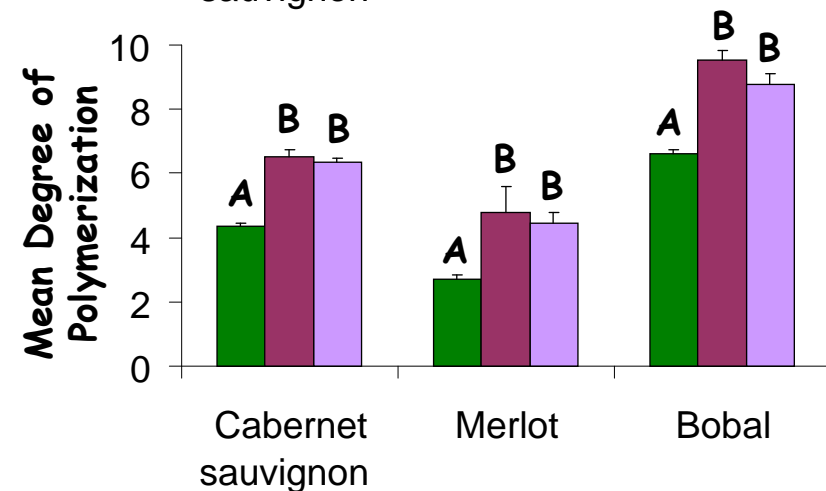
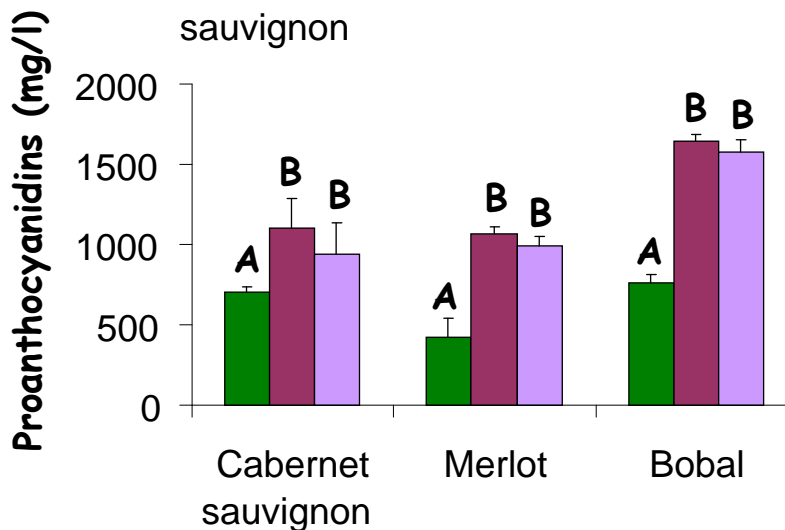
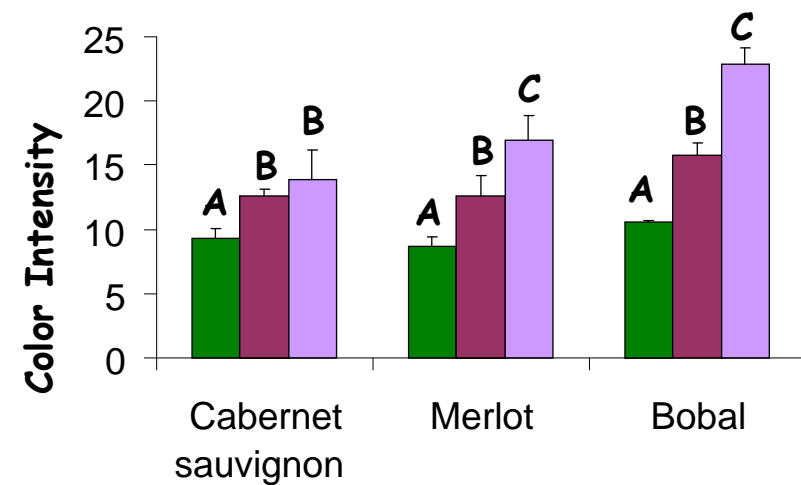
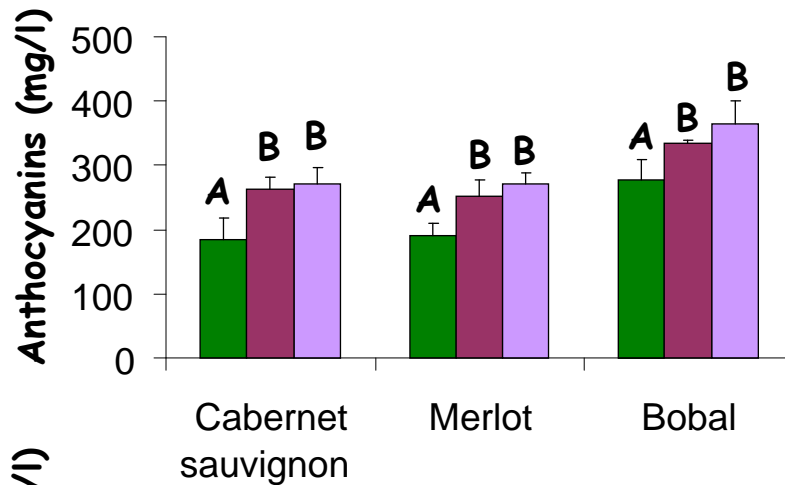
- Control First Harvest
- Control Second Harvest
- Second Harvest with treatment



Kontoudakis, N., Esteruelas, M., Fort, F., Canals, J. M., Zamora, F. (2011) *Aust. J. Grape Wine Res.*, **17**, 230-238

Color and phenolic compounds

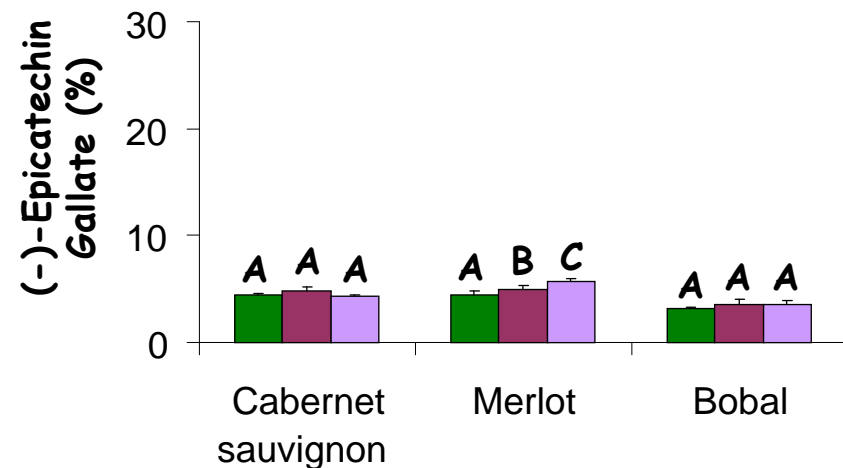
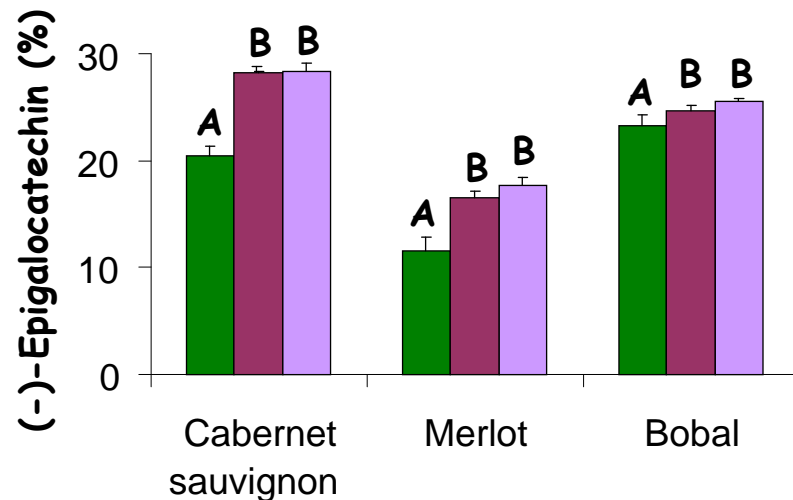
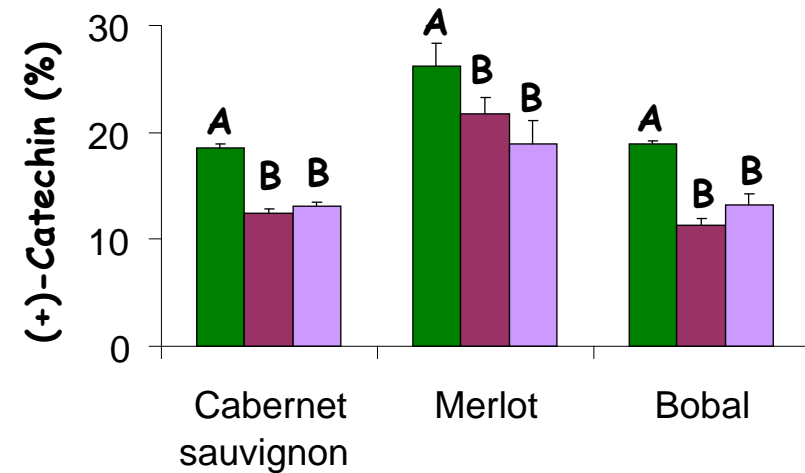
■ Control 1st Harvest ■ Control 2nd Harvest ■ 2nd Harvest with treatment



Kontoudakis, N., Esteruelas, M., Fort, F., Canals, J. M., Zamora, F. (2011) *Aust. J. Grape Wine Res.*, 17, 230-238

Percentage of different monomers of proanthocyanidins

■ Control 1st Harvest ■ Control 2nd Harvest ■ 2nd Harvest with treatment



Objetives

- ◆ Application of Molecular Techniques to Varietal Identification
- ◆ From Leaves, Stems and Seeds

Marsal, G., Baiges, I., Canals, J.M., Zamora, F., Fort, F. (2011) *Am. J. Enol. Vitic.*, **62**, 376-381

**more than 750 samples
analyzed with 20 SSR**

- ◆ Application for evolutionary and kinship studies
- ◆ Identification of clons
- ◆ Analysis of la Varietal composition of wines

The case of Baboso negro



Baboso negro



Alfrocheiro preto

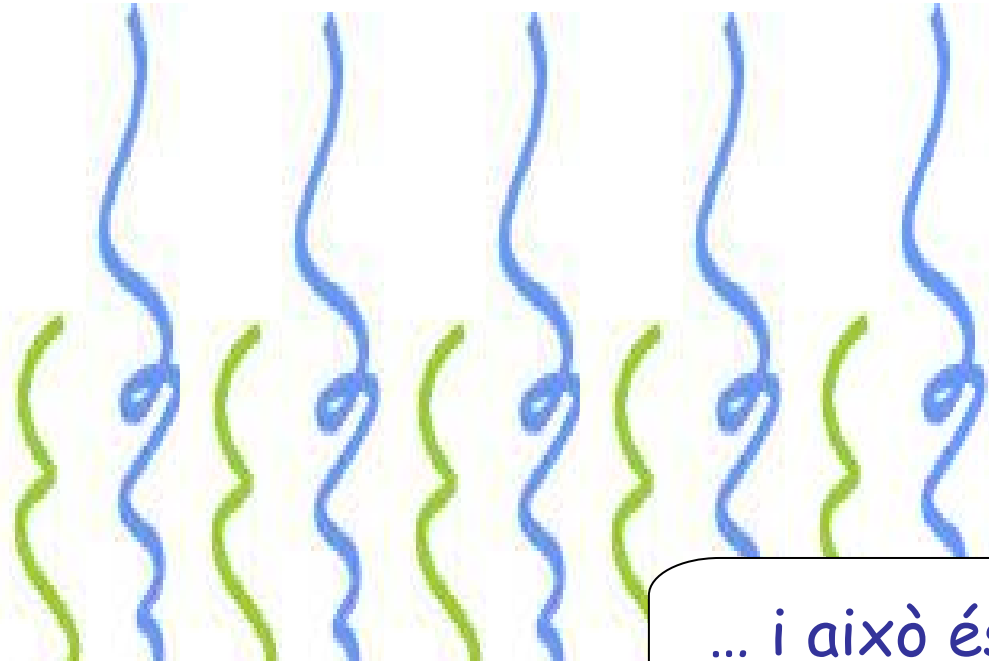
Cultivar	BABOSO NEGRO	ALFROCHEIRO
Country	España	Portugal
vvs2	140	140
	149	149
vvs3	212	212
	218	218
vvs29	169	169
	169	169
vvmd5	238	222
	238	234
vvmd6	198	198
	206	206
vvmd7	252	252
	256	256
vvmd28	236	235
	248	247
vvmd36	253	253
	270	269
zag21	199	199
	201	201
zag47	154	154
	164	164
zag62	186	186
	198	198
zag64	136	136
	138	138
zag83	187	187
	193	193
uch11	241	240
	247	246
uch12	167	166
	167	166
uch19	192	192
	204	204
scu06	162	171
	162	173

Baboso



Alfrocheiro Preto





... i això és tot amics



That's All Folks

