

LalVigne®

Grow your wine



 LalVigne®
AROMA
Grow your wine

LALLEMAND

CILJ: “POBOLJŠATI KVALITETU VINA, POBOLJŠANJEM KVALITETE GROŽĐA PRIMJENJUJUĆI POSEBNU TEHNOLOGIJU U VINOGRADU”



LalVigne®
Grow your wine





**Povećana koncentracija
prekursora
arome u bobici**

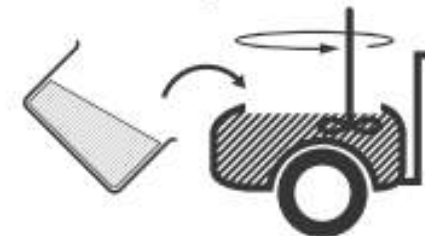
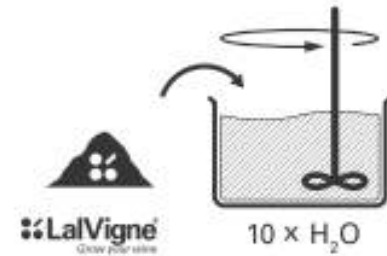
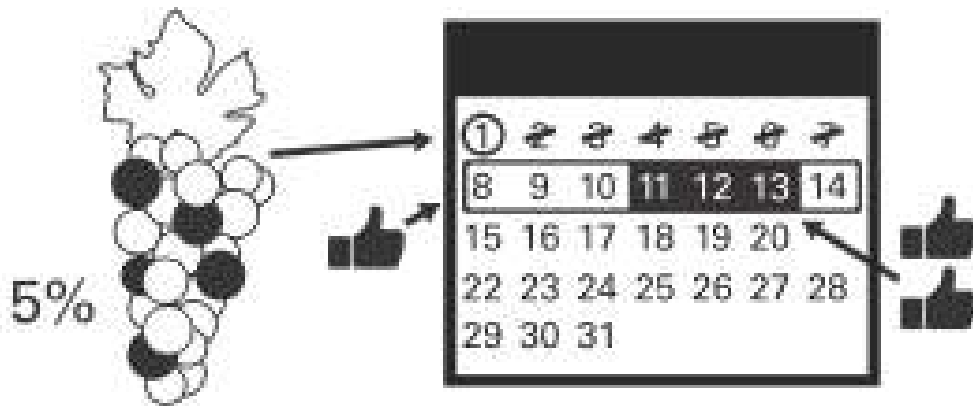


**Poboljšana fenolna
zrelost grožđa**

LalVigne[®] *Grow your wine*

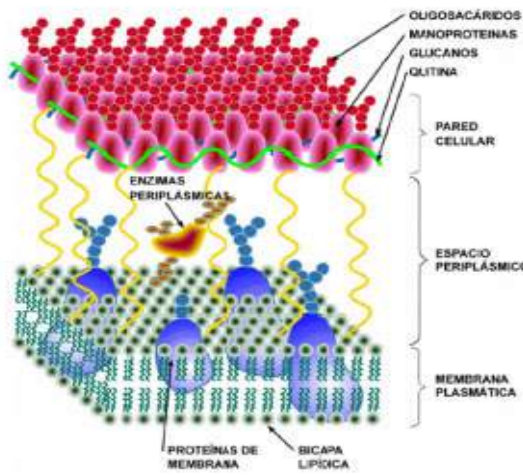
1st

2nd



H₂O aprox. 200 – 600 l / ha
(50 – 160 gal / 2.5 acre)

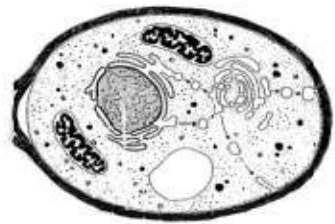
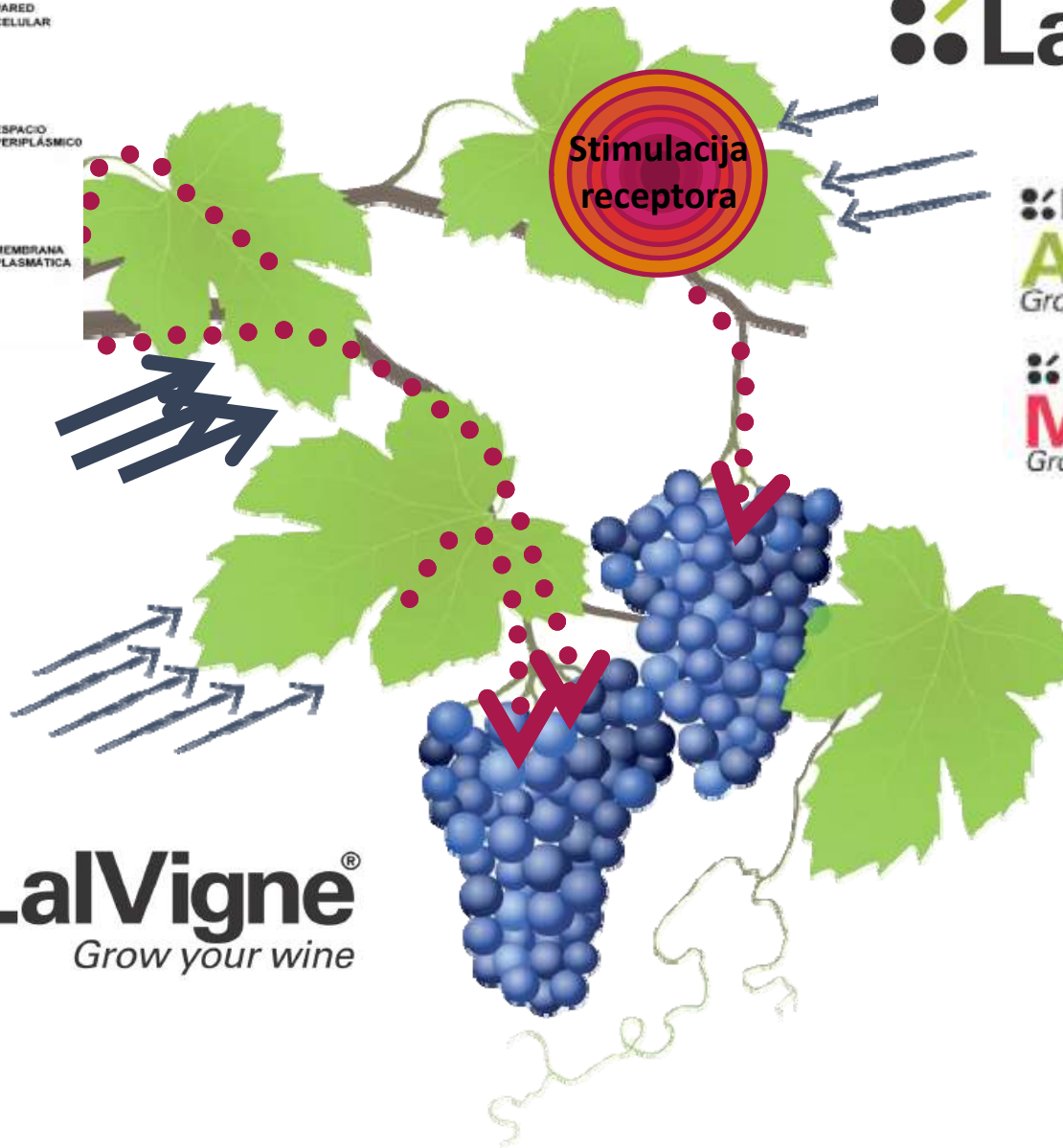




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LalVigne®
MATURE
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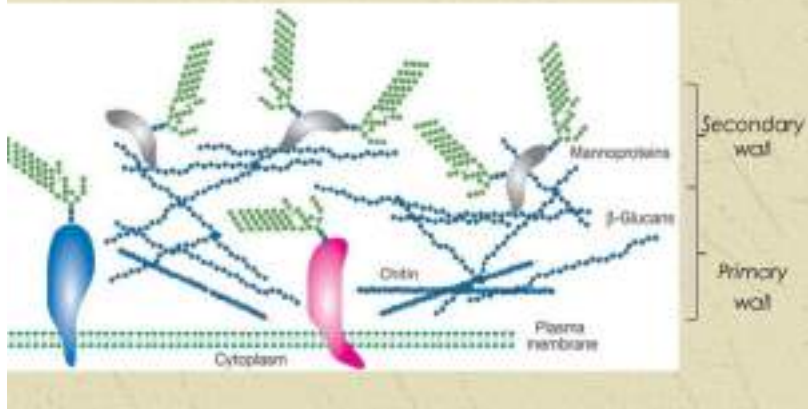


Aminokiseline,
Peptidi,
Polisaharidi,
Manoproteini...

LalVigne®
Grow your wine

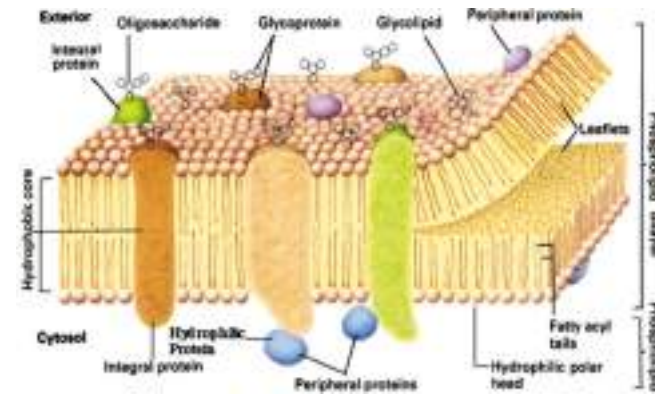
DJELOVANJE

Basic component of fungal cell wall



LalVigne™
Grow your wine

Yeast



Za biljku, kvasac
je strana tvar,
gljivica



LalVigne™
Grow your wine

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DJELOVANJE

LaVigne[®]
AROMA
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Receptori biljke propoznaju „napad“

LaVigne[®]
MATURE
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Biljka aktivira odgovor

Utjecaj na gen koji kontrolira sintezu sekundarnog metabolizma



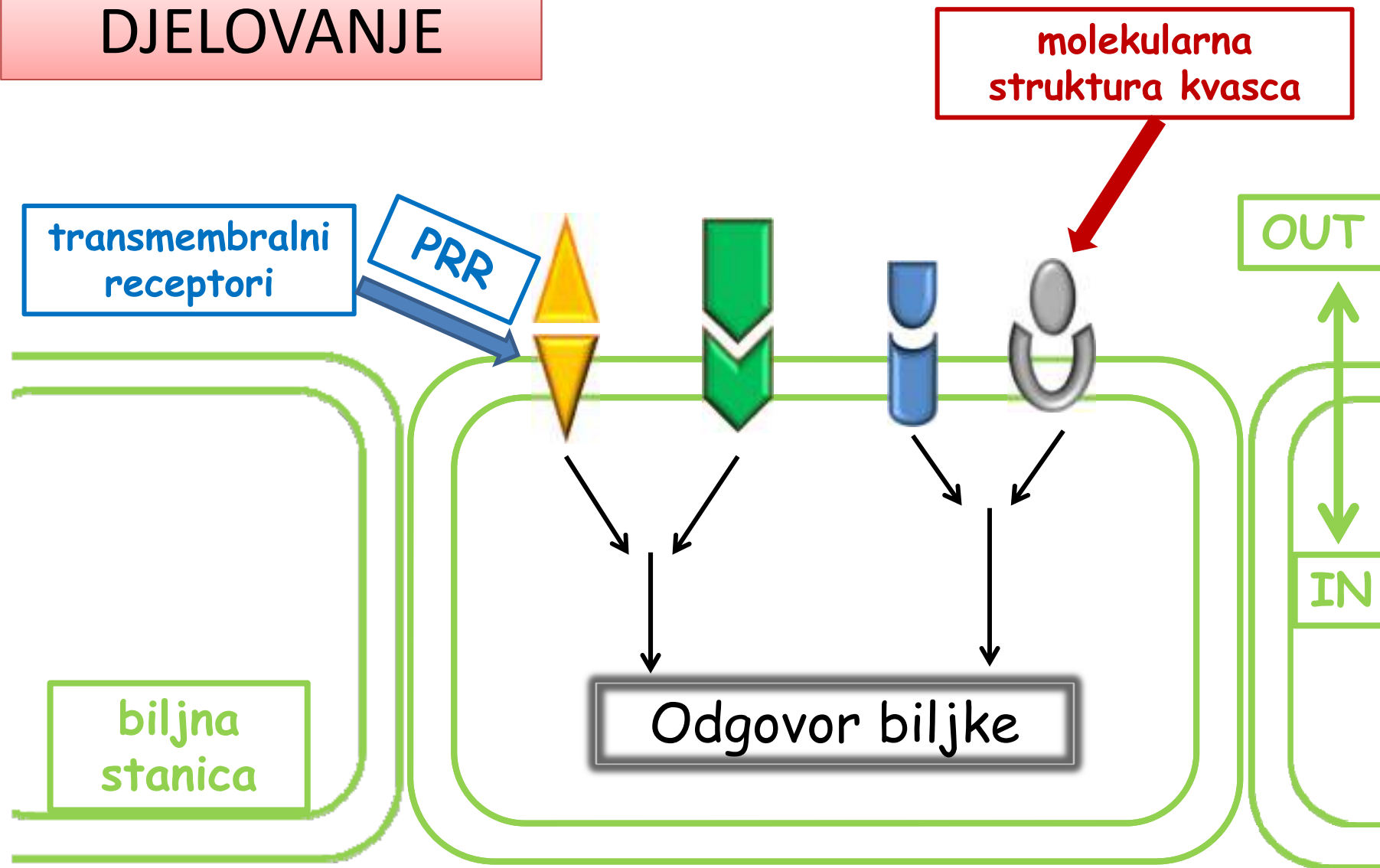
Fenotipske razlike



Bolja kvaliteta vina



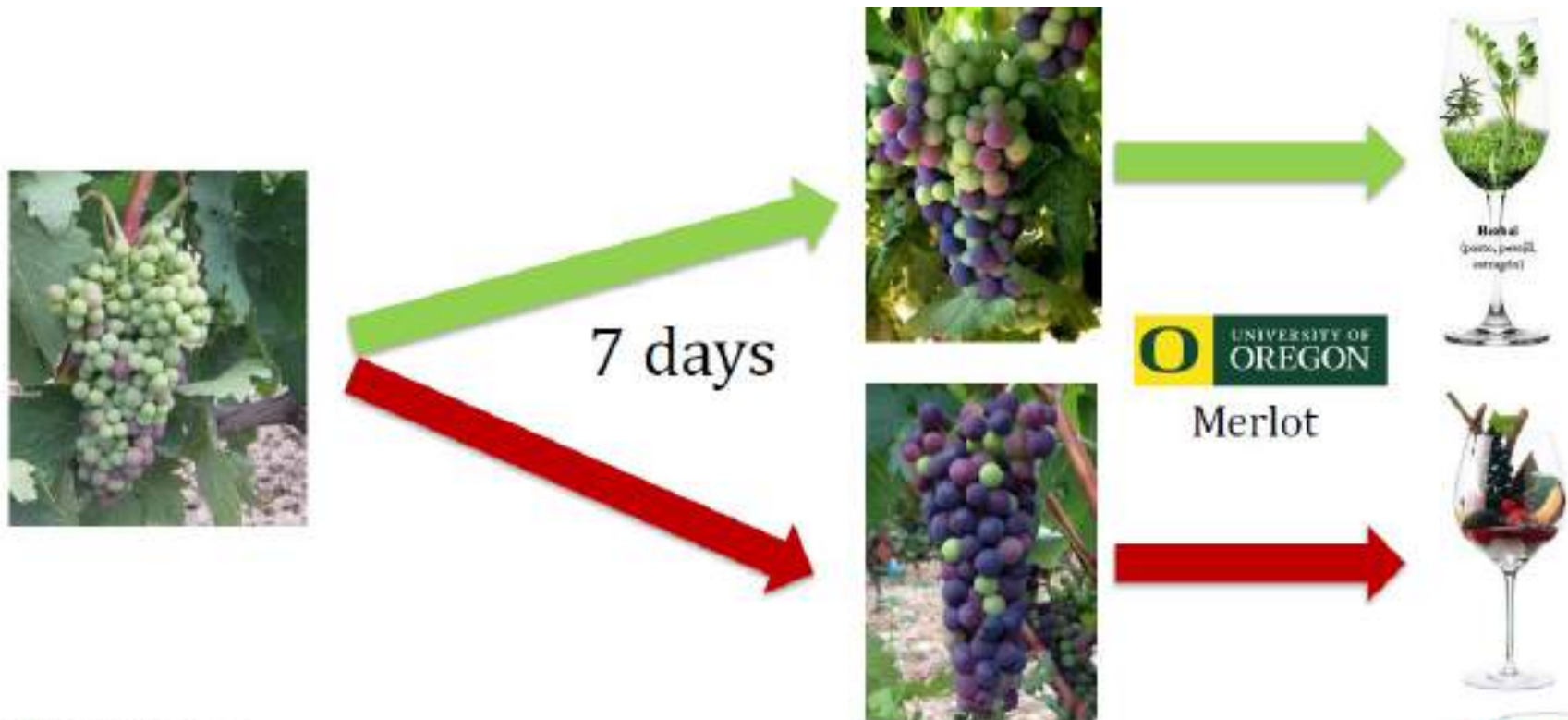
DJELOVANJE



Prednosti za vinogradarstvo:

1. Ranija berba
 - Toplije regije (manje %vol)
 - Hladnije regije (kiše, mraz)
2. Deblja kožica bobice
3. Homogeno dozrijevanje
4. Manje intervencije u vinogradu
5. Prirodni proizvod

Homogeno dozrijevanje



Merlot

Manje intervencije u vinogradu:

1. Skidanje lišća
 2. „Zelena berba”
- Potrebno vrijeme
 - Manji prinos
 - Sastav grožđa koji nije u balansu
 - Fizički rad
 - Trošak





Za vrhunski potencijal aromatike budućeg vina

Maja Maslek
LALLEMAND



- Deblja kožica bobice
- Viša koncentracija GSH
- Manja degradacija aromatike – bolja stabilnost aromatike
- Viši potencijal sortnih aroma (viši Varietal Aroma Potential Index)
- Kod tiolnih sorata: viši 3MH i 3MHA u vinu
- Smanjena vegetativna/agresivna aromatika
- Nema utjecaj na masu bobica, Brix, pH ili ukupne kiseline
- Bolja kvaliteta grožđa i vina

DEBLJA KOŽICA BOBICE

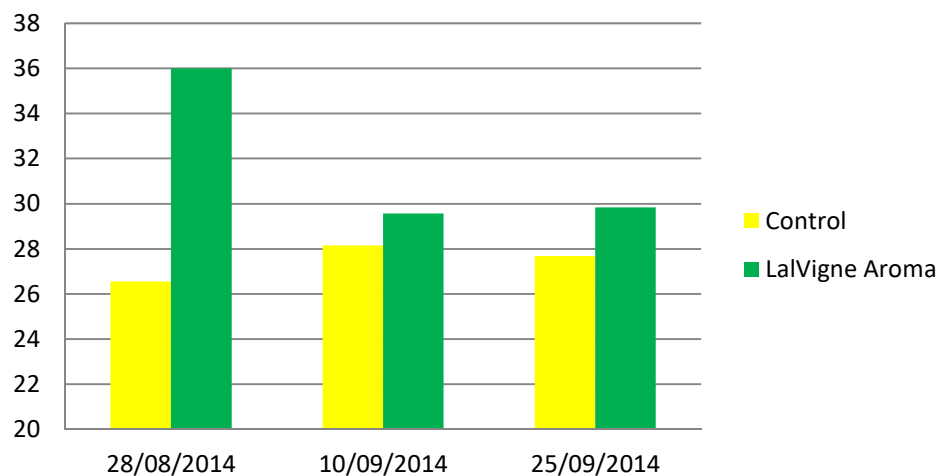


2015

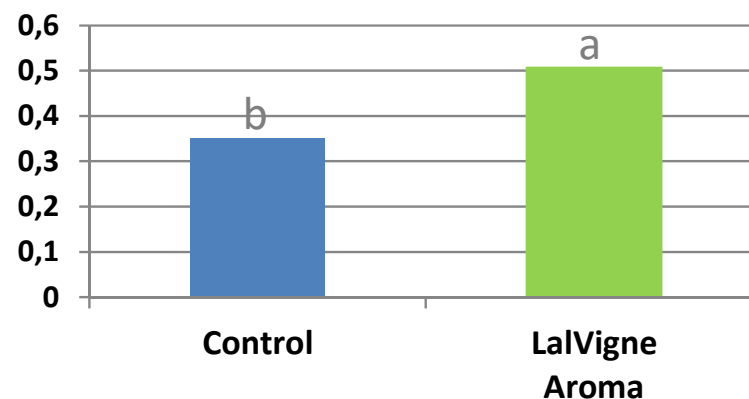


2014

% kožice Sauvignon Blanc



Masa kožice * 10(g)



PARTS OF BERRY					
	Berry weight	Number of seeds	Flesh weight	Seeds weight	Skin weight
Control	1,39	1,4	8,74	0,71	3,50
LA	1,49	1,4	8,47	0,74	5,06
sig	ns	ns	ns	ns	*

DEBLJA KOŽICA BOBICE

DISTRIBUCIJA AROME

	Skins	Flesh
Terpenes:	+++	+
Terpeneglycosides:	+++	
Norisoprenoids:	+++	
Thiols precursors	+++	++
Fatty acids	+++	++
Phenolic esters	+++	

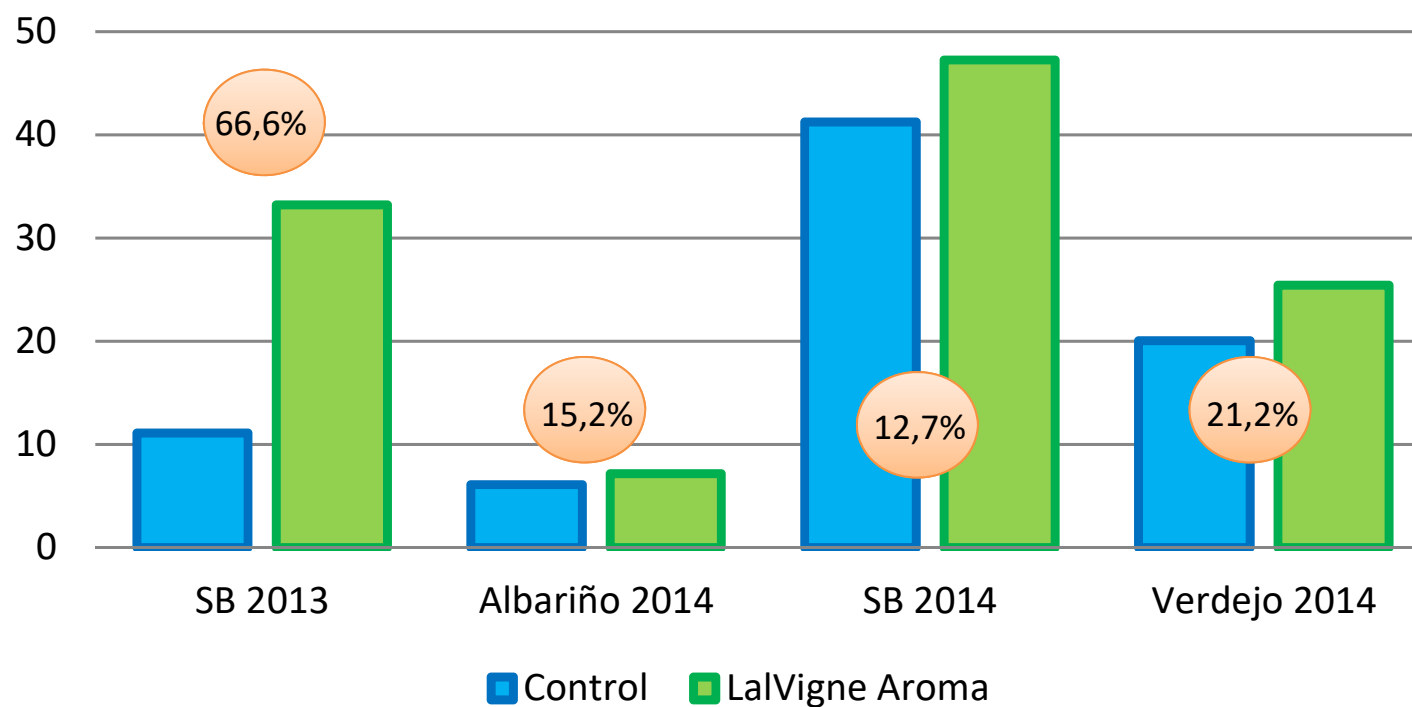


VIŠA KONCENTRACIJA GSH

Spain 2013/2014

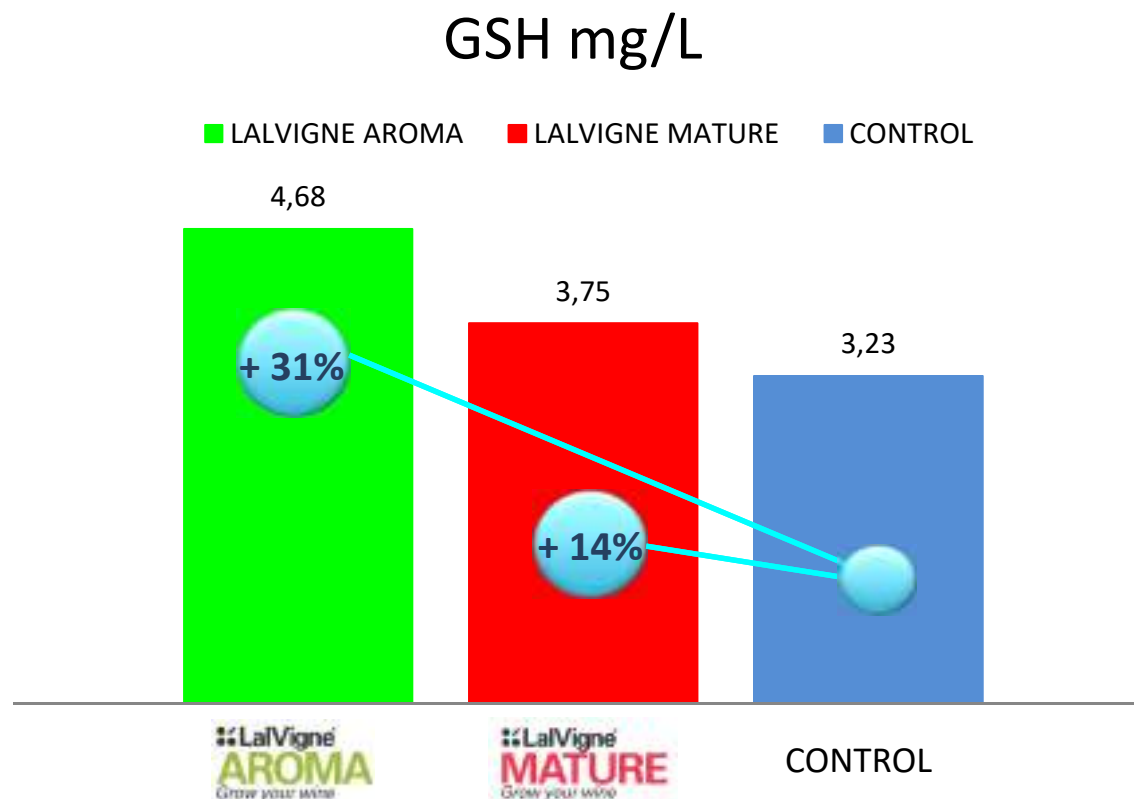


GSH mg/L



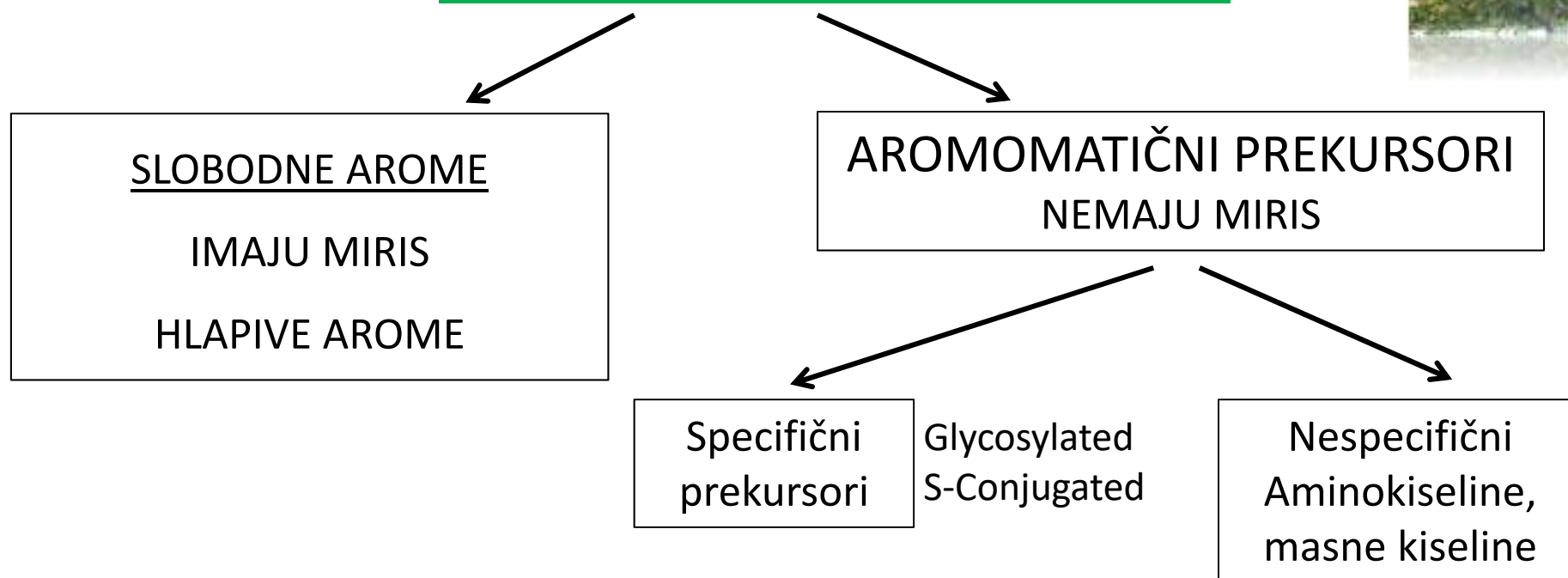
VIŠA KONCENTRACIJA GSH

Albariño 2014, Spain



VIŠI POTENCIJAL SORTNIH AROMA

AROME IZ GROŽĐA



Direktan doprinos sortnih aroma iz grožđa:

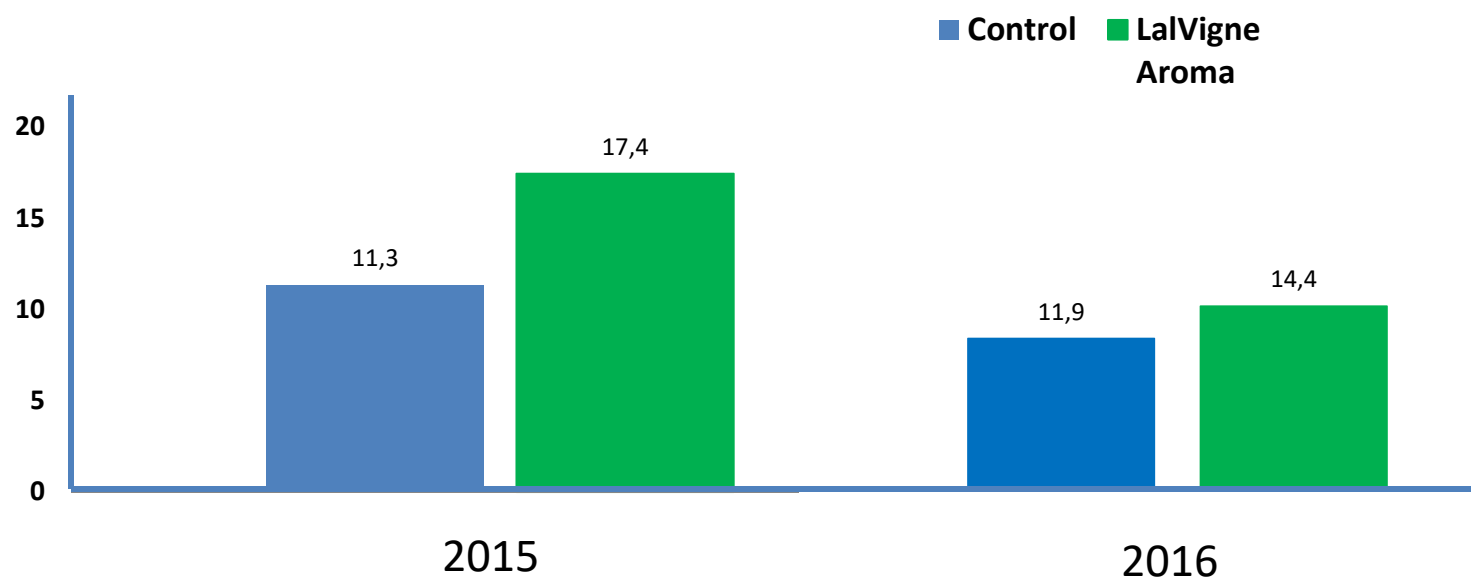
- Terpeni
- Norisoprenoidi
- Tioli
- Metoksipirazini

VIŠI POTENCIJAL SORTNIH AROMA

VARIETAL AROMA POTENTIAL INDEX



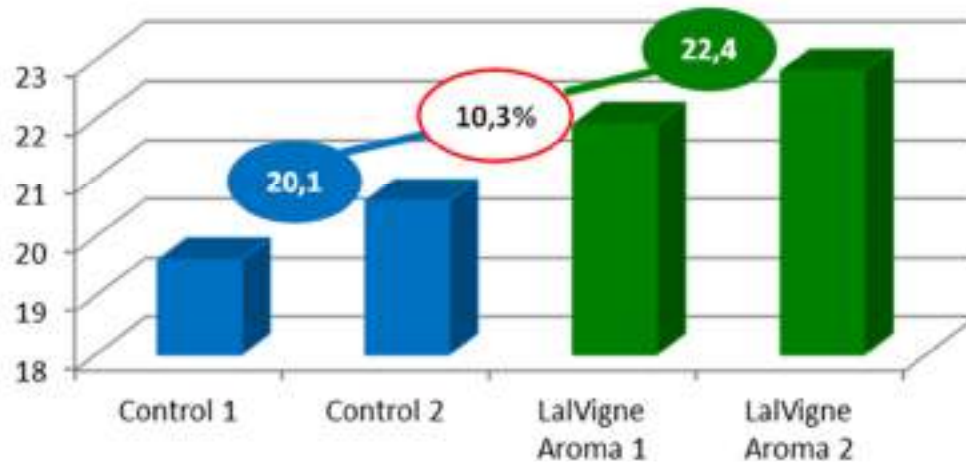
POLITÉCNICA



Verdejo

VIŠI POTENCIJAL SORTNIH AROMA

Varietal Aroma Potential Index

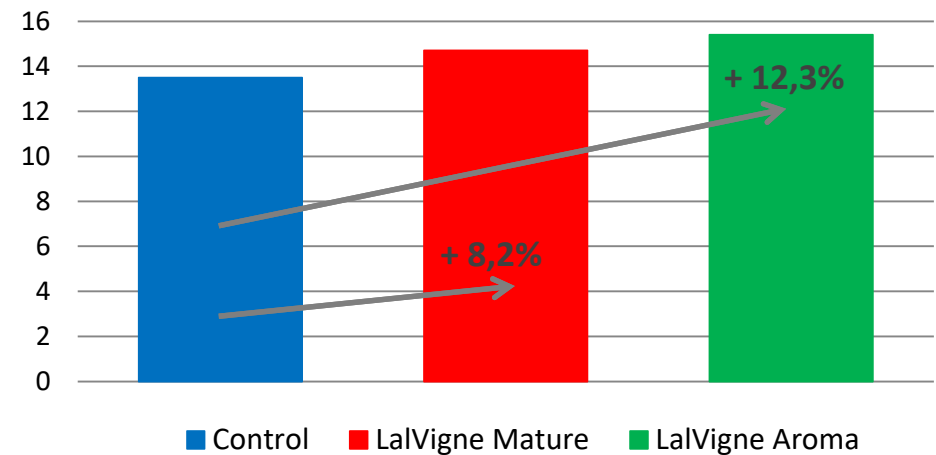


Verdejo 2014, Spain



Tempranillo 2014, Spain

Varietal Aroma Potential Index



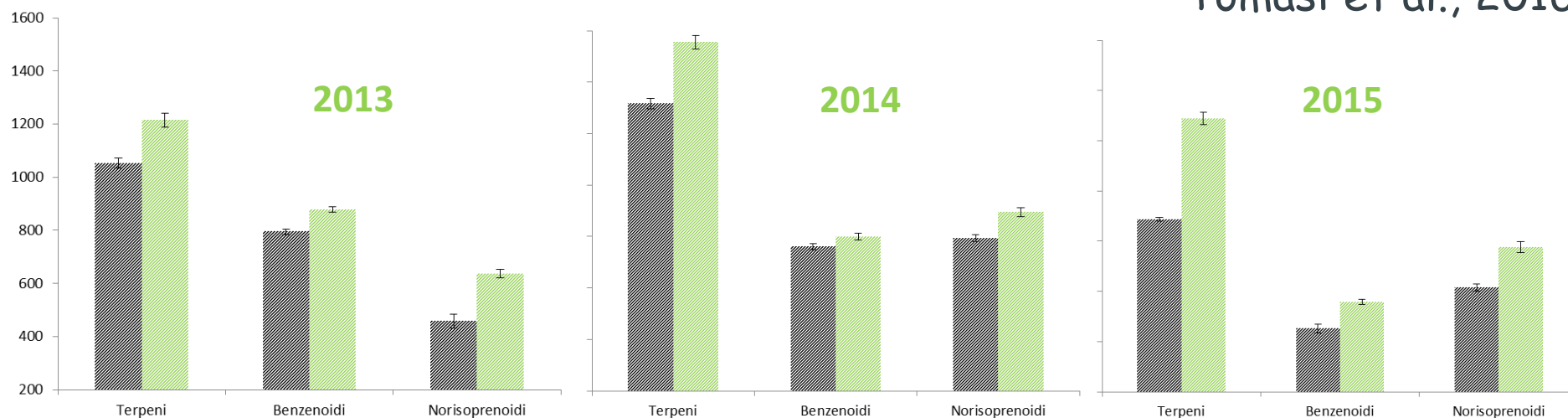
VIŠI POTENCIJAL SORTNIH AROMA

Glera (Prosecco DOC)



Analysis of glycosides aroma precursors in grapes

Tomasi et al., 2016



TERPENS:

Increase of geraniol and linalol (floreal and rose note), idrossigeraniolo, idrossilinaloli and geranic acids.

Cvjetne
arome, ruža

BENZENOID:

benzyl alcohol, beta-phenyl-ethanol and homovanillic acid which together give aromatic complexity (notes of rose, carnation, spicy).

Ruža, karanfil, začini

NORISOPRENOIDS:

the vomifoliolo and 3-oxo- α -ionol were increased with treatment (compounds related exotic fruit and ripe fruit note).

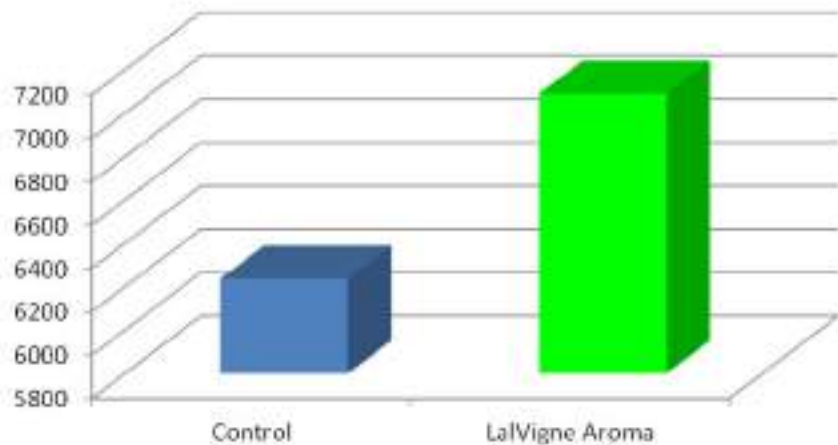
Egzotično voće, zrelo voće

VIŠI POTENCIJAL SORTNIH AROMA

ESTERI

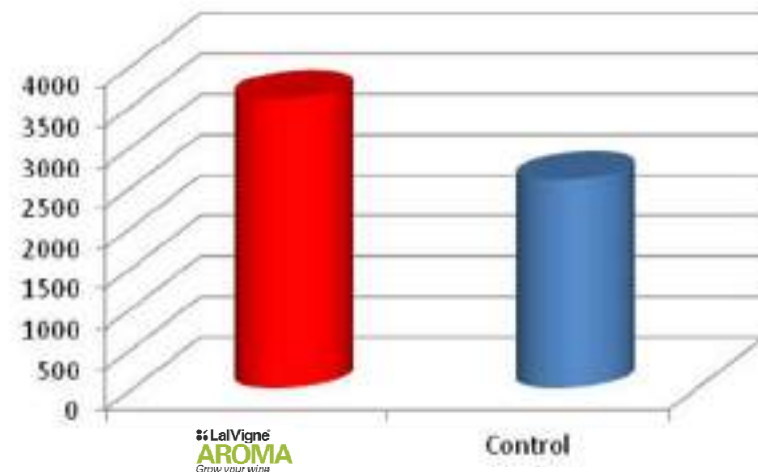
Airén
(Tomelloso)

Sum of esters



Sauvignon Blanc
(Barossa Valley)

Sum of esters



The Australian Wine
Research Institute

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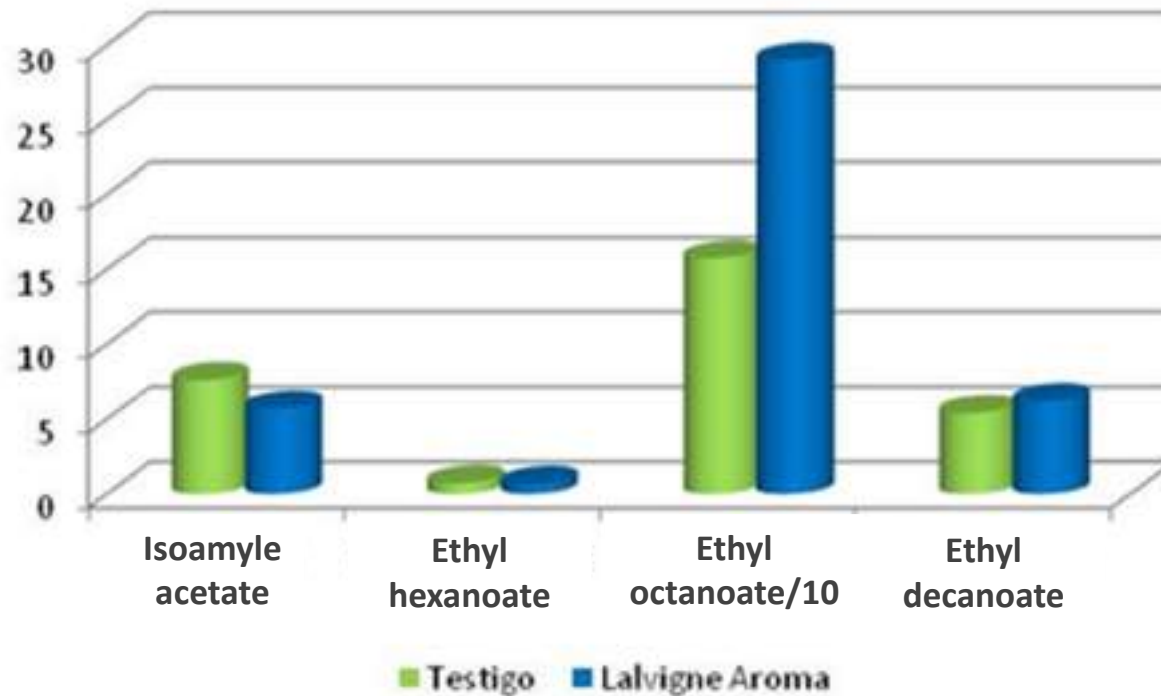
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VIŠI POTENCIJAL SORTNIH AROMA

Koncentracija različitih estera (mg/l) u Chardonnayu



2014



Isoamyle acetate:
banana

Ethyl octanoate:
Marelica, ananas,
kruška

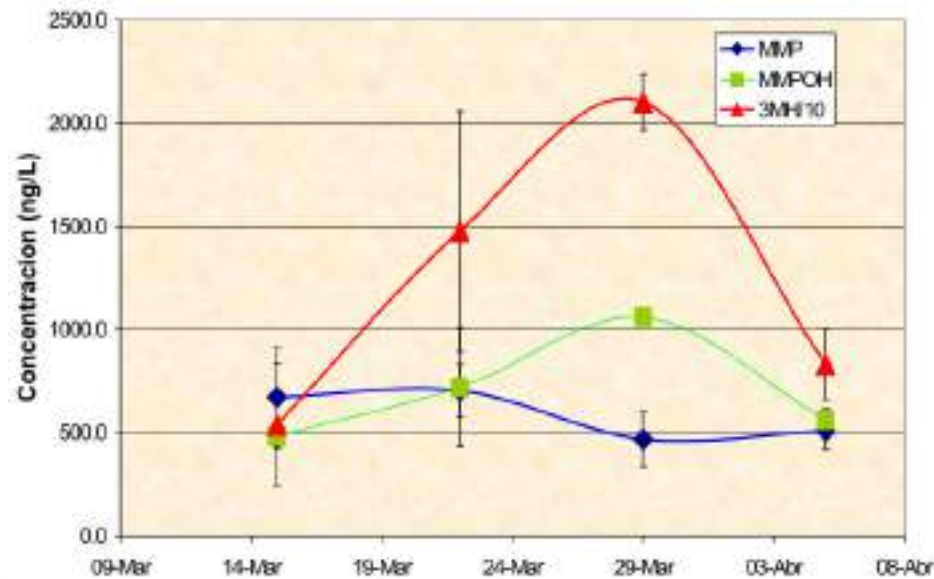
Ethyl decanoate:
cvjetne note

VIŠE 3MH I 3MHA

Osnovni tioli:

- 4MMP = 4-methyl-4-mercaptopentan-2-one; zeleni
- 3MH = 3-Mercaptohexan-1-ol; grejp, passion fruit
- A3MH = 3-mercaptohexyl acetate; passion fruit

U grožđu prisutni u obliku prekursora vezani za **cistein** i **glutation**



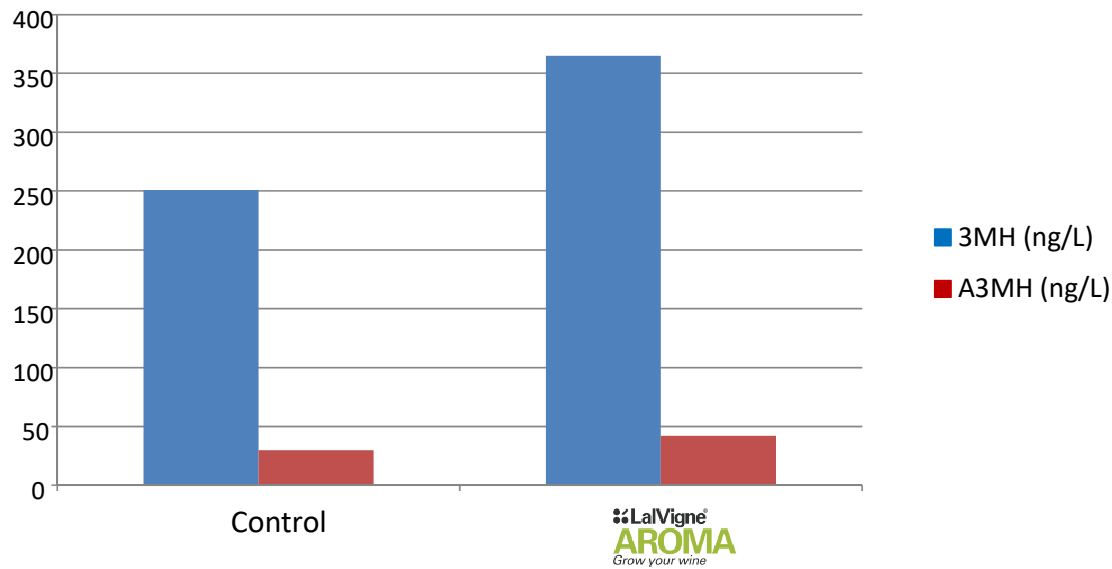
VIŠE 3MH I 3MHA



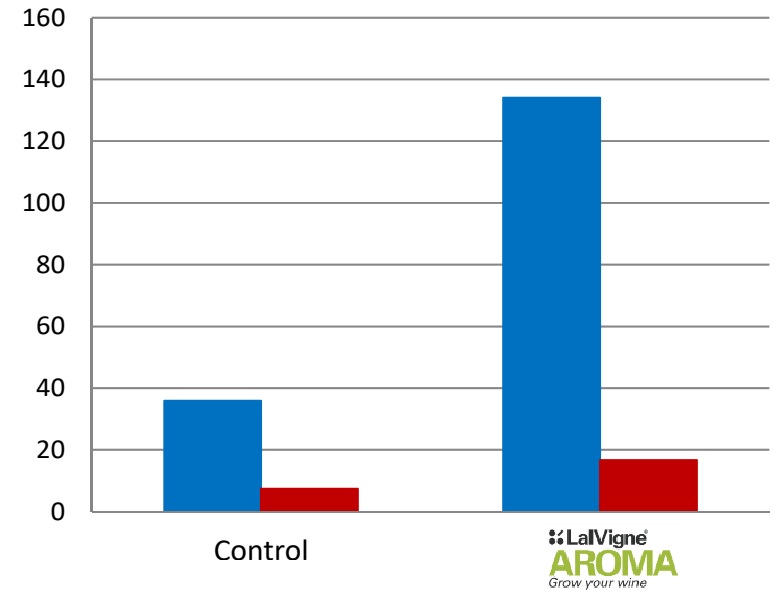
Analiza tiola



Grenache rosé 2014
Provence, France



Sauvignon Blanc 2014
Virginia, USA

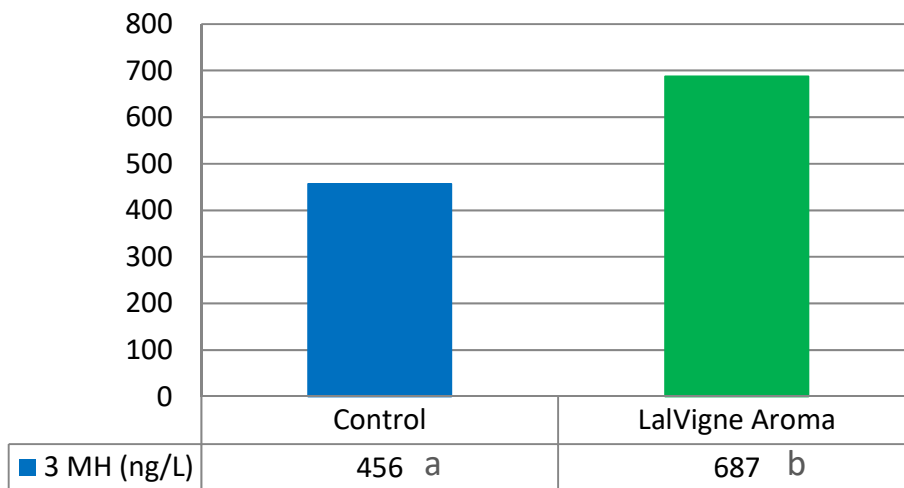


VIŠE 3MH I 3MHA

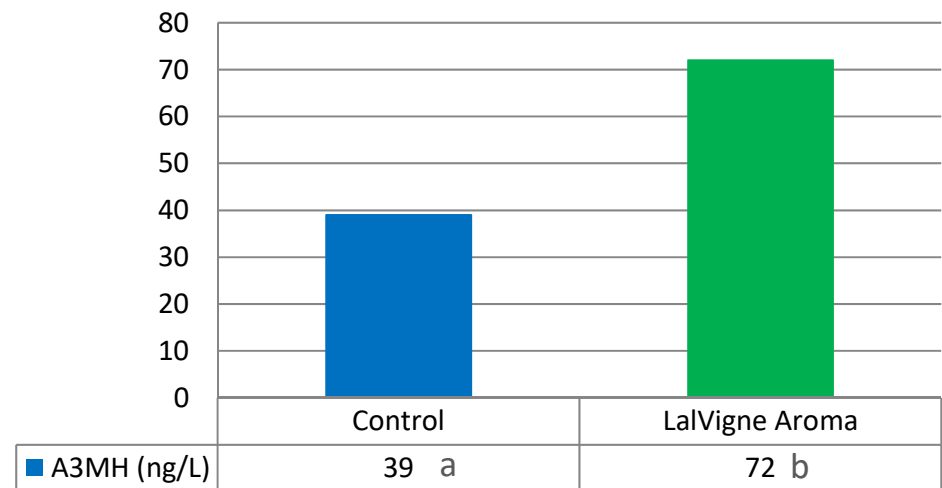
Grenache 2014, Rhone Valley, Francuska



3MH (ng/L)



A3MH (ng/L)

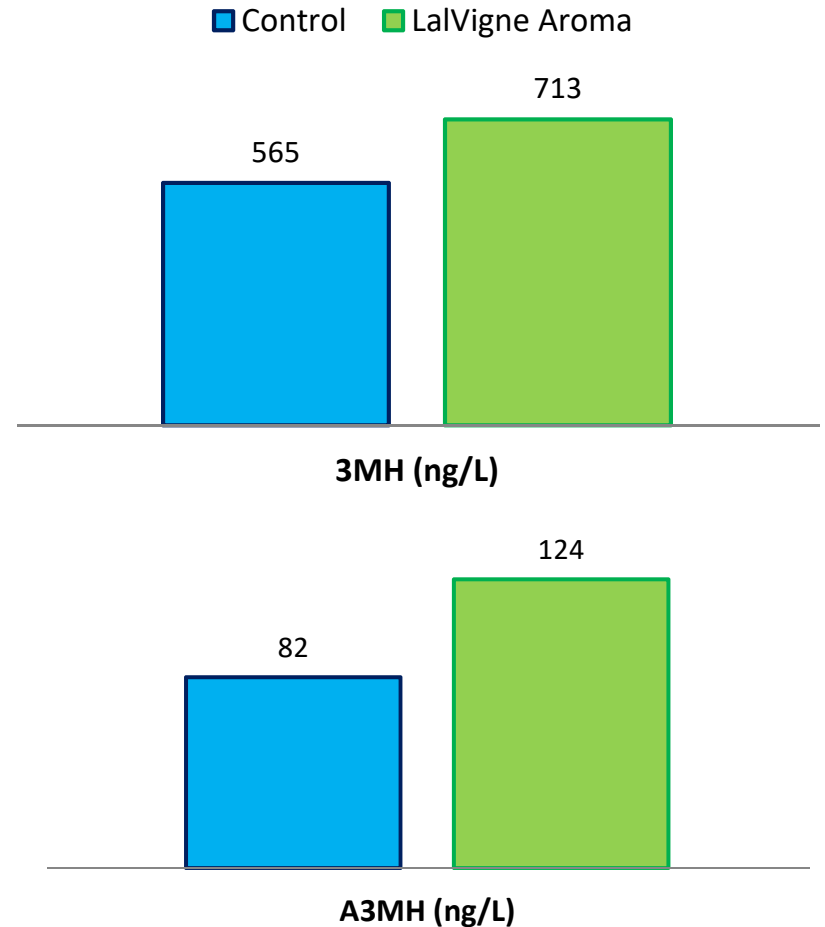


VIŠE 3MH I 3MHA

Chardonnay 2014, Spain



Sauvignon Blanc 2013, Australia



3MH

A3MH

SMANJENA VEGETATIVNA/AGRESIVNA AROMATIKA

SAUVIGNON BLANC 2013

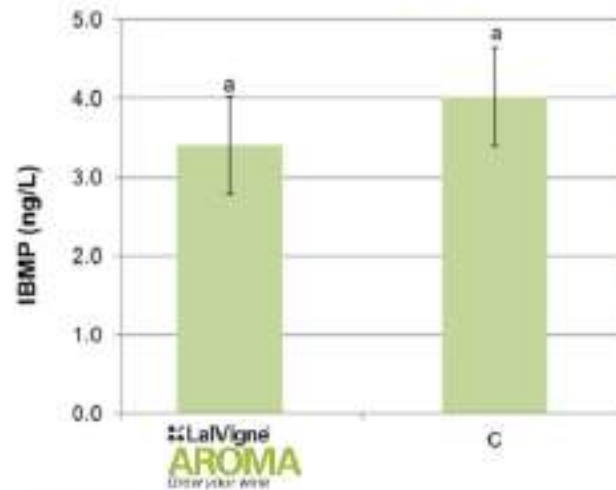
Department of Viticulture and Oenology, Stellenbosch University, South Africa



IBMP

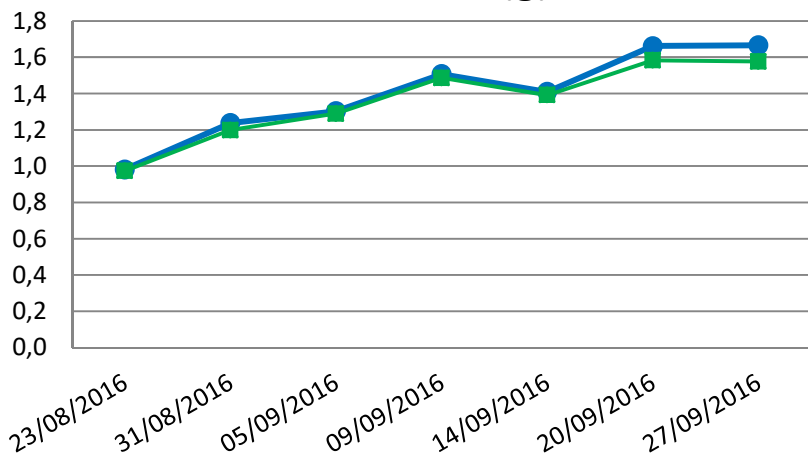


IBMP = izobutil metokspirazin



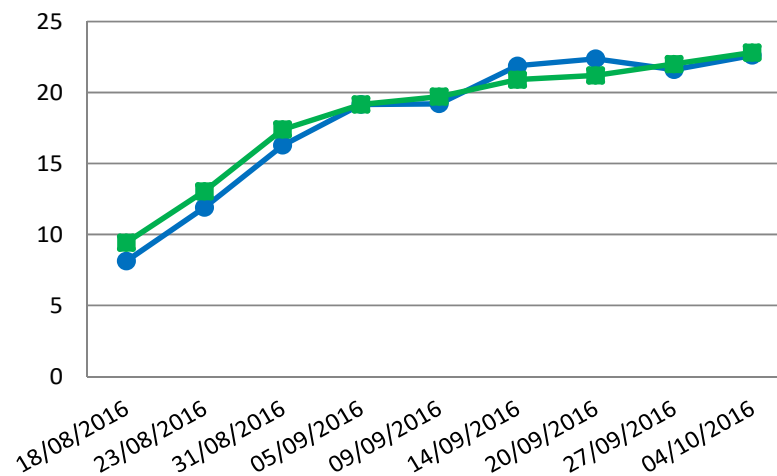
Nema utjecaj na masu bobica, Brix, pH ili Uk. kiseline

Masa bobice (g)

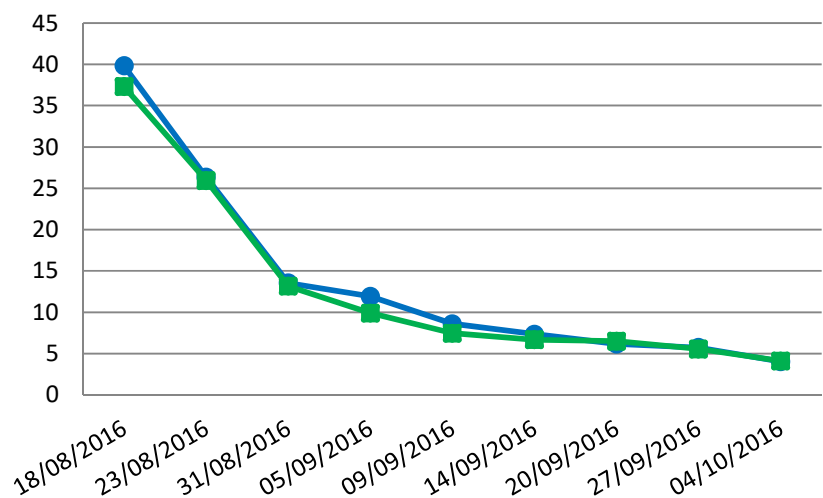


POLITÉCNICA

°Brix



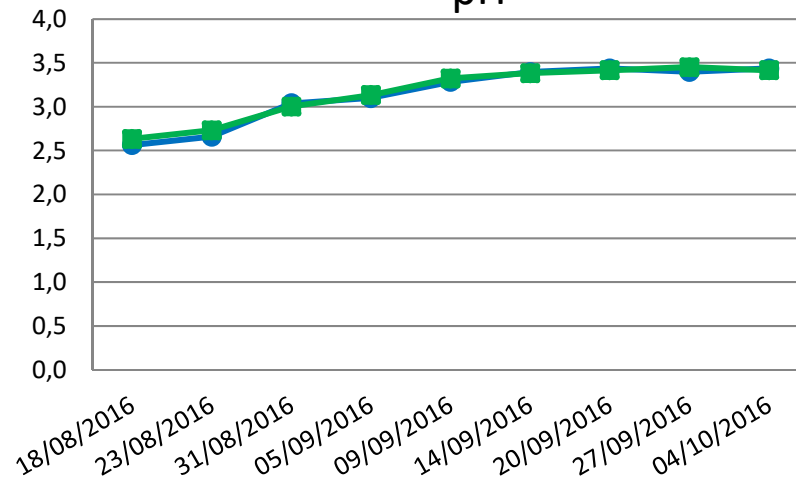
Ukupna kiselina g TH₂/L



Control

LaVigne
Aroma

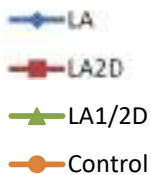
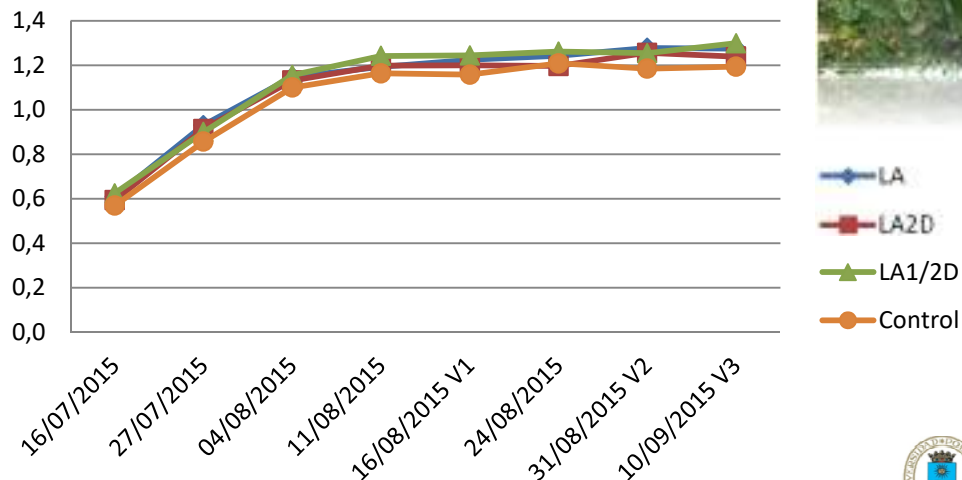
pH



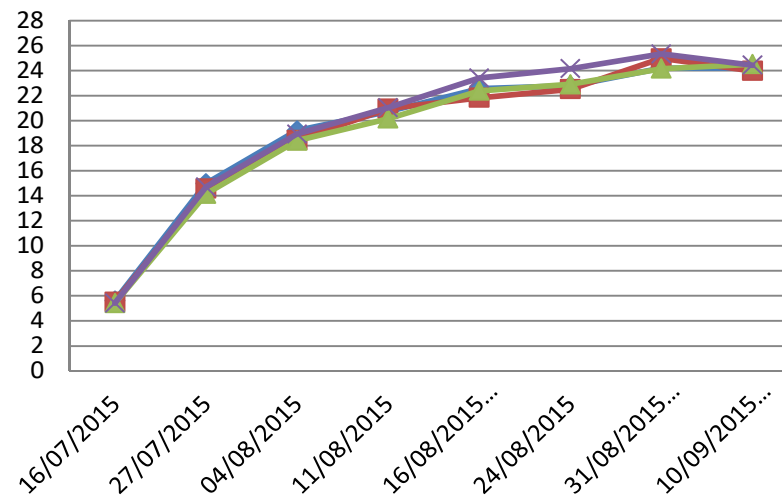
Verdejo 2016

Nema utjecaj na masu bobica, Brix, pH ili Uk. kiseline

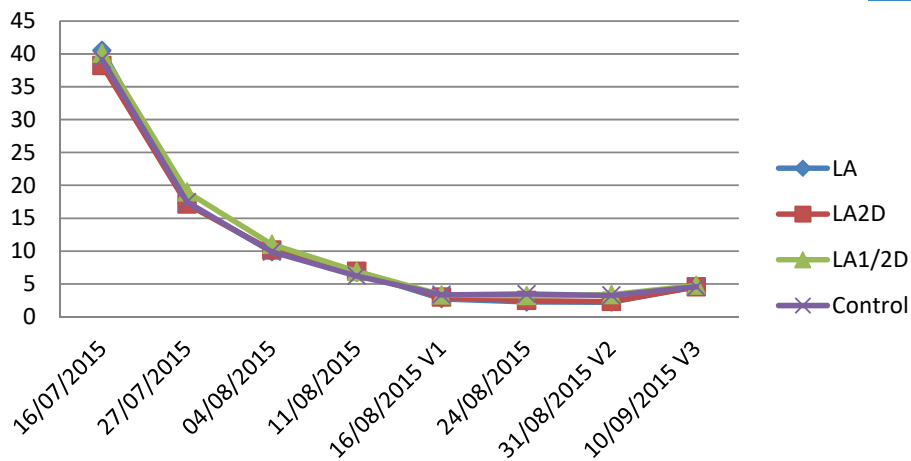
Berry weight (g)



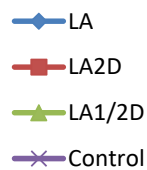
°Brix



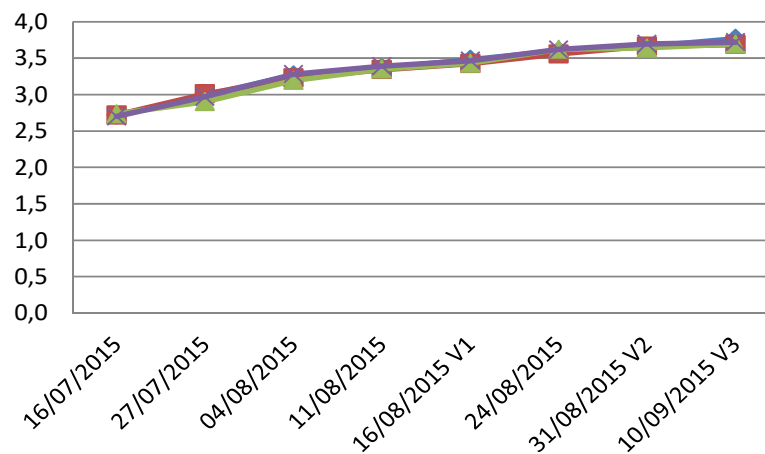
Total Acidity (g TH2/L)



POLITÉCNICA

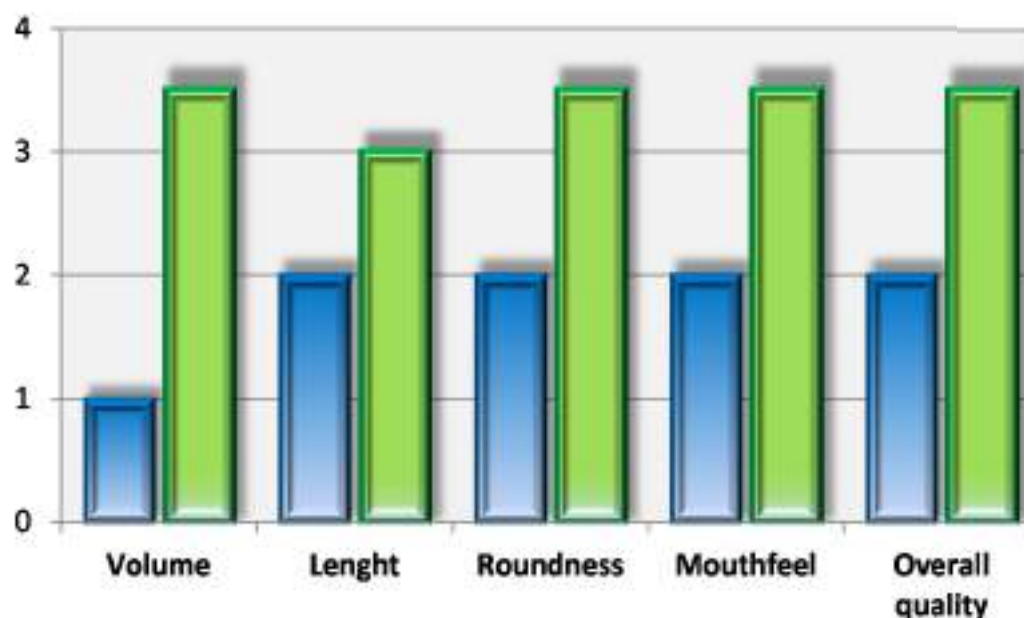
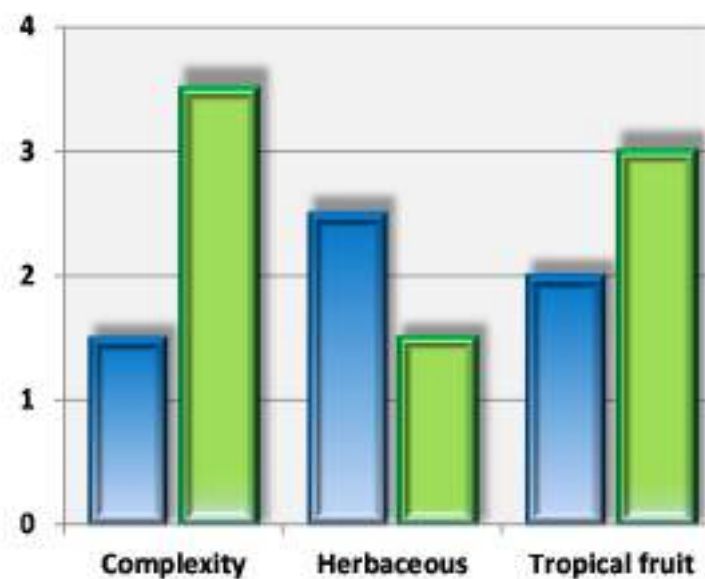


pH



Sauvignon Blanc 2015

BOLJA KVALITETA GROŽĐA/VINA



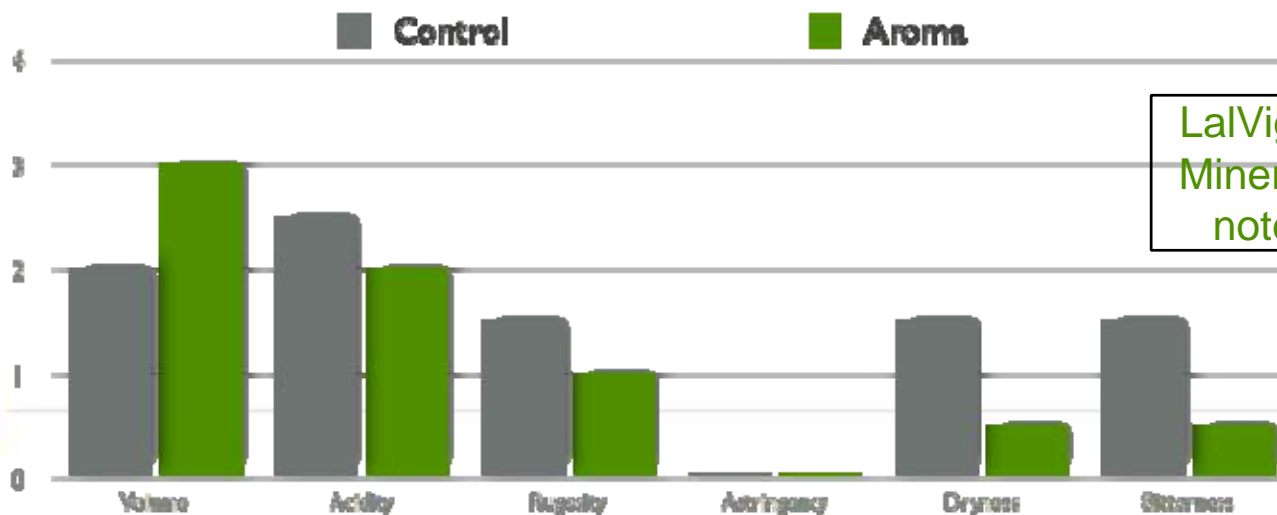
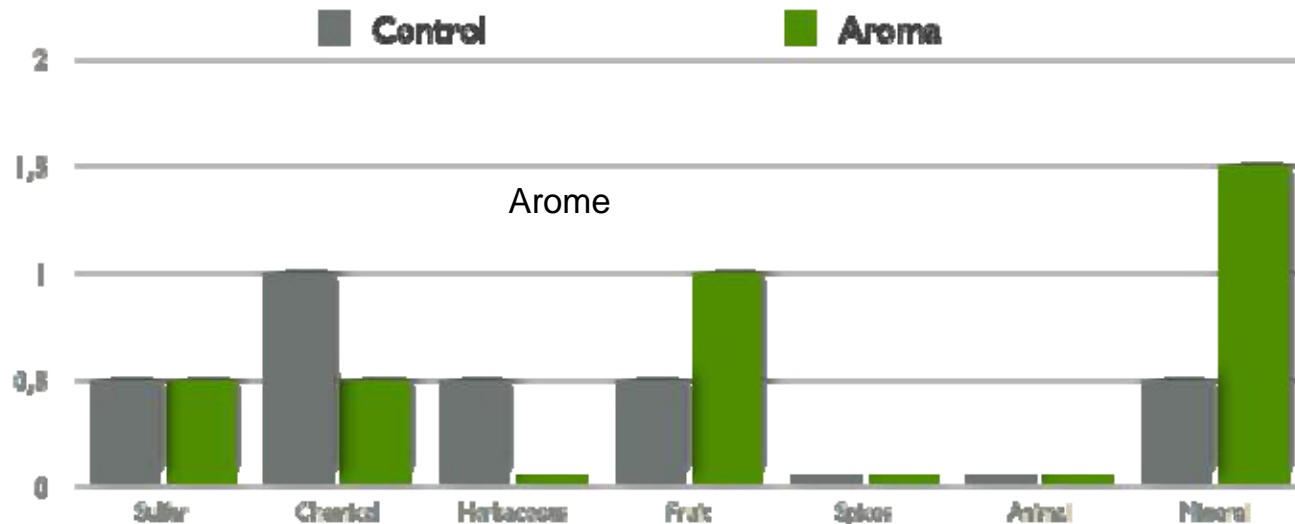
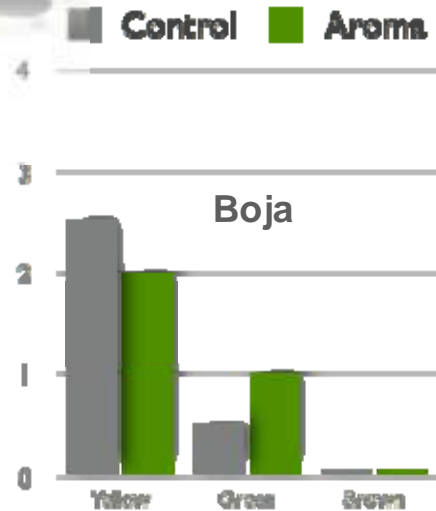
Control

LaVigne Aroma

BOLJA KVALITETA GROŽĐA/VINA



Albariño 2014, Spain
Ocjenjivanje 20.03.2015



LaVigne Aroma:
Mineralno voćne
note u okusu

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**Za vrhunsku kvalitetu
crnog grožđa i vina**




Maja Maslek





- Poboljšana fenolna zrelost
- Deblja kožica bobice i bolja ekstatibilnost antocijana
- Viša koncentracija ekstatibilnih antocijana
- Viša koncentracija tanina kožice
- Viši stupanj polimerizacije (mDP)
- Smanjene vegetativne/agresivne note
- Nema utjecaj na masu bobica, Brix, pH ili ukupne kiseline
- Bolja kvaliteta grožđa i vina

POBOLJŠANA FENOLNA ZRELOST

Merlot	2013			2014			2015				
		Control	significatività		Control	significatività		Control	Cluster thinning	significatività	
Yield/vine (kg)	3,2	3,1	n.s.	3,8	3,9	n.s.	3,2 a	3,2 a	2,4 b	**	-25%
Sugar (°Brix)	22,6	22,1	n.s.	19,7	19,8	n.s.	21,2 b	21,3 b	23,2 a	**	Viši sadržaj šećera
pH	3,37	3,34	n.s.	3,13	3,14	n.s.	3,38 b	3,43 b	3,53 a	*	Niža kiselina
Total Acidity (g/L)	5,3	5,5	n.s.	8,3	8,5	n.s.	6,5 a	6,6 a	5,37 b	*	
Tartaric acid (g/L)	-	-		6,2	6,5	n.s.	5,7 a	5,7 a	5,2 b	*	
Malic acid (g/L)	-	-		3,9	3,9	n.s.	2,1 a	2,1 a	1,33 b	**	
Flavonoids (mg/kg grape)	1.925 a	1.762 b	**	763 a	721 b	*	1.964 a	1731 b	1.940 a	**	Slične vrijednosti flavonoida i antocijana
Extractable Anthocyanin (mg/kg grape)	397 a	329 b	*	215	225	n.s.	294 a	236 b	317 a	*	

Skidanje grožđa

Manji prinos

Viši sadržaj šećera

Niža kiselina

Slične vrijednosti flavonoida i antocijana

Exocarp

sugars: 25%
organic acids: 35%
aromas: >80%
phenolics: 20-30%
K⁺: 30-40%

Mesocarp

sugars: 50%
organic acids: 35%
aromas: <20%
phenolics: 10-20%
K⁺: 20-30%

Endocarp/seeds

sugars: 25%
organic acids: 30%
phenolics: 60%
K⁺: 20-30%

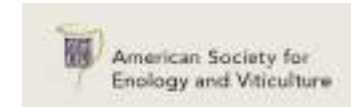
Flavan-3-oli

~mDP (mean degree of polymerisation)

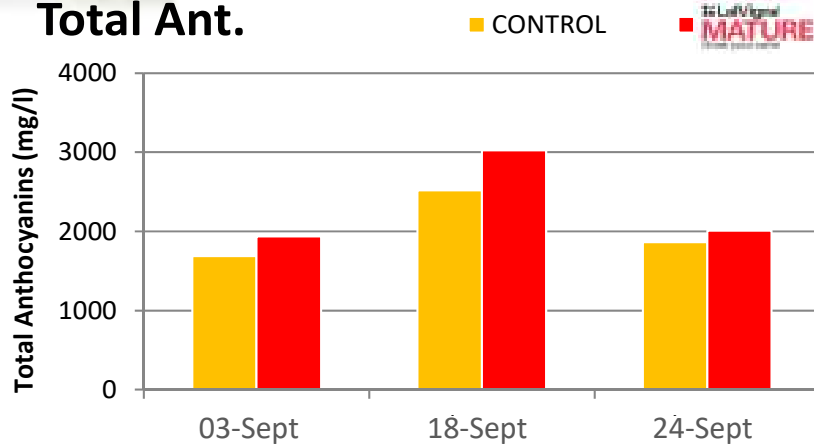
- Sjemenka – kraći lanac ~ veća astrigencija i gorčina (1-12mDP)
- Kožica – duži lanac ~ niža astrigencija i gorčina (20-80 mDP)



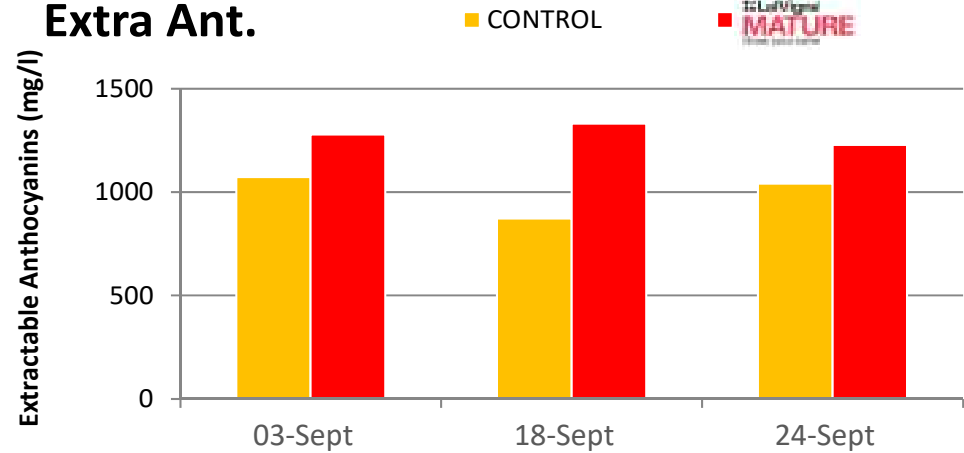
Syrah 2013



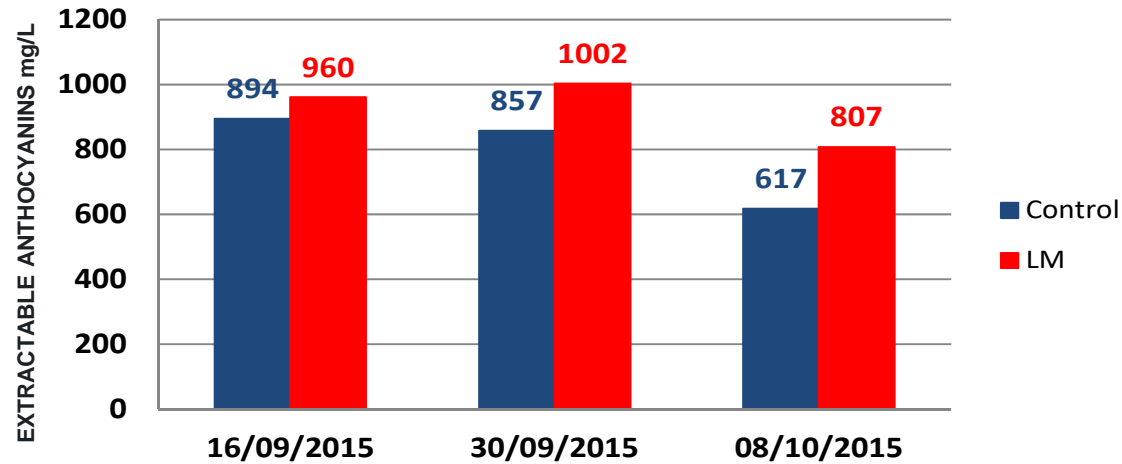
Total Ant.



Extra Ant.



Cabernet
Sauvignon
SPAIN, 2015



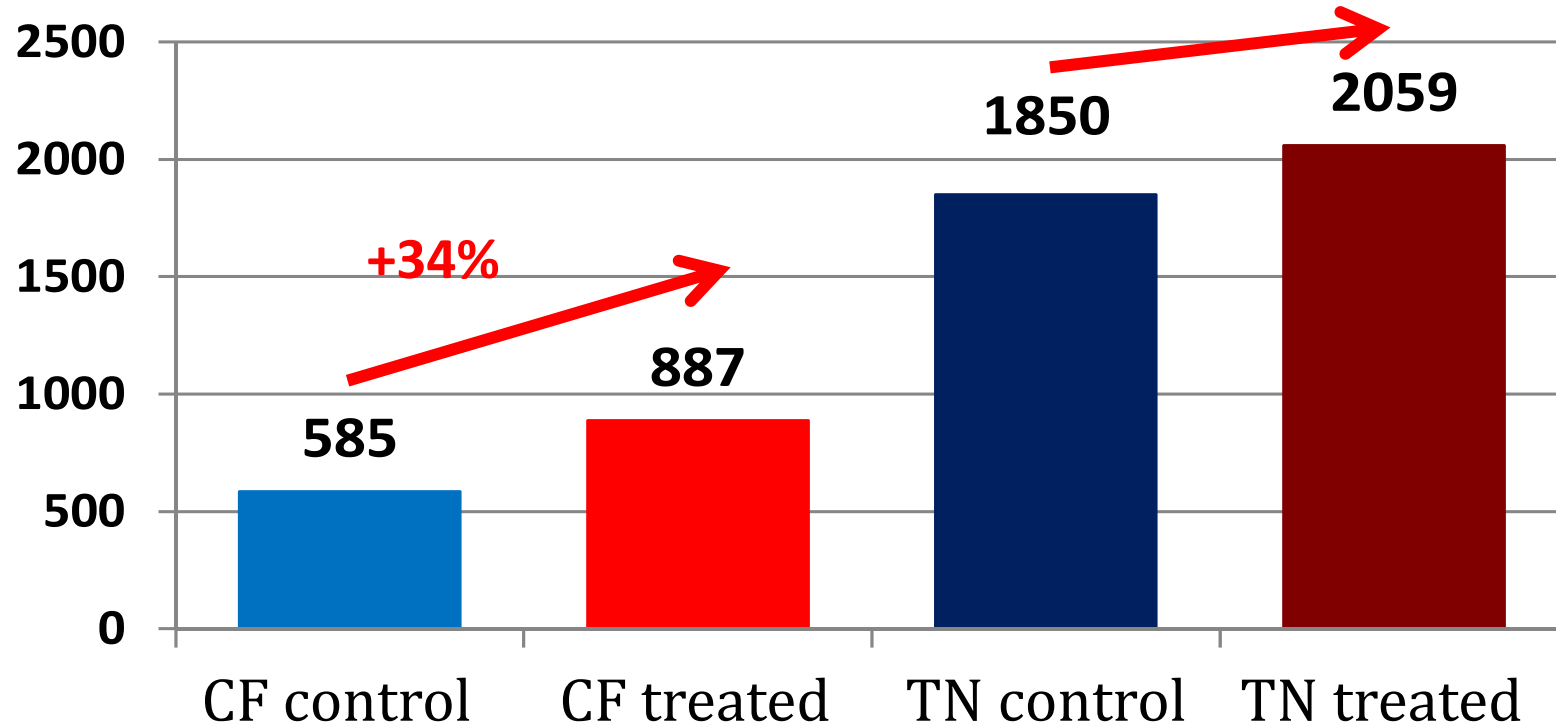
Uruguay, 2015



ESCUELA DE VITIVINICULTURA

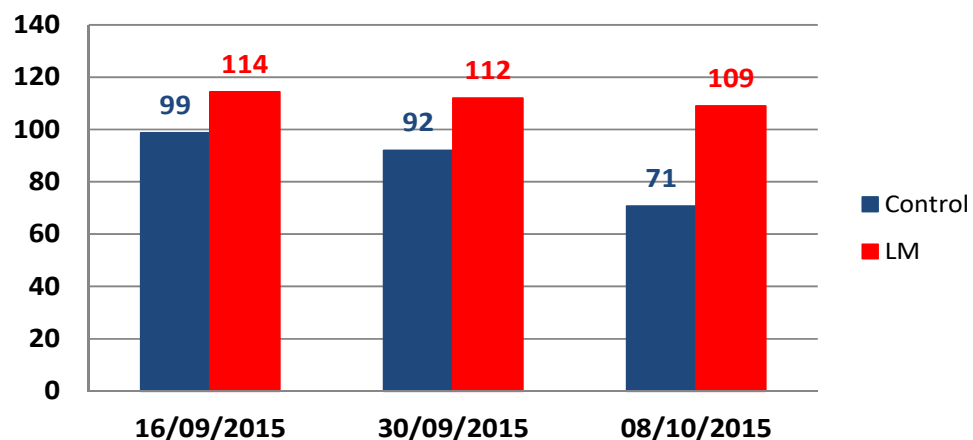


Anthocyanins mg/L



Viša koncentracija tanina kožice

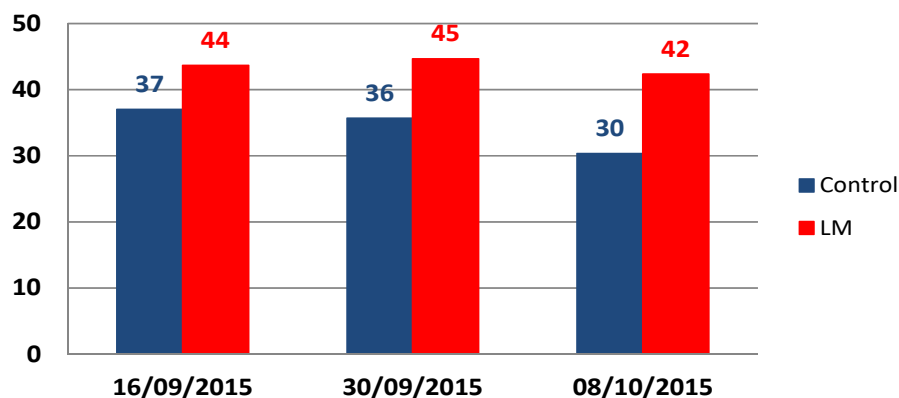
TANNIN POTENTIAL INDEX



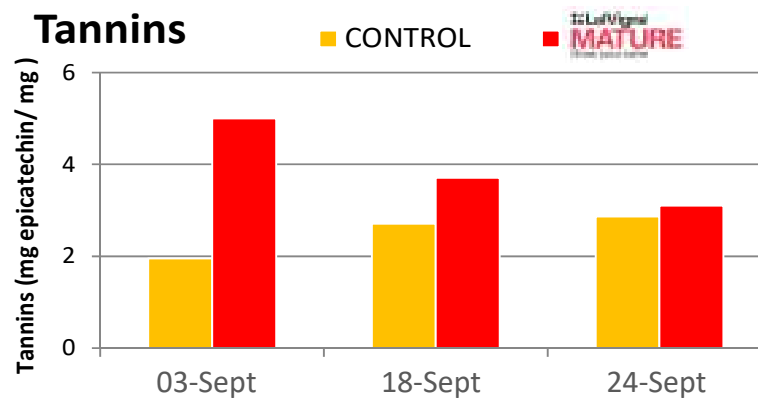
Cabernet Sauvignon
SPAIN, 2015



TANNIN MATURITY INDEX

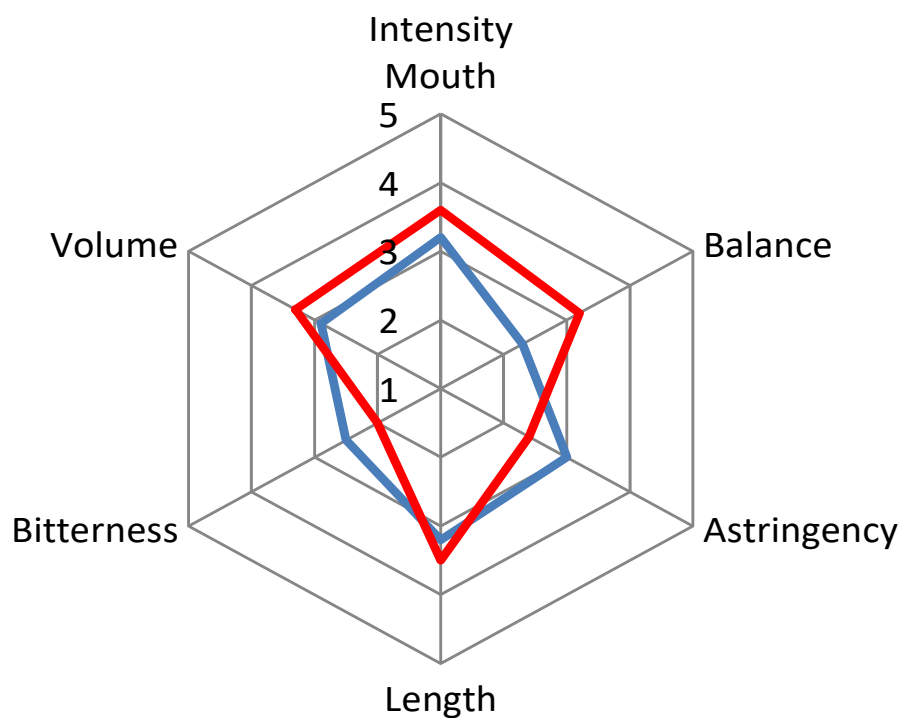


Syrah 2013



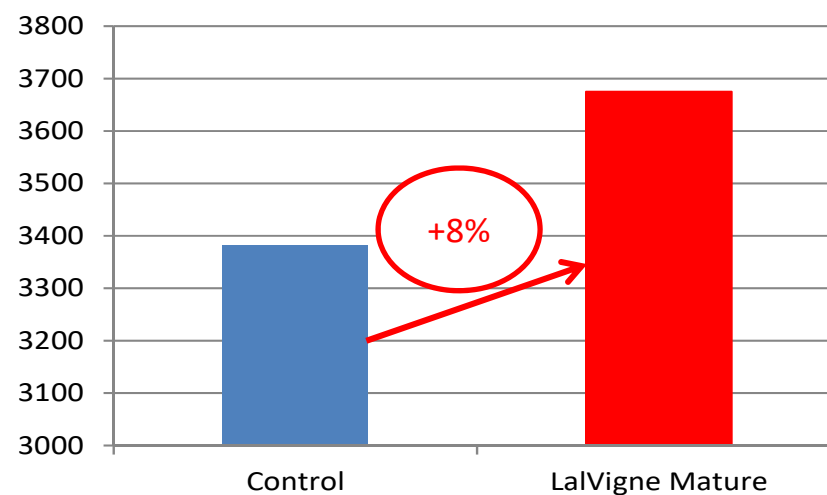
Viša koncentracija tanina kože

MONASTRELL / MOURVEDRE, SPAIN, 2015



— Control — LaVigne Mature

Total Tannins (mg/L)



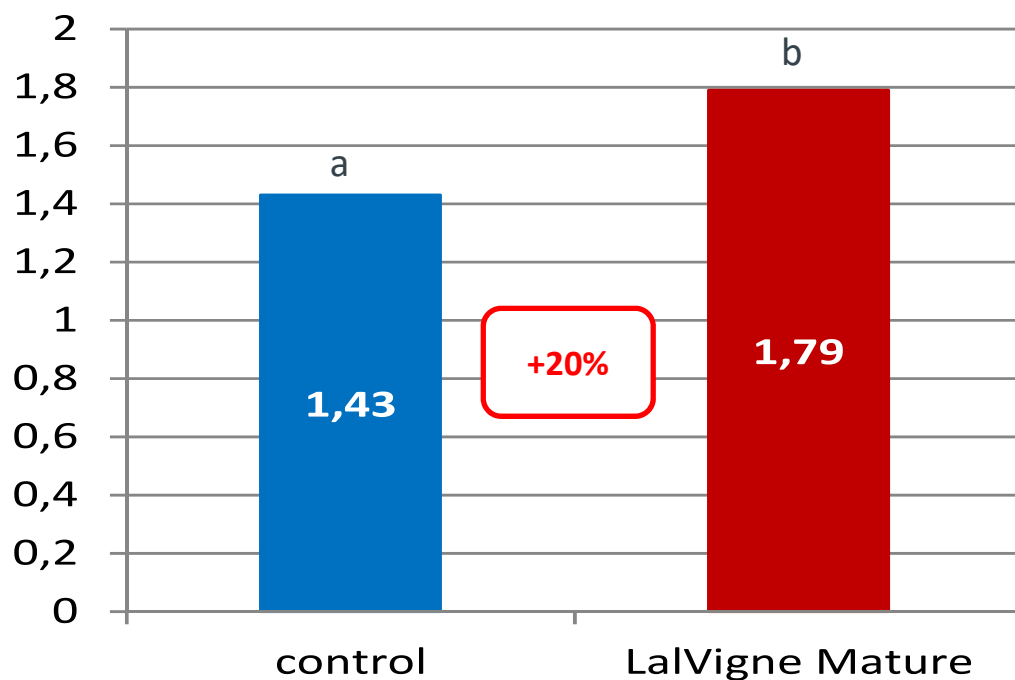
Viša koncentracija tanina kožice

Portu et al. 2016 Rioja (Spain)

TEMPRANILLO

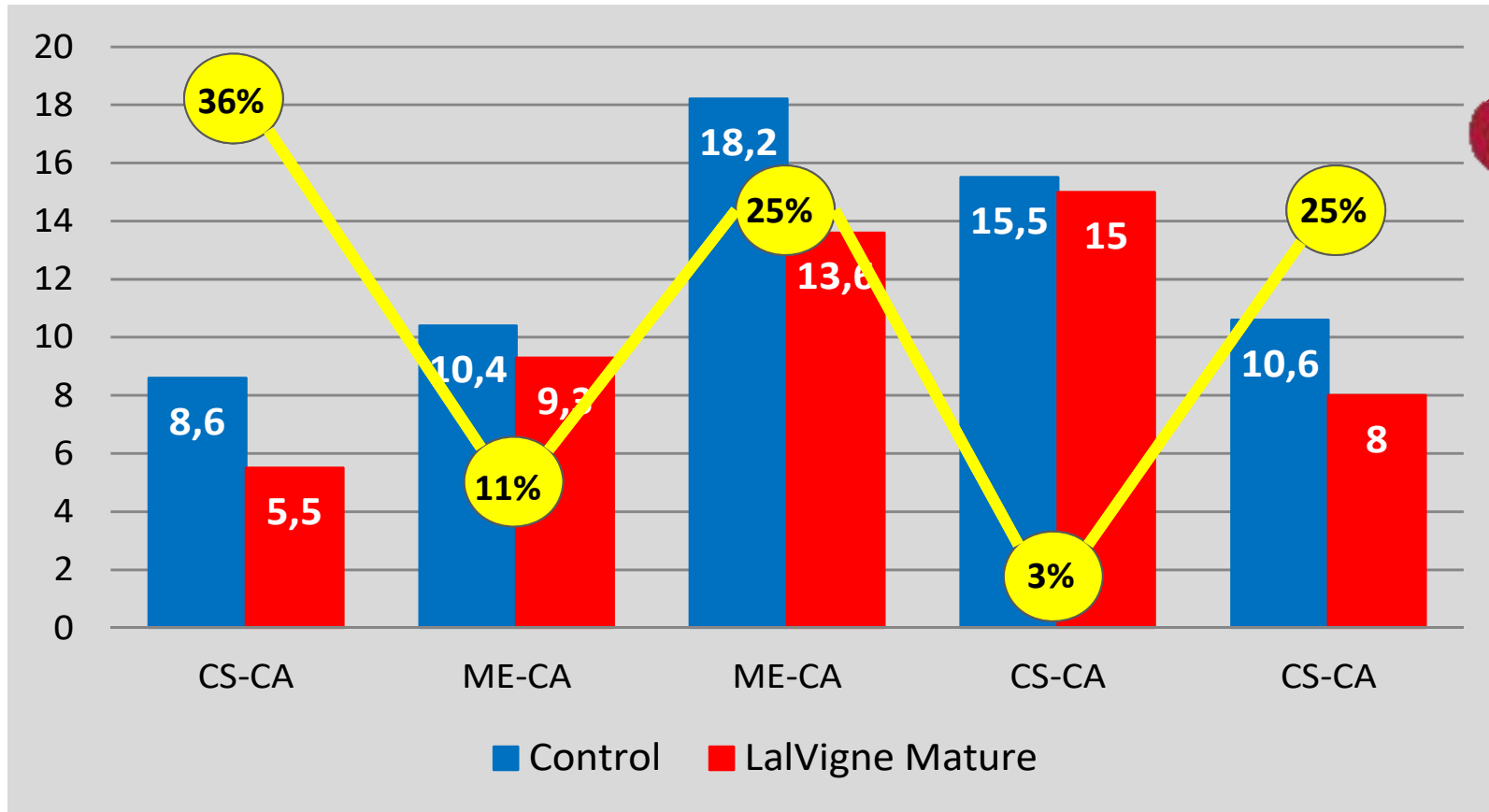


polymerization index



Smanjenje vegetativnog/agresivnog karaktera

USA, 2014 Utjecaj na IBMP (izobutil metoksipirazin)



Smanjenje vegetativnog/agresivnog karaktera



Pirazini (ng/L)

■ Control ■ LalVigne Mature

4,4

3,6

- 18,2%

IBMP + IPMP

Cabernet Sauvignon 2016, Spain

Prosječan urod = 7000 kg/ha

IBMP

■ Control BG3 ■ LalVigne Mature BG4

22,7

18,5

- 18,5%

Merlot 2014, Portugal

Viši urod = 15000 kg/ha

KVALITETA VINA



NISKA  VISOKA

ZELENE AROME

MANE

AGRESIVNOST

ZELENI TANINI

LOŠ BALANS

ALKOHOL/KISELINA



▲ PREKURSORI AROME

▲ SORTNI PREKURSORI

▲ BOJA

— BALANS

ALKOHOL/KISEINA

▲ ČISTOĆA

▲ MEKANI TANINI

▲ DUGOVJEČNOST





Hvala na pažnji

mmaslek@lallemand.com



LALLEMAND