



VIGNERONS BIO
NOUVELLE AQUITAINE

OENO BIO

With the financial support of

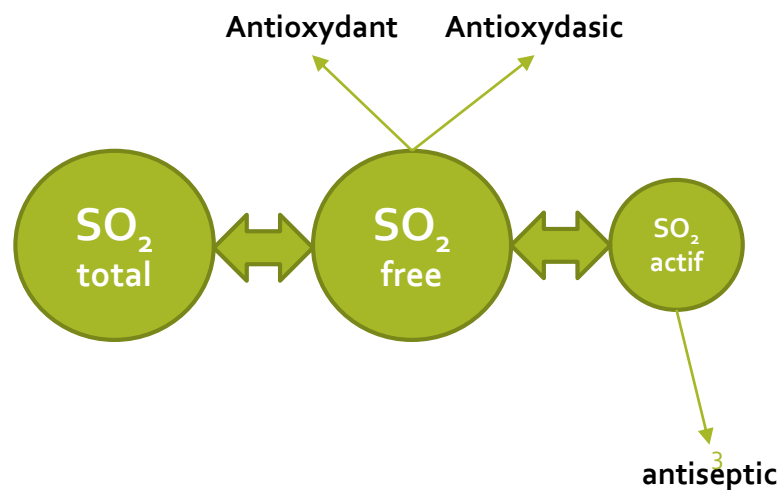


VINS SANS SO2



Role of sulphites in wine

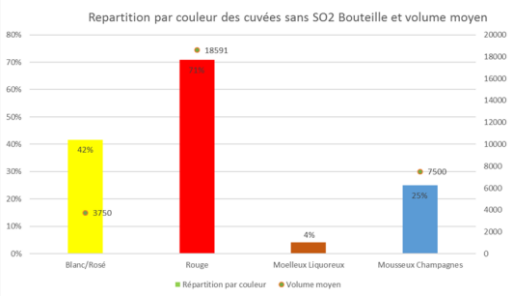
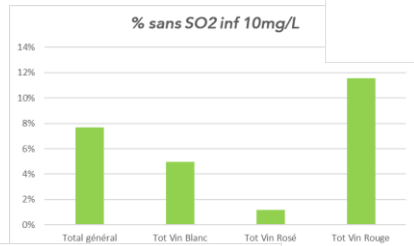
- Broad spectrum of action
 - Antioxydant
 - Antioxydasic
 - Microbiological stabilization
- Only a small part of the total SO₂ is active
- MCO Recommendations: 0.7 mg/kg body weight



Contexte



Font: ITAB - Study of SO2 levels of organic wines in France (2015)



Font: ITAB - Survey of Wine Practices 2017

SO2 inputs mainly used by Organic Winemakers



A strong desire to reduce and make wine Without Sulfite added

Mention "Wine without added sulphites"

"It may appear on the label of any wine, as long as the operator can prove that no sulphites have been used in the manufacture of the product. However, if the levels of sulphites are 10mg/l (SO2T), the word "contains sulphites" is mandatory."

Font: OIV

Development of new tools that need evaluate

Bio-protection



The aim is to occupy the environment (must) quickly for competitors and avoid the development of undesirable organisms

- More and more information about non-Saccharomyces yeasts and its benefits
- At the level of Bio-protection there is little scientific information (commercial info)

	Norme OCM Viticole	Vin Bio Europe
vins rouges < 2 g/L sucre	150	100
vins rouges entre 2g/L et 5g/L de sucre	150	120
vins rouges > 5g/L de sucre	200	170
vins blancs secs et rosés < 2 g/L	200	150
vins blancs et rosés entre 2g/L et 5g/L de sucre	200	170
vins blancs et rosés > 5g/L de sucre	250	220
vins mousseux : créchants < 2 et à plus de 5g/L de sucre	150	120
vins mousseux Qualité : < 2 et plus de 5g/L sucre	185	155
vins mousseux autres : cuve close... < 2 et à plus de 5g/L	235	205
vins moelleux/liqueux peu botrytisés ou passerillés	300	270
vins liquoreux fort botrytis ou passerillage	400	370
vins blancs IGP de TAVT > 15% vol et > 45 g/L sucre	300	270
vins de liqueurs, moins de 2 g/L sucre	150	100
vins de liqueurs, plus de 2 g/L sucre	200	170
white and rosé wines - 5g/L of sugar sparkling wines: creamers 2 and more than 5g/L of sugar Sparkling Wines Quality: 2 and over 5g/L sugar other sparkling wines: closed vat... 2 and at more than 5g/L soft/sweet wines with little botrytisés or pastries very botrytis or pass-through wines TAVT IGP white wines - 15% flight and 45 g/L sugar liqueur wines, less than 2 g/L sugar liqueur wines, more than 2 g/L sugar natural sweet wines vins doux naturels	200	170

Protection
on
oxidation

Different
sensory profile:
terpene more
need O₂ than
thiols

White
wine

Managem
ent of
malolactic
fermentat
ion

Microbiological stability

*Levurienne: Non-
saccharomyces of
fermentation start*

Brettanomyces

Bacterial: Acetic Bacteria

RED
Wine

Protection
from
l'oxidation

On Cellars

- Many properties are starting to make fermentations without SO₂
- Most wines without SO₂ are made on red wines
- Difficulty for white wines especially on oxidation issues with sauvignon
- Often with very early use of commercial Yeast
Some with "Pied de Cuve" or with preparations containing non-saccharomyces
- Early bottling and fast rotation in majority
- Some winemakers make wines without SO₂ with ageing
- Tests and experiments are carried out on white wines

PROJECT BIOPROTECTION

PROJECT BIOPROTECTION

- Evaluation of the impact and effectiveness of BioProtection in order to vinify wines without SO₂ in the pre-fermentary phase.
 - Impact on the occupation of microbiological space
 - Impact on the oxidation of musts and wines
 - Impact on the FA
 - Impact on lactic bacteria populations and FMLs



Organisation du projet

Institutions



Expertise scientifique
Transfert scientifique
Qualité des vins

Expertise Terrain
Œnologie bio

Partie analyse
Transfert scientifique

Organisation du projet

Vinifications sur terrain

Différentes Cépages :
Sauvignon/Sauvignon
Blanc/Merlots/Cabernet Franc

Modalité
Sans SO₂

Modalité avec
SO₂

Bioprotection
vendange

Bioprotection
Mout

Différentes
souches de non
saccharomyces

Ensemencement
précoce en
saccharomyces

Levurage

Microvinification ISVV

Vin blanc

Sauvignon Blanc

2x {
-Sulfitage 5gr/HL
-5gr/HL Primaflora VB avant
pressurage
-Zéro ajout
-5gr/HL Zymaflore X5 avant
pressurage

mini cuve de 4,5L

Zymaflore X5 20gr/HL

Château La Conseillante

Vin rouge

Merlot

2
x {
-Sulfitage 3 gr/HL
-5gr/HL Primaflora VB sur
mout
-Zéro ajout
-LSA

8 Barriques 400 hl

Excellence XR 15 gr/HL

Château Carbonnieux

Vin blanc

Sauvignon Blanc

2
x {
-Sulfitage 5gr/HL
-5gr/HL Primaflora VB
avant pressurage
-Zéro ajout
-5gr/HL Zymaflore X5
avant pressurage

8 Barriques (250L)

Zymaflore X5 20 gr/HL

Château du Bourdieu

Vin blanc

Sauv. Gris

1
x {
-Sulfitage 5gr/HL
-5gr/HL Primaflora
VB sur moût

2 Cuves ciment 60
HL

Zymaf. X5 20gr/HL

Vin rouge

Merlot

1
x {
-Sulfitage 3gr/HL
-5gr/HL Primaflora
VR sur moût

2 Cuves inox 110 HL

Fermol Rouge à 15
gr/HL

Biocontrol project: conclusion



- Good behavior of all modalities at the level:
 - - fermentary kinetics - chemical analyses
 - - implantation controls - sensory analysis
- ➔ with a healthy harvest, the 3 alternatives to the contribution of SO₂ possible (bioprotection, early input of yeast, without SO₂)
- ⚠ On white wine: risk of oxidation of thiols with loss of aromatic potential, not compensated by bioprotection on this project

Note on bioprotection:

Poor implantation of LSA with levurage in red because competition

Significant effect on acetic bacteria

No significant difference in tasting with other modalities



PROJET RESPECT





VIGNERONS BIO
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RESPECT goals and Bordeaux's SO₂-free wines



Expérimentations plateformes et terrains

Etat des lieux des vins sans sulfites
réussis à Bordeaux (au niveau
sensoriel et composition chim)

Sensory effects of SO₂

Impact of low-level or zero-sulphites
itineraries on microbial community,
chemical and sensory composition
of musts and wines

Development of bioprotective
microbiological tools as an
alternative to SO₂

Research on the mode of action and
effectiveness of bioprotective yeasts

Evaluation of the use of phages for
the control of unwanted bacteria
during wine making

Bx SO₂-free wines

RESPECT



ON CELLARS

On Cellars

Key points

- A healthy harvest
- The management of the fermentation temperature
- Fast and frank departures in fermentation and good fermentation
- Good oxygenation of fermenting must
- Don't start doing SO₂-free and native yeasts directly
- The control of dissolved oxygen and use of CO₂ is a key element during the Ageing part
- Good microbiological control



THANK YOU FOR YOUR ATTENTION

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