

Routing rosé freshness



Rosé wines and freshness

Over the past few years, rosé is the only wine colour to have achieved growth in terms of purchasing frequency, volume and value. In 2018, rosé wines already represented 28% of still wine volume, but 33% in terms of value (as a comparison, at the time, white wines made up 21% in volume and 19% in value). These trends warrant special attention being paid to production processes.

Often considered as being one of the most technical of winemaking processes, developing rosé wines is subject to very specific requirements, all revolving around the notion of freshness – part and parcel of their threefold essence:

- Visual: aiming to achieve precise colour, despite the vulnerability factor associated with it,
- Olfactory: developing and preserving aromatic freshness in the form of various sensory expressions,
- Taste: highlighting freshness and tension, roundness and limiting bitterness.

These trends warrant special attention being paid to production processes. Affected by the great diversity in wine varieties, the situation is made even more complex by considerations.

The visual aproach in the rosé wine vinification process: a balancing act and priority

Major market share favours rosé wines that have a pale but marked colour, with a trend towards a hue that is increasingly less orangey or yellow. In practice, this dual result is not easy to achieve and comes up against variable raw material (wine variety, maturity, yield) and processing parameters.

Certain stages require particular attention, and this is true across the spectrum of routes:

- High temperatures foster diffusion of the skin's coloured substances: there is a consequent need to harvest grapes that are healthy and cool (<15°C). Moreover, low temperature makes it possible to generally slow down oxidases, which have a catastrophic effect on the vividness of colour. Where this aspect is concerned, the ability to control cool temperatures is vital.
- Be careful to mechanical actions: occurring during the various stages of harvesting, transport, transfer to presses, destemming and crushing, pressing cycle..., these actions affect the integrity of the grapes and foster contact between skins and juice. They play an essential role in extracting colouring material. When harvesting, double-bottom dumpsters are recommended. Pressing must be gentle and selective: use enzymes in the press, adapting the pressing programme (low pressure) to avoid extraction of colour and tannins. The press needs to be inerted when being filled.

- Adding inactivated yeasts rich in glutathione, in the prefermentation phase (grape, juice), provides extra antioxidant protection and significantly reduces yellowing. It is highly recommended for grape varieties such as grenache or cinsault, known for their low levels in glutathione and high levels of phenol acids, or for juice cold stabulation with grape lees.
- Eliminating colour in excess and/or responsible for producing advanced yellowing: selective and innovative fining agents are now available and can be used early on in the process, as is often recommended, or in a more curative way with wines. Some of them, derivatives of chitin, also represent alternatives to products of animal origin, and allergenic or synthetic products.
- Fermentation: remember that loss of colouring intensity is on average around 50% during AF, with significant variations from one tank to the next, depending on yeast, alcohol level, acidity and tannins.
- **Stabilisation:** certain end-of-process practices are harmful to the colour of rosé wines. This crucial stage could be carried out using gentler tools. In particular, the presence of SO₂ causes discolouration of anthocyanins and undervaluation of redness, which is partially reversible.

Maintaining aromatic freshness, across the spectrum

Pre-fermentation, antioxidant operations, as described above, are equally important for maintaining aromatic freshness.

Generally, where grapes are concerned, or during stabulations on lees expressing thiol profiles, microbiological bioprotection and/or sulphiting operations are required to limit risks of triagering fermentation too soon, as well as preventing undesirable microbial developments.

Subsequently, various fermentation routes make it possible to adapt to the harvest's aromatic potential but also achieve the sought-after sensory aim for rosé wines. Controlling aromatic orientation is now possible, not only through choice of yeast, but also via the type of nutrient and the moment it is added, which significantly affect the yeast's aromatic metabolism.

If ageing is desired, the quality of lees must be checked.

Freshness on the plate: between acid balance and roundness

Clearly, perception of acidity has a leading role when freshness is being defined and rebalancing should be considered. The aim is also, where rosé wines are concerned, to reduce certain aggressive sensations, without making the wine heavy. There are two approaches:

- using subtractive techniques, such as fining, which eliminate polyphenols that are overreactive at a sensory level;
- using additive techniques, which limit taste reactivity of these substances by mechanisms of interaction with molecules that «enclose»
 or stabilise them, such as polysaccharides for example. Formulations based on yeast manno-proteins are particularly
 suitable in such cases.



Dedicated technical routes for each product-aim, in line with my constraint and requirements

The following pages propose various routing possibilities related to the main freshness profiles favoured for rosé wines. These routing processes do no claim to cover all situations, nor need to be followed in their entirety, but they do present technical options from which winemakers can build their own processes and achieve competitive edge, in line with their constraints requirements and aims.



Routing Rosé Freshness

Steps common to the different styles of rosés wines Steps specific to the style of rosé wine evoked by this colour



The perceived quality of a rosé wine is largely based on the freshness that characterizes it on three levels: visual, aromatic and gustatory. However, various aspects of this freshness are available to the winemaker through technical choices that guarantee quality and differentiation of the rosé wines.







THIOLS ROSÉS

Harvest grape carriers / Reception of harvests

PROTECT MY HARVEST

PROTECTION AGAINST OXIDATION

TANIN CRISTALLIN ™ 2 to 5 g/hL

MAXIMUM PROTECTION AGAINST OXIDATION



ESSENTIAL ANTIOXIDANT ™ 5 to 10 g/hL

BIOPROTECTION AGAINS **UNDESIRABLE FLORA**



PRESENT

GAÏA™ 7 to 10 g/hL

TRAP'

METALS ™

20 to 70 g/h



IOC CALYPSO ™ 7 to 10 g/hL

IOC CALYPSO™

7 to 10 g/hL

Reception of harvests / **Press**

EXTRACT MY FULL POTENTIAL / I PREPARE MY CLARIFICATION

CLARIFICATION



MYZYM READY EXTREM ™ 1 to 2 mL/hL

EXTRACTION AND REVELATION OF AROMATIC PRECURSORS IN PRESS OR IN STABULATION ON JUICE LEES



POTEC

MYZYM WHITE FRUITS ™ to 3 g/100 kg harvest

FULLPROTECT™

30 g/hL

Stabulation and/or clarification of juices

PROTECT MY MUST

> INOFINE V $^{\text{TM}}$ 10 to 40 g/hL

IF RIPE GRAPES AND JUICE RICH IN POLYPHENOLS



Qi FINE ™ 10 to 40 g/hL IF FLOATATION



Qi UP XC MES TM 5 to 15 cL/hL

ELIMINATE OXIDISED / OXIDISABLE SUBSTANCES

> RESTORE MY FRESHNESS BALANCE





IOC BOREAL ™ 25 g/hL

Yeast rehydration

Biological acidification

& complexity

PROTECT MY YEASTS

FT°<16°C OR MUSTS < 100 NTU **ACTIPROTECT ROSÉ ™**

30 g/hL in rehydration (strenghtens the yeast for optimum assimilation of aroma precursors)

Yeast 20 g/hL

SELECT THE AROMATIC POTENTIAL TO BE

IOC B 2000 TM Strawberry, banana Acetate esters



14-18°C

IOC FRESH ROSÉ ™ Pineapple, flowers, spices, esters, terpenols...

IOC RÉVÉLATION 60-100 N THIOLS ™ 5-17°C Citrus, 3MH



IOC RÉVÉLATION 0-160 NT THIOLS ™ :18°C Passion fruits, guava

Nutrition

I GUARANTEE GOOD FERMENTATION KINETICS AND BRING OUT THE FULL AROMATIC POTENTIAL

PROMOTE THE WELLNESS OF THE YEAST AND REVEAL THE AROMAS



NATJJATM 40 g/hL after yeast inoculation

Qualitative fining after AF

OXIDATION/ BITTERNESS/ COLOUR

Qi FINE ™ 5 to 10 g/hL

CURATIVE

Qi No[Ox]™ 5 to 20 g/hL

Finishing wines befor bottling

ENHANCE AND PROTECT THE QUALITY OF MY WINE PROTECTION AGAINST OXIDATION



OR

FRESHNESS AND REDUCTION **OF BITTERNESS**



COATING AND SOFTNESS IN THE MOUTH



ULTIMA SOFT ™

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Routing Low SO₂ Solutions

Steps common to the diferent styles of rosé wines Steps specific to the style of rosé wine evoked by this colour



Knowing that freshness is the key word for rosé wines, it is all the more perilous to consider not using sulphites, thus running the risk of making the wine more vulnerable to both oxidation and microbial deterioration. Nevertheless, there are technical tools which, combined with increased care and monitoring, help to reduce the sulphite content of rosé wines.



ESTERS ROSÉS



THIOLS ROSÉS

Harvest grape carriers / Reception of harvests

PROTECT MY HARVEST



FULLPROTECTTM



ESSENTIAL ANTIOXIDANT ™ 5 to 10 g/hL

BIOPROTECTION AGAINS **UNDESIRABLE FLORA**



GAÏA ™



IOC CALYPSO ™ 7 to 10 g/hL

Reception of harvests / **Press**

EXTRACT MY FULL POTENTIAL / I PREPARE MY **CLARIFICATION**

CLARIFICATION



EXTRACTION AND REVELATION OF AROMATIC PRECURSORS IN PRESS OR IN STABULATION ON BOURBES



MYZYM WHITE FRUITS ™ 1 to 3 g/100 kg of grapes

Stabulation and / or clarification of juices

PROTECT MY MUST



FULLPROTECT™ 15 g/hL (30 g/hL if not added to the skip) I BIOPROTECT MY AROMATIC



IOC CALYPSO ™ 7 to 10 g/hL

ELIMINATE OXIDISED / OXIDISABLE SUBSTANCES



Qi FINE ™ 10 to 40 g/hL IF FLOATATION



IF COPPER PRESENT

TRAP'METALS™ 20 to 70 g/hL

acidification & complexity gain

RESTORE MY FRESHNESS BALANCE





IOC BOREAL ™

Yeast rehydration

PROTECT MY YEASTS MUST < 100 NTU

optimise the assimilation of the flavour precursors)

ACTIPROTECT ROSÉ ™ 30 g/hL in rehydration (reinforces the yeast to

Yeast inoculation 20 g/hL

SELECT THE AROMATIC POTENTIAL TO BE

50-130 NTU 12-18°C



IOC BE FRUITS ™ Straawberry, banana, esters, without SO₂ 60-100 NTU 15-18°C



In AF co-inoculation

ANTICIPATE UNWANTED EARLY MLF (if pH sensitive)

ENSURING A MLF WITH NO BUTTERY NOTES NOR DEVIATIONS

EXTRAFLORE PURE FRUIT ™

EXTRAFLORE CO'IN ™

Nutrition

FERMENTATION AND THE REVELATION OF THE AROMATIC POTENTIAL



NATJJA™

BEGIN AF



GLUTAROM EXTRA ™ 20 g/hL (enrichment of wine with glutathione)

Qualitative fining after

OXIDATION/ BITTERNESS/ COLOUR

Qi FINE ™ 5 to 10 g/hL

CURATIVE

Qi No[Ox]™

Protection and finishing wines before bottling

ENHANCE AND PROTECT THE QUALITY OF MY WINE

PROTECTION AGAINST OXIDATION



ULTIMA JUMP ™ 5 to 10 g/hL

Routing Rosés as bases for sparkling wines

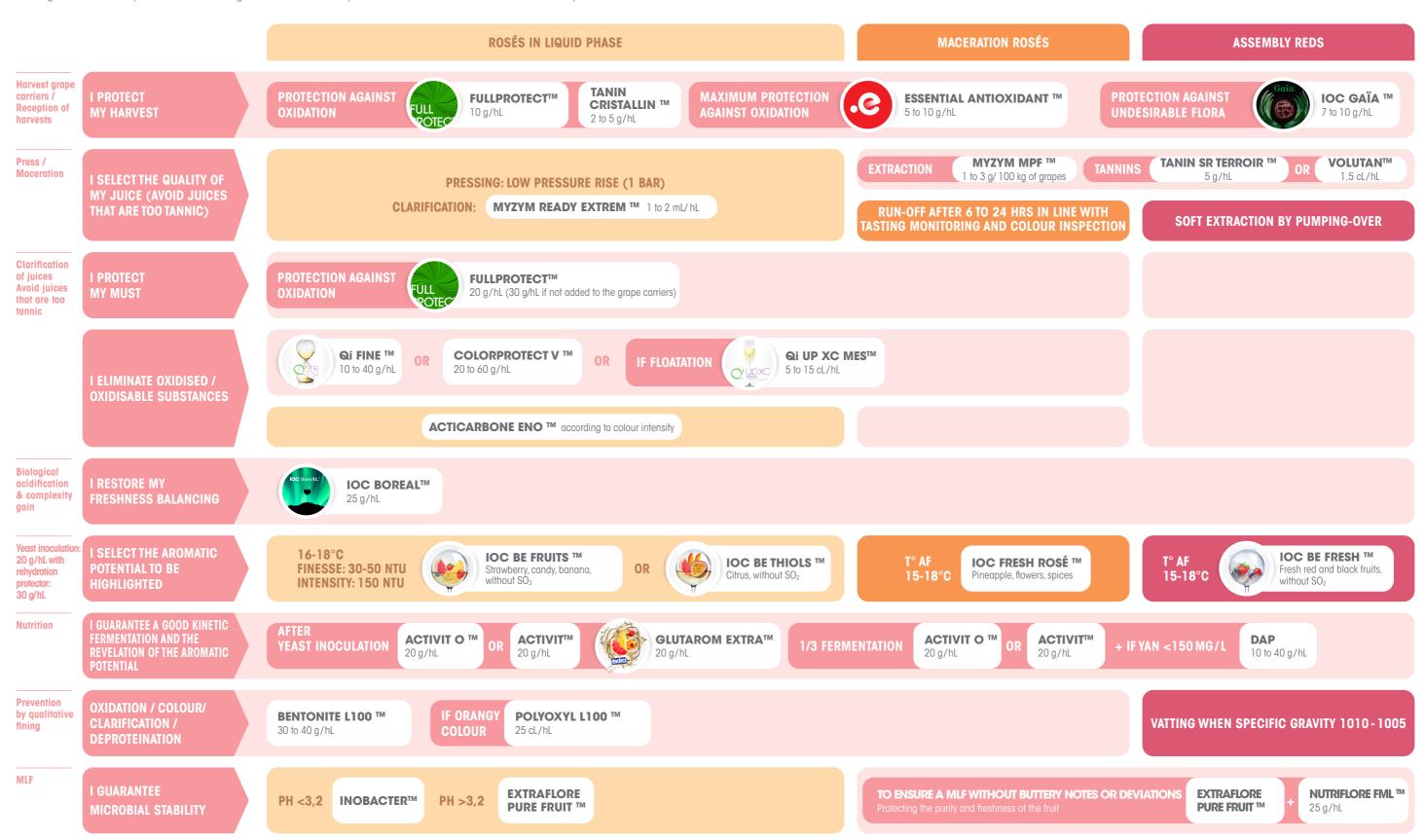
Steps common to the diferent styles of rosé wines

Steps specific to the style of rosé wine evoked by this colour



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The production of a sparkling wine, whether rosé or not, must be motivated by the desire to create a product. It is then necessary to define the profile and make the necessary choices, as soon as the harvest is done: grape variety, level of ripeness, and to remain clear-sighted with regard to the sanitary state. Certain oenological choices are then specific to these wines intended for the secondary fermentation.



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regulations are available.

Routing organic EU & NOP

Organic and/or NOP vinification imposes additional constraints on the rosé winemaker. Some alternatives compatible with these

Steps common to the diferent styles of rosé wines

Steps specific to the style of rosé wine evoked by this colour



AMYL ROSÉS THIOLS ROSÉS Harvest grape PROTECTION AGAINST carriers / TANIN CRISTALLIN ™ MAXIMUM PROTECTIO BIOPROTECTION AGAIN IOC CALYPSO ™ **PROTECT ESSENTIAL ANTIOXIDANT ™** GAÏA ™ **Reception of** 2 to 5 g/hL AGAINST OXIDATION 5 to 10 g/hL **UNDESIRABLE FLORA** 10 g/hL **MY HARVEST** OXIDATION 7 to 10 g/hL harvests Reception EXTRACT MY POTENTIAL of harvests / MYZYM READY EXTREM ™ I PREPARE MY **CLARIFICATION Press** I to 2 mL/hL **CLARIFICATION** Stabulation PROTECTION AGAINST **PROTECT** and /or FULLPROTECT™ **IOC CALYPSO ™** clarification STABULATION NY MUST 30 g/hL 7 to 10 g/hL of juices POTEC IF RIPE GRAPES AND JUICE RICH ELIMINATE OXIDISES / QI UP XC MES V TM* INOFINE V TM Qi FINE ™ ' IF FLOATATION OU Qî IN POLYPHENOLS 10 to 40 g/hL 5 to 15 cL/hL OXYDABLE SUBSTSANCES 10 to 40 g/hL Biological acidification **RESTORE MY** IF INSUFFICIENT **IOC BOREAL** ™ & complexity FRESHNESS BALANCING aain Yeast ACTIPROTECT ROSÉ ™ **PROTECT** rehydration FT°<16°C OR 30 g/hL in rehydration (reinforces the yeast to MUST < 100 NTU **MY YEASTS** optimise the assimilation of the flavour precursors) Yeast **SELECT THE AROMATIC** IOC RÉVÉLATION IOC RÉVÉLATION IOC IOC B 2000 ™ **IOC BE FRUITS ™** IOC FRESH ROSÉ ™ inoculation 80-130 NTU 50-100 NTU 90-160 NTL POTENTIAL TO BE THIOLS ™ **BE THIOLS ™** THIOLS ™ Strawberry, banana, Strawberry, banana, Pineapple, flowers, spices, 20 g/hL 14-18°C 15-17°C :18°C without SO₂ esters, terpenols... Citrus, 3MH Citrus without SO esters Passion fruit, guava I GUARANTEE A GOOD KINETIC FERMENTATION ADN THE REVELATION OF THE AROMATIC **Nutrition** NATJJA™ * **ACTIVIT NAT ™** PROMOTE THE WELL-BEING OF THE YEAST **LIMIT AROMA INHIBITIONS AND** OR 40 g/hL after yeast After yeast inoculation: 20 g/hL AND REVEAL THE AROMAS SULPHUROUS ODOURS 1/3 AF: 20 g/hL inoculation POTENTIAL Qualitative XIDATION/ fining after Qi FINE TM* Qi No[Ox] TM* CURATIVE BITTERNESS/ 5 to 10 g/hL 5 to 20 g/hL COLOUR Finishing of **ENHANCE AND PROTECT** PROTECTION AGAINST OXIDATION COATING AND ULTIMA SOFT ™ wines before PROTECTION AGAINST **ULTIMA JUMP** ™ **ULTIMA FRESH** ™ OR **0U** bottling THE QUALITY OF MY WINE 2 to 10 g/hL 2 to 10 g/hL 5 to 10 g/hL SOFTNESS IN THE MOUTH

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^{*} Cannot be used in NOP "made with..."

Some key solutions for rosé wines



FULLPROTECT™ AND GLUTAROM EXTRA ™

Protecting aromas and colour of musts and rosé wines

FULLPROTECT™ is based on the synergy between the global reducing power of the inactivated yeast, its capacity to stabilise aromatic substances and pigments via links with polysaccharides and the antioxidant action of a tannin. GLUTAROM EXTRA ™ features a guaranteed, high level of reduced glutathione, a powerful nucleophile which limits secondary oxidations of colour and aromas. In rosé vinification, these two solutions are essential for preserving freshness.



ESSENTIAL ANTIOXIDANT ™

An extremely pure gallic tannin with a high antioxidant capacity

Selected in partnership with INRAE, Supagro Montpellier and the University of Montpellier, ESSENTIAL ANTIOXIDANT TM contains polyphenols that are very easily oxidized: it «sacrifices» itself to preserve the aromas and their precursors, while also allowing better inhibition of laccase activity. Does not add bitterness at recommended doses.



IOC CALYPSO ™

Revealing and protecting aromas during stabulation on lees

IOC Calypso $^{\rm TM}$ is a *Metschnikowia pulcherrima* yeast, selected for its specific enzymatic activity. Used during cold stabulation on lees IOC CALYPSO $^{\rm TM}$ is an innovative bio-protection tool specifically developed to limit the use of SO_2 . It has a specific enzymatic activity that reveals the aromatic precursors during stabulation in juices. It preserves the released aromas and the color of the wines from oxidation or from an early start to fermentation, to which the juices are particularly sensitive during cold stabulation.



Qi FINE ™ AND Qi UP XC ™

Chitosan-based innovations for clarifications which protect musts and wines

These static (Qi FINE ™) or floatation (Qi UP XC ™) fining aids both beneit from chitosan's antiradical (and consequently antioxidant) action, as well as its substancial capacities for interacting with oxidisable and oxidised polyphenols on account of its high load density. They therefore contribute towards preserving aromatic and visual freshnesss, but also foster a less aggressive tannic structure.

ACTIPROTECT ROSÉ ™

Protecting yeasts in order to bring out the aromas of rosé wines

As a latest-generation protective agent ACTIPROTECT ROSÉ ™ comes from a yeast strain selected for its exceptional capacity for producing sterols, autolysed in line with a dedicated process to concentrate these sterols and assembled with an inactivated yeast that is particularly rich in minerals and vitamins. This unique composition gives it a peerless capacity to strengthen the membrane of active yeasts during the rehydration process. The plasma membrane thus optimises membrane exchanges of must towards the cell, in particular of aromatic precursors. The yeast can then bring out the whole aromatic potential of the rosé must, without in any way jeopardising fermentation, including in stressful conditions (highly clarified must and low temperature).



IOC BE FRUIT ™ ET IOC BE THIOLS ™

The IOC BE $^{\text{TM}}$ yeasts, which are unable to produce SO_2 , are derived from an innovative marker-assisted cross-breeding technology. They benefit from the oenological and sensory heritage of high-quality yeasts, deeply characterized in terms of their aromatic contribution and conditions of use. The IOC BE $^{\text{TM}}$ yeasts thus combine these powerful organoleptic enhancement capacities with the inability to produce SO_2 . They also produce very little ethanal and very rarely H_2S .

