HOW TO ENSURE THE FRESHNESS OF WHITE AND ROSÉ WINES

White and rosé wines that are lively and fresh
on the nose as well as the palate, with a pleasant acidity.
These hedonistic tasting characteristics are sought after by wine consumers, as shown by the most recent studies.

However, climate changes like higher temperatures and drought result in grapes with higher sugar concentrations and lower acid concentrations. Phenolic and aromatic maturity also change and directly impact organoleptic characteristics.

As a result, the wines obtained have a **higher alcohol content and are less acidic, with heavier and sometimes less intense aromas – completely at odds with market expectations.**

WHITE WINE

ROSÉ WINE

Translating these sensory attributes into oenological terms is essential if we are to understand the issues at stake and come up with appropriate solutions.
Ensuring the freshness of wines implies **working on their acidity, making the most of their «fresh and fruity» aromatic potential and protecting them from oxidation**.

MARTIN VIALATTE® HAS IDENTIFIED 5 KEY MOMENTS, DESCRIBED AND SUPPORTED BY THE APPROPRIATE TOOLS IN THE PAGES THAT FOLLOW.

1 HOW TO MASTER GRAPE POTENTIAL

Achieve **oenological goals** by targeting problems in the vineyard with **nutritional biostimulants**

To obtain freshness of aroma or taste in wines, it is first necessary **to ensure and preserve the quality of the raw material, i.e., the grapes.**

From veraison until leaf fall, vines accumulate nutrients that will enable them to complete their cycle. If these reserves are not replenished, particularly as a result of adverse weather conditions, the smooth progress of stages such as flowering may be jeopardised. This key stage is necessary, for example, to **ensure the uniformity of the berries, as well as phenolic maturity and the aromatic potential** that will contribute to the freshness of the wines.

It may be advisable **to make nutritional corrections** at an early stage to protect the vine from stress and make up for any imbalances that may impact these key mechanisms.

	EFFECTS ON VINES	OENOLOGICAL IMPACT
oenoterrisfleur	Nourishes, rebalances and unblocks to ensure successful flowering	Uniform phenolic maturity, optimised aromatic potential
THEN		
oenoterrisarôme	Increased synthesis of cysteine sulphur derivatives as thiol precursors and reducing elements	Intense fruity ‘thiol’ aromatic profile

The importance of the **harvest date**

Assessing the maturity of the grapes is paramount to target **the right aromatic window**. It is possible to establish the optimum harvest date based on the desired aromatic profile with the help of **MaturOx**, a maturity index of the NOMASense™ PolyScan by WQS.

This tool uses voltammetric measurements to fingerprint the grapes, enabling us to **determine when sugar loading has stopped** and to define the **‘fresh fruit’** aromatic window.

2 HOW TO MANAGE AROMAS

Preventive and systematic microbiological control

At harvest time, biochemical reactions take place in the berry:

- **oxidation mechanisms caused by the enzymes that are present**
- **development of microorganisms that begin to break down sugars**

Preventing and limiting this development helps to preserve the organoleptic quality of the must.

This is all the more necessary in the current climate context.

Rising pH and the resulting drop in acidity is conducive to the development of these spoilage microorganisms.

RECEIVING THE HARVEST

KTS FA

A preparation made from **activated chitosan**, used as a **biocontrol agent** to **reduce** contamination caused by spoilage microorganisms.

WHY?

Quickly and effectively reduces indigenous microbial flora. Prevents masking of fruitiness by limiting the production of unpleasant tastes by these microorganisms.

WHEN?

As early as possible, ideally on the grapes. For whites and rosés it may be possible to repeat the application after settling if microbiological pressure is high.

HOW?

To spray on grapes, prepare a 5% solution and do not leave it out in the sun (chitosan deteriorates at T° > 40 °C).

Extracting aromatic precursors

The first step in the cellar is to **extract** from the grapes **the aromatic precursors** that will make up the fresh, fruity bouquet (thiols, esters). **Skin maceration, where possible**, optimises this extraction.

OPTION: SKIN MACERATION

Viazym MP

A pectolytic enzyme preparation for **extracting aromatic precursors from grapes and revealing certain aromas** during skin maceration. The facts that it does not contain cinnamoyl esterase **prevents the formation of volatile phenols**.

WHY?

To release aromatic precursors (terpenes, norisoprenoids, thiols) and reveal certain varietal aromas (terpenes, etc.).

WHEN?

On the gapes in the receiving bin, before pressing.

HOW?

10 °C < Temperature < 14 °C
from 6 to 12 hours at 2 g/hL.

Preserving aromatic potential

Once released, the precursors and free aromas in the grapes must be **protected from oxidation reactions**. Quinones, the products of these reactions, can cause aromatic compounds to precipitate during brown casse, resulting in a de facto **loss of aroma**.

Viazym CLARIF EXTREM

Concentrated pectolytic enzyme for fast clarification.

WHY? To obtain musts with low turbidity, low temperature (5°C) and low pH (from 2.8) regardless of grape variety or sanitary state.

WHEN? During static clarification of the must after pressing, or during flotation.

HOW? Dosage at 0.8 mL/hL.

SETTLING AND CLARIFICATION

KTS FLOT

DROP & GO

A **versatile plant-based fining** product with excellent results in flotation and static clarification, as well as for the **prevention of oxidation and correction of bitterness**.

WHY? To eliminate oxidised polyphenols (quinones) and easily oxidisable polyphenols (phenolic acids).

WHEN? During static settling or flotation.

HOW? Adjust turbidity levels according to aromatic goals: Thiols 100-150 NTU / Esters 80-100 NTU.

3 HOW TO MANAGE ACIDITY

Biological acidification

Vintages are increasingly hot and dry. This has the effect of **modifying the technological maturity** of grapes, which are marked by lower malic acid content and consequently **higher berry pH**. The end result is **lower total acidity in wines**, which undermines both microbiological stability and **acid balance, the key component of freshness**.

NEVEA™

AT THE END OF SETTLING

Pure ***Lachancea thermotolerans*** culture selected for its ability to **produce controlled levels of lactic acid from the moment it is inoculated**.

WHY?

To restore or improve acid balance while increasing total acidity. To add freshness and enhance the expression of fruitiness.

WHEN AND HOW?

Use sequentially with a *Saccharomyces cerevisiae* strain (at least 24 hours before and ideally 48 hours at a temperature of between 14 and 18°C for lactic acid production of 0.5-0.9 g/L at the end of AF).

4 HOW TO PROTECT AROMAS

Controlling oxidation phenomena

It is important to control oxidation phenomena at each stage of the winemaking process so as **not to jeopardise the longevity of the aromatic compounds.**

In must, **particular attention must be paid to copper** because it is an essential element for polyphenol oxidases to catalyse oxidation **reactions**. If copper concentration exceeds 1 mg/L, it is important to reduce it to under 0.5 mg/L in order to limit its impact on aromatic compounds, **particularly thiols whose -SH function directly reacts with copper**, making them precipitate.

BEFORE FERMENTATION BEGINS

Origin SH

PVP/PVI-based fining product.
Binds and eliminates heavy metals to **protect polyphenols from oxidation, preserve aromas and release reducing compounds.**

WHY?

To protect thiol-type varietal aromas from oxidative degradation.

WHEN?

Use on clean must before yeasting.

HOW?

Copper chelation and adsorption of phenolic acids, the main players in oxidation mechanisms.

BEFORE FERMENTATION BEGINS

NEO® CRISPY

A yeast product rich in reducing elements, it **protects from oxidation and preserves the wine's freshness potential.**

WHY?

To protect the aromas from oxidative degradation.

WHEN?

Just before alcoholic fermentation starts.

HOW?

Should be added to settled must. A very good sanitary state is imperative.

5 HOW TO REVEAL AROMAS

The importance of **sequential nutrition**

Nitrogen sources are fundamental for yeast metabolism because they will impact the type of transporters produced and **enable their assimilation** (permeases).

The assimilation of mineral nitrogen represses the activity of the permeases needed for the assimilation of amino acids and thiol precursors, **thereby limiting the release of aromatic compounds** (esters and thiols).

Organic nutrition, preferably in **split doses (10+10 or 20+20), ensures the proper assimilation of thiol precursors** by limiting catabolite repression of the NCR* system.

1 YEAST REHYDRATION

DROP & GO

NUTRICELL® INITIAL

An organic nutrient made from yeast autolysates, **rich in amino acids and sterols** for **high-quality, controlled AF**.

WHY?
To supplement the must with organic nitrogen and lipids in order to optimise the rehydration stage.

WHEN?
Added while preparing for yeasting.

HOW?
Consider a sequenced addition if the must is highly settled. Otherwise, add directly to the tank and then pump over.

2 MUST NUTRITION

NUTRICELL® AA

Complex organic nutrient to ensure **AF management and promote the production of volatile compounds.**

WHY?
To optimise the production of fermentation esters and to reveal thiols. Prevents nitrogen deficiencies, which are responsible for the production of H_2S and other sulphur compounds.

WHEN?
Add to the tank when yeasting, at the latest before 1/3 AF.

HOW?
Addition by pumping over.

Choosing the **yeast strain**

Because of its genetic characteristics, the strain of *Saccharomyces cerevisiae* chosen to carry out alcoholic fermentation must enable the targeted aromatic goal to be achieved, i.e, **a fermentation profile or a varietal profile**. For example, a strain like VIALATTE FERM® W28 will produce more beta-lyases, the enzymes that **release volatile thiols**. Others, such as SO.DELIGHT®, will promote a metabolism based on the assimilation of preferential amino acids and produce **larger quantities of higher alcohol acetates** (esters).

The choice of strain combined with the appropriate nutrition enable you to optimise the targeted aromatic pathway.

VIALATTE FERM® W28

Saccharomyces cerevisiae for the **production of a fruity 'thiol' aromatic profile.**

WHY?
To reveal volatile thiols.

WHEN AND HOW?
Yeasting. AF temperatures between 16 and 18 °C to promote thiols.

OR

DROP & GO

SO.DELIGHT®

Saccharomyces cerevisiae to **produce a fermentation aromatic profile.**

WHY?
To encourage the production of fermentation esters.

WHEN AND HOW?
Yeasting. AF temperatures between 13 and 16 °C to promote esters.

* NCR (Nitrogen Catabolite Repression) is the system that regulates nitrogen assimilation in yeast.

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