

ENARTIS NEWS PERFECT YOUR WINEMAKING STYLE

WE'LL SHOW YOU HOW.

Winemakers aim to express different varietal characteristics and terroir, those distinctive qualities and sense of place that make the wine unique. Balancing these goals, while being attentive to the different styles, preferences, and expectations of consumers can be a challenge. When considering a stylistic approach, winemaking practices can be just as important as variety, region, and climate.

Enartis has a wide range of protocols and tips to help winemakers integrate new tools and innovation into their personal styles.

ENOLOGICAL PRACTICES THAT AFFECT WINE STYLE

Some winemaking practices and stages have a greater impact on sensory profile than others. The first stages of vinification play a crucial role.

Grape maceration/pressing

The amount of extraction of natural compounds from grapes depends on the maceration, contact time, and level of pressing.

- ▶ Longer skin contact increases the extraction of aromatic precursors (primary aromas) and polyphenols such as tannins and anthocyanins that play a key role in color stabilization.
- ▶ The use of a maceration enzyme helps to accelerate this extraction, reducing the risk of oxidation and loss of natural compounds as well as aiding clarification and filterability.

Enartis maceration enzymes are developed to break down unstable grape proteins in the pre-fermentation stage that cause instability in finished white and rosé wines and color precipitation in red wines (*Table 1*).

Alcoholic fermentation

YEAST STRAIN

Major aspects of aroma expression depend on the enzymatic pool of each yeast strain. Most of the varietal or primary aroma compounds extracted from grapes are bound to other molecules like glucose (G), rhamnose (R), cysteine (Cys) and glutathione, preventing their loss (rendering them odorless). Depending on yeast activity, we can convert these odorless precursors into volatile compounds during alcoholic fermentation (*Figure 1*).

The quantity and quality of amino acids in must is another important factor in aromatic development during fermentation. Although grapes provide a natural source of amino acids, supplementing is a powerful tool.

OENOLOGICAL OBJECTIVE	TYPE OF WINE	ENZYME ACTIVITIES	ENARTIS ENZYMES
Increase aromatic intensity and complexity. Minimize post-fermentation bentonite fining addition.	White, rosé and sparkling base wines	<ul style="list-style-type: none"> +++ Cellulase and hemicellulase to accelerate extraction of aromatic precursors. ++ Secondary activities that improve protein stability. + Pectolytic activities to reduce juice viscosity and improve press yield. 	EnartisZym AROM MP
Color extraction and stabilization. Prevent tannin precipitation.	Red and rosé wines	<ul style="list-style-type: none"> +++ Cellulase and hemicellulase to accelerate polyphenol extraction from skins and promote their stabilization. ++ Secondary activities for limiting grape tannin precipitation. + Pectolytic activities to improve wine clarification and filterability. 	EnartisZym COLOR PLUS

Table 1: Enartis maceration enzymes according to the oenological objective and type of wine. +++ Highest activity; ++ Medium activity; + Lowest activity.

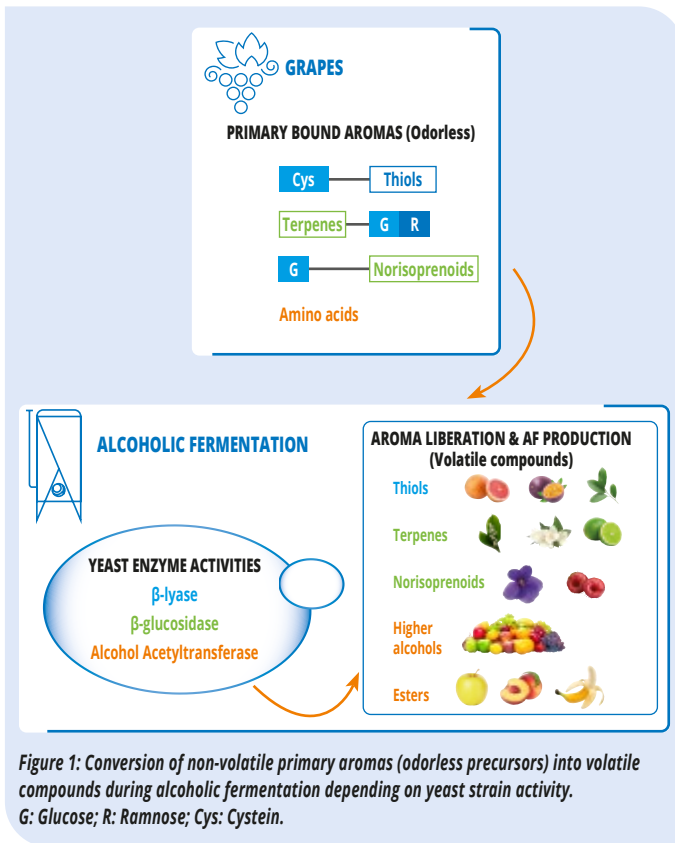


Figure 1: Conversion of non-volatile primary aromas (odorless precursors) into volatile compounds during alcoholic fermentation depending on yeast strain activity. G: Glucose; R: Rhamnose; Cys: Cysteine.

YEAST NUTRITION

It is essential to have balanced nutrition and provide the proper elements to guarantee optimal yeast health and biomass production. It also improves the sensory profile by producing desired aromatic compounds and helps avoid fermentation problems and development of off-flavors (read this newsletter to learn more: [The importance of balanced nutrition](#)). Enartis has developed precise blends of nutrients with amino acids to achieve specific stylistic goals (Table 2).

WINE STYLE	NUTRIENT COMPOSITION	CERTIFIED BY ENARTIS
Varietal, Mineral, Thiolic Wine	Rich in essential amino acids , vitamins, and microelements to ensure optimal yeast growth.	NUTRIFERM ULTRA
Fruity, Tropical, Floral, Complex Wine	Rich in aromatic amino acid precursors (stimulate ester production), vitamins and microelements to guarantee ideal yeast performance.	NUTRIFERM AROM PLUS

Table 2: Enartis Easutech nutrients' composition requirement depending on the desired wine style.

FERMENTATION TEMPERATURE

Fermentation temperature plays an important role in the enhancement, transformation, and production of aromas. The unique enzymatic activity of different yeast strains (Figure 1) and the temperature of the fermentation strongly influence the aromatic profile of wine (Table 3).

TEMPERATURE RANGE	OBJECTIVE	WINE STYLE
12-15°C	<ul style="list-style-type: none"> Greater ability to synthesize higher alcohols such as 2-phenylethanol (floral notes). Promote terpene and norisoprenoid expression by yeast glycosidase activity without promoting excessive esters that could mask varietal or citrus character. Stimulate thiol expression by yeast beta-lyase activity and the conversion of 3-mercaptohexanol (passion fruit, guava, grapefruit). 	Floral, Varietal, Citrus, Thiolic
13-16°C	Produce higher alcohols and prevent their loss.	White Fruit
16-20°C	Favor the ability of yeast to synthesize esters from higher alcohols.	Stone Fruit, Tropical
20-24°C	Promote the production of esters.	Fruity
24-28°C	Higher extraction of grape compounds (primary aromas).	Varietal, Spicy, Thiolic
>28°C	Help eliminate methoxypyrazines (green characters). * EnartisFerm D20 is the best yeast that allows fermentations at high temperatures without loss of aromas.	Full-bodied

Table 3: Fermentation temperature by desired wine style. white wines red wines.

YEAST DERIVATIVE & TANNIN ADDITION

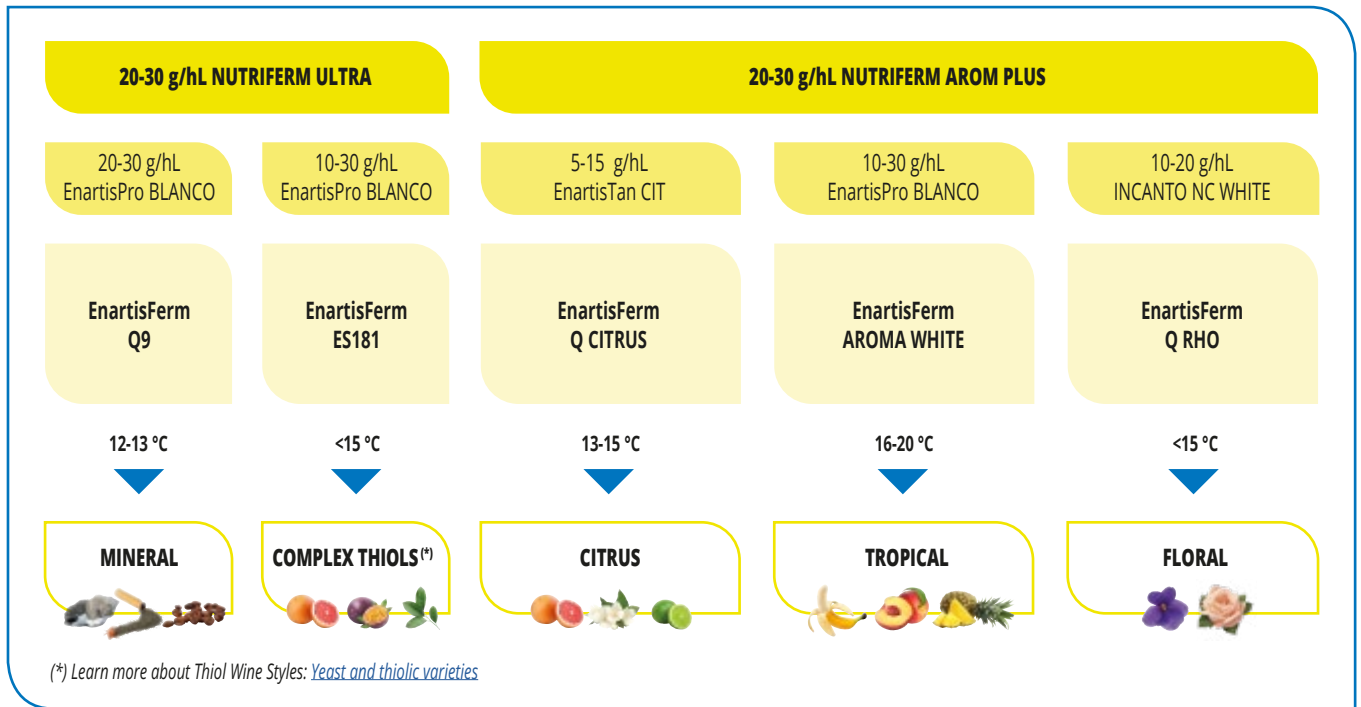
Enhance and stabilize varietal and/or fermentation aromas during alcoholic fermentation in order to obtain higher aromatic complexity, colloidal structure, color intensity, and persistence over time (shelf-life).

EnartisPro and **INCANTO NC** ranges during alcoholic fermentation help:

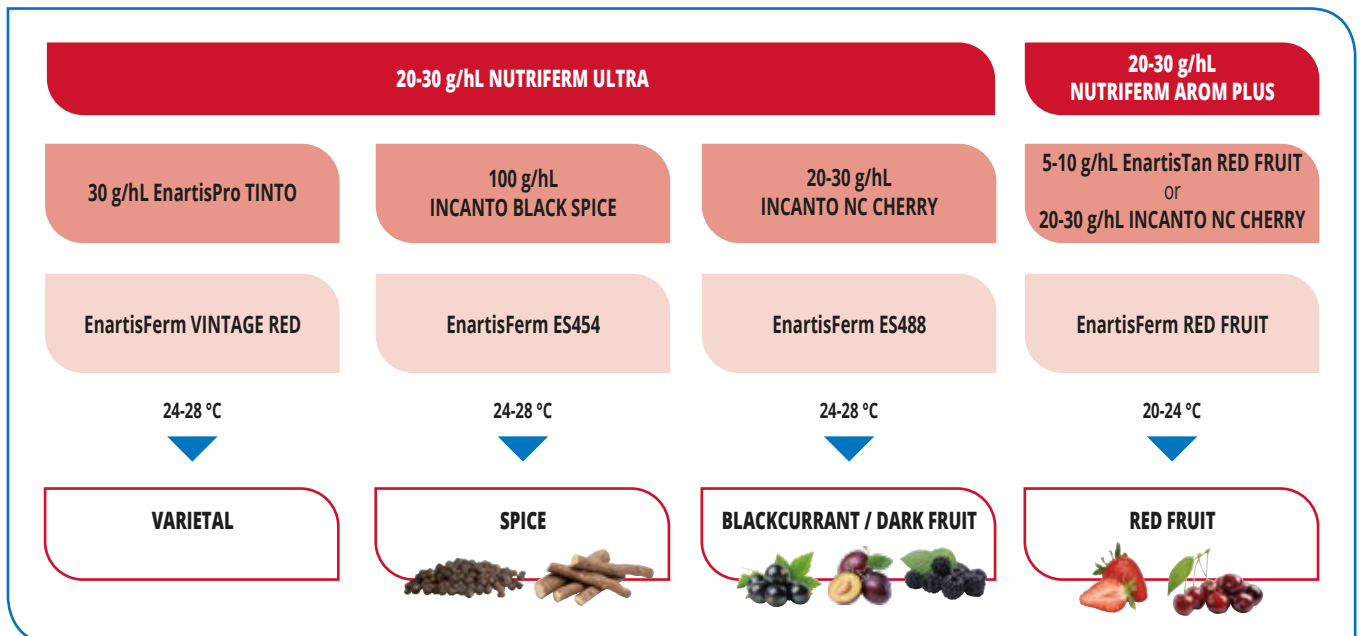
- ▶ Minimize the loss of aroma caused by CO₂ stripping effect by preventing the loss of aromatic compounds.
- ▶ Increase antioxidant protection.
- ▶ Stabilize aroma and color compounds.
- ▶ Enhance fruit aromas.
- ▶ Avoid off-favors.
- ▶ Increase volume and softness sensations.
- ▶ Protect and stimulate thiol production.

ENARTIS PROTOCOLS

WHITE WINE STYLES



RED WINE STYLES



The recommended dose for yeast inoculation is 20-40 g/hL. The highest dosages are suggested in cases of rotten grapes, high sugar content and difficult microbiological conditions.

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