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ENARTIS NEWS
PREVENTING PINKING DURING HARVEST

Pinking, or the appearance of abnormal pink colouring in white wines, is a frequent fault in varieties such as Sauvignon Blanc, Chenin Blanc, Chardonnay and Colombard. The potential risk of this defect appearing at bottling depends on the conditions adopted during the pre-fermentation phase.

WHAT IS PINKING?

Pinking refers to a pink colour appearance in white wines after contact with air. The intensity of the pink varies from pinkish to salmon-red blush and normally does not result in any change in wine aroma and taste, only colour.
Although the exact mechanism is not yet well known, wine exposure to oxygen and phenols are involved. Recent studies conclude that the compound responsible for this fault is the anthocyanin malvidin-3-O-glucoside present in small concentrations (~ 0.3 mg/L) in white wines produced under reductive conditions. That is why, wines produced under reductive conditions are among the most susceptible.

WHAT ARE THE FACTORS INCREASING WINE PREDISPOSITION TO PINKING?

Grape variety

Studies conducted in several wine-growing countries have shown that there is a varietal predisposition to pinking affecting many different white grape varieties. Not only Sauvignon Blanc, the most sensitive, but other varietals such as Chardonnay, Chenin Blanc, Colombard, Semillon, Pinot Gris, Verdejo and Riesling should be included in the list of those of major international importance.

Grape ripeness

According to a recent study made at Nietvoorbij Institute in South Africa, the potential for pinking increased with the degree of ripeness. This can be explained with a greater accumulation of phenols in the berry and their increased extractability as grapes ripen.

Pressing and skin contact

Any process that leads to a greater extraction of phenolics potentially increase wine susceptibility to pinking: high number of press rotations, high press pressure, presence of stems, skin contact, duration of skin contact, etc.
Additionally, temperature has an influence: cold temperature at crushing, pressing and during skin contact seems to increase pinking potential. This may be due to a higher solubilization of oxygen into the juice that at higher temperature causes oxidation and appearance of the pink colour.

Reductive conditions

As already mentioned, pinking occurs more frequently in wines made in reductive conditions. The use of dry ice, inert gases, SO_2 and ascorbic acid during vinification helps to preserve a higher phenolic content in the wine that, if accidentally exposed to oxygen during cellaring and bottling, are more prone to oxidative phenomena such as pinking and browning. When adopting reductive vinification, it is crucial to protect wine from oxygen till packaging.

HOW TO PREVENT PINKING DURING HARVEST?

Besides the careful choice of harvest time and vinification conditions, juice fining strategy can significantly reduce the risk of pinking.
According to Ugliano, juice treatment with a combination of pea protein and PVPP is very effective in preventing wine pinking.
Removing copper by PVI/PVP addition can be another approach. Pinking is the result of a non-enzymatic oxidation or chemical oxidation of phenolic compounds in which copper and iron play a key role. Lowering the concentration of these metals, PVI/PVP co-polymers can mitigate the risk of pinking.

Fining agents that can be used during juice settling or fermentation to minimize the risk of pinking

Product	Composition	Recommended Dosage
COMBISTAB AF	Pea protein and PVPP.	20-50 g/hL
CLARIL AF	Bentonite, PVPP and pea protein.	50-150 g/hL
CLARIL HM	Chitosan and polyvinylimidazole/polyvinylpyrrolidone (PVI-PVP).	30-50 g/hL
ENARTISPRO FT	PVI-PVP and inactivated yeast rich in immediately available mannoproteins and sulfur-containing amino acids.	30-50 g/hL
ENARTISPRO XP	PVI-PVP and inactivated yeast rich in immediately available mannoproteins.	30-50 g/hL

HOW TO DETECT IF A WINE IS SUSCEPTIBLE TO PINKING?

There are various assays for pinking around the world, all variations of the test established by Simpson in 1977 that are based on the measurement of an increase of optical density at 500 nm induced by the addition to the wine of a solution of hydrogen peroxide. The test can take between 8 and 24 hours.
If you don't have time and are satisfied with a rough estimate, try the following test.

PINKING TEST

Quick Method

1. 150 mL of the test wine
2. 0.375 mL of 3% hydrogen peroxide
3. Place in laboratory oven at 40°C for 15 min.

If the wineis subject to pinking, the color will be pink at the end of the test.

HOW TO PREVENT PINKING IN WINE?

When wine is susceptible to pinking,

- Limit oxygen exposure.
- Protect wine by increasing free SO_2 content up to 40-45 mg/L.
- Remove pinking precursors by fining with PVPP, potassium caseinate or carbon.
- At bottling, use ascorbic acid in conjunction with SO_2.

CITROSTAB rH

Pre-bottling coadjunct with a balanced formulation made of ascorbic acid, citric acid, potassium metabisulfite and tannin. It is recommended to protect bottled wine from undergoing alteration caused by oxidation: pinking, iron haze, premature and atypical ageing. Each component in the blend reacts in synergy with the others in a calibrated way to block any oxidation that could occur due to oxygen absorption during bottling. **Citrostab rH** can be used also during bulk wine storage protecting the wine every time it undergoes an operation that causes oxygen absorption.
Application: *bottling; prevent oxidation; prevent pinking; stabilize redox potential; wine shelf life improvement*
Dosage: *10-50 g/hL*
Packaging: *1 kg*

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