

# FULLPROTECT

## SPECIFIC INACTIVATED YEAST

Protecting must and harvests from oxidation of colour and aromas.



### ↓ OENOLOGICAL APPLICATIONS

Yeast lees have significant natural reducing power. **FULLPROTECT** comprises a dedicated, inactivated yeast which fosters stabilisation of pigments and aromas, limiting the extent to which these oxidise and develop. Bonds are formed between these substances of interest and certain cell wall macromolecules (such as manno-proteins) of inactivated yeast, reducing sensitivity during secondary oxidations.

Designed for producing white or rosé wines, the **FULLPROTECT** formulation combines the synergy existing between these mechanisms and the oxidative protection provided by a selected tannin. The presence of these dedicated polyphenols, which are easily oxidisable and consequently highly reactive, enables them to become the preferred substrate for enzymatic activity during primary oxidations. Secondary oxidations are consequently significantly more limited than in cases of exclusive oxidative attack of grape must phenols. As a winemaking aid, this tannin also helps clarify musts.

Added early on to harvests or musts straight from the press, **FULLPROTECT** makes it possible to:

- limit the extent to which the orangey-yellow component in white or rosé wines develops;
- preserve sensitive aromas, particularly varietal thiols.

**FULLPROTECT** consequently provides additional alternative leverage for limiting the use of SO<sub>2</sub>.

### ↓ DOSE RATE AND INSTRUCTIONS FOR USE

- Dosage: 30 g/hL in one dose or fractioned to cover various sensitive stages from an oxidative point of view.
- When to add: on fresh harvest, in the press, coming out of the press, at the beginning of sedimentation.
- Place **FULLPROTECT** in suspension in 10 times its volume of water or must and mix thoroughly. Add to the harvest or must, checking for good dispersal (e.g. by successive additions in a solid mass or when beginning to fill the tank from the press), and being careful not to allow any air to enter.

### ↓ OENOLOGICAL CHARACTERISTICS

- Dedicated inactivated yeasts (*Saccharomyces cerevisiae*): content in organic nitrogen < 9.5% of dry matter (equivalent nitrogen).
- Selected gallic tannin: total phenol content > 65%.

### ↓ PACKAGING AND STORAGE

- 1 kg

To be stored in a dry, odour-free place, between 5 and 25°C. Once the bag has been opened, the product must be used quickly and cannot be kept. Once prepared, the formulation must be used immediately.

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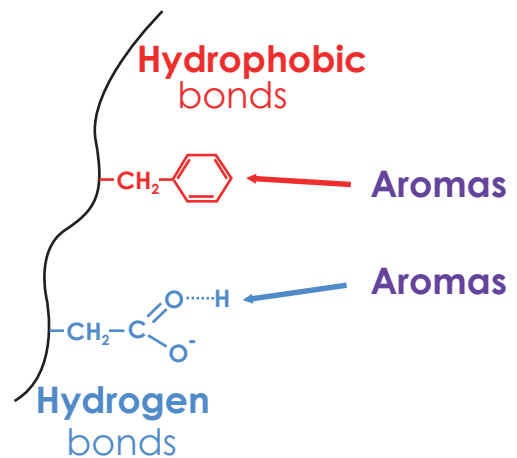
## STABILISING BONDS BETWEEN WALL CELL YEAST CONSTITUENTS AND AROMATIC COMPOUNDS, PROVIDING A PROTECTIVE EFFECT

Various research works have shown possible interactions between proteins, polysaccharides or yeast manno-proteins and wine aromas, which can take two forms:

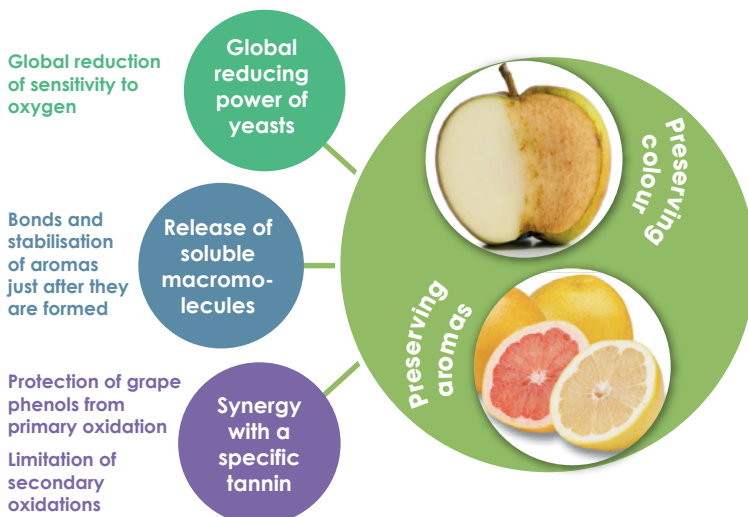
- Hydrogen bonds, between the hydrophilic parts of the macromolecule and the polar parts of aromatic compounds;
- Hydrophobic bonds between the most apolar aromas and certain amino-acids or "hydrophobic pockets" of protein parts.

These two types of bonds are qualified as being weak, but stabilising. They are linked to solubility, retention and volatility of aromas. In fact, some of them make it possible to extend the length of life of these aromas in wine, as well as increase the sensation of aromatic length on the palate.

Adding **FULLPROTECT** at the pre-fermentation phase provides early release of soluble macromolecules, which stabilise aromas as they are formed in the must.



## A WINNING SYNERGY WITH A SELECTED "SACRIFICIAL" TANNIN



Beyond the impact of macromolecules, the efficacy of **FULLPROTECT** results on the one hand from the global reducing power of a lees-alternative, and on the other hand from a tannic fraction which ensures protection of the must's oxidisable polyphenols.

During primary oxidations, oxygen forms hydroxyl radicals which oxidise phenol acids to quinones. It is these quinones which then go on to oxidise aromas and produce tanning of colour [secondary oxidations].

The tannin released in the must by **FULLPROTECT** is preferentially oxidised by the hydroxyl radicals, thereby, during the oxidising process, preventing the formation of quinones and consequently reducing phenomena of secondary oxidation.

Combined with strategies and tools developed by IOC to control oxidation and microbiological contaminations, whether during pre-fermentation, fermentation or elevage stages, **FULLPROTECT** is a powerful lever for reducing SO<sub>2</sub> concentrations.

