

LYSOZYM

Enzyme with endo-glucosidase activity; hen egg white extract. Delays or prevents malolactic fermentation by degrading lactic bacterial cell walls (Gram +).

Substance from hen egg presenting a potential allergenicity. The use of this product may cause an «allergen» labeling.

Qualified for the elaboration of products for direct human consumption in the field of the regulated use in Oenology.

Natural product, GMO and preservative free. In accordance with the regulation (EU) 2019/934 and the food chemical Codex.

SPECIFICATIONS AND OENOLOGICAL APPLICATIONS

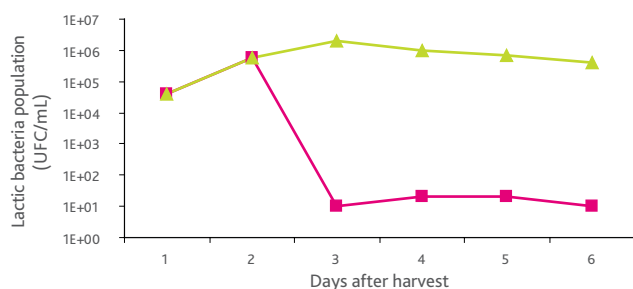
- **LYSOZYM** acts on the cell walls (peptidoglycan) of lactic acid bacteria (*Cenococcus, Lactobacillus, Pediococcus*) and causes bacterial lysis in musts and wines.
- In white wines, **LYSOZYM** delays or prevents malolactic fermentation (MLF) and reinforces SO₂ action.
- On red wines, **LYSOZYM** prevents the premature start-up of MLF under the cap during long macerations (sluggish or stuck alcoholic fermentations) and reduces the level of volatile acidity.
- **LYSOZYM** has no effect on yeasts (no interference with alcoholic fermentation) and no effect on acetic acid bacteria.
- **LYSOZYM** is neutral in terms of taste and avoids the organoleptic deviations attributed to certain bacterial metabolites, especially the formation of biogenic amines.
- **LYSOZYM** can be used preventively in the case of high pH musts and with low acidity that favours the growth of lactic acid bacteria.
- **LYSOZYM** can be used preventively in the case of musts with high pH and low total acidity, which are conditions that promote the development of indigenous lactic acid bacteria.

EXPERIMENTAL RESULTS

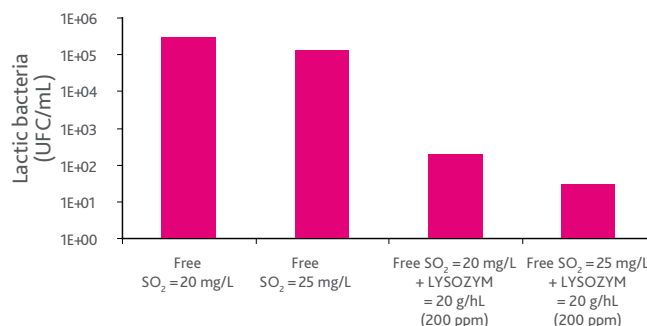
Bacteria control test on a Cinsault rosé must (pH = 3.78).

Green : SO₂ = 6 g/hL (60 ppm) without **LYSOZYM** treatment.

Rose SO₂ = 6 g/hL (60 ppm) with 40 g/hL (400 ppm) of **LYSOZYM** at D+2.



Analysis 30 days following MLF in a red wine (Petit Verdot pH = 3.85)



At AF completion D+6.

Without **LYSOZYM**: Acetic acid = 0.68 g/L - D-lactic acid = 0.72 g/L .

With **LYSOZYM**: Acetic acid = 0.34 g/L - D-lactic acid = 0.22 g/L.

PHYSICAL CHARACTERISTICS

Aspect granulates

Colour pale cream

Solubility (%) ≥ 95

Activity (FIP/mg protein) ≥ 39000



LAFFORT

L'œnologie par nature

CHEMICAL AND MICROBIOLOGICAL ANALYSIS

Total Nitrogen (%).....	17.3 ± 0.5	Yeasts (CFU/g).....	< 10 ²
Sulphur ashes (%).....	< 1.5	Lactic acid bacteria (/10 g).....	none
Water content (%).....	< 6	Acetic acid bacteria (CFU/g).....	< 10 ²
Total viable germs (CFU/g).....	< 10 ³	Heavy Metals (ppm).....	< 10
Coliforms (CFU/g).....	< 10	Lead (ppm).....	< 2
<i>E.coli</i> (/g).....	none	Arsenic (ppm).....	< 1
<i>Salmonella</i> (/25 g).....	none	Mercury (ppm).....	< 1

PROTOCOL FOR USE

OENOLOGICAL CONDITIONS

- Do not use **LYSOZYM** in combination with metatartaric acid, cellulose gums (haze formation) and bentonites (enzymes are irreversibly deactivated by bentonite).
- Do not use **LYSOZYM** at excessively low (< 5°C) or excessively high (> 30°C) temperatures.
- Does not protect against oxidation.
- Relevant microbiological stability of the wine following MLF is achieved 2 weeks after **LYSOZYM** addition at the recommended dosage.
- Wines treated with **LYSOZYM** must be protein-stabilised (bentonite treatment) before bottling. It is recommended not to treat with **LYSOZYM** just before bottling (risk of protein casse).

IMPLEMENTATION

Dissolve **LYSOZYM** directly in 5 to 10 times its weight in water. Incorporate using an **OENODOSEUR**[®], a dosage pump or a feeding drip for good homogenisation. Otherwise, carry out a light homogenisation pump-over.

STORAGE RECOMMENDATION

- Store above ground level in a dry area not liable to impart odours. Ensuring stock is kept at a moderate temperature, in its original, unopened packaging.
- Optimal date of use: 3 years.

DOSAGE

Minimum contact time is dependent on the temperature of the wine, the tannin and colloid content and also the dosage used, with a minimum of 2 days. Early addition (at the end of AF) is recommended for optimal effect.

Whites: 25 to 50 g/hL (250 - 500 ppm) for partial or total MLF inhibition respectively.

Reds: 10 to 15 g/hL (100 - 150 ppm) to avoid premature MLF; 20 to 30 g/hL (200 - 300 ppm) for improved microbiological stabilisation following MLF.

Reds and whites: 20 to 30 g/hL (200 - 300 ppm) to limit the development of lactic acid bacteria in the case of stuck or sluggish fermentation (risk of lactic spoilage).

In the case of inoculation with **LACTOENOS**[®] bacteria, in order to suppress residual **LYSOZYM** activity, the bacteria should be added after:

- racking the wine to eliminate lees (for red wines).
- bentonite fining, (for white wines).

EU regulation: Maximum dosage EU: 50 g/hL (500 ppm).

PACKAGING

1 kg bag – 10 kg box.

