

## LYSOGRAM+

**Inhibits malolactic fermentation  
Bacterial stabilization of musts and wines**

### CHARACTERISTICS

**Lysogram+** is a lysozyme-rich preparation, an enzyme with properties discovered by Alexander Fleming in 1922. It is used in bacteriology since it destroys the cell wall of Gram<sup>+</sup> bacteria, such as lactic acid bacteria.

### OENOLOGICAL PROPERTIES

Bacteria are characterized in particular by the composition of their cell wall: Gram<sup>+</sup> bacteria are distinguished from Gram<sup>-</sup> bacteria. Gram<sup>+</sup> bacteria such as lactic acid bacteria have a cell wall made up of a peptidoglycan, a lysozyme substrate, whereas in acetic acid bacteria, which are Gram<sup>-</sup>, this wall is protected by an external membrane.

The bacterial wall is a rigid barrier that enables the osmotic pressure to be preserved inside the cell. Under the action of lysozyme, the wall is pierced: the bacterial cell can no longer maintain its pressure and bursts.

Lysozyme is more active at a high pH, the optimum pH being 4.5. However, when the pH is high, microbial pressure is also higher.

### APPLICATIONS

- On a contaminated must: to limit the proliferation of lactic acid bacteria that may cause lactic spoilage.
- In the event of stuck fermentation, to avoid bacterial growth while limiting sulfiting, so as to maximize the chances of the added yeast completing fermentation.
- On wine undergoing fermentation: to control malolactic fermentation and avoid the risk of its onset before the end of alcoholic fermentation.
- On wine at the end of alcoholic fermentation: to avoid the action of indigenous bacterial flora and delay the onset of malolactic fermentation or prevent it.
- **Lysogram+** does not alter the organoleptic characteristics of wine, unlike SO<sub>2</sub>.
- **Lysogram+** makes it possible to reduce dosages of SO<sub>2</sub> without replacing it, since it has no reducing properties and is inactive against acetic acid bacteria and yeasts.

### DOSAGE

From 10 g/hL to 50 g/hL depending on the desired result, adding it in stages to avoid significant flocculation and the loss of part of the lysozyme (consult your oenologist).

Adding it in stages, for example 20 g/hL on must, then 30 g/hL on wine, provides improved stabilization of bacterial populations and better lysozyme activity than a single addition of 50 g/hL.

Maximum legal dose (EU): 50 g/hL.

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## INSTRUCTIONS FOR USE

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Dissolve the required amount in 10 times its weight of tepid water (around 25 °C) without stirring:

- Let it stand for 30 minutes before mixing gently.
- Add to the must or wine making sure that it is evenly distributed (fining connector). Failure to abide by this rule may cause the treatment to have absolutely no effect.
- Lysogram+ acts in the hours following its addition (caution: its effect is not persistent, unlike free SO<sub>2</sub>).
- Lysogram+ makes it possible to reduce dosages of SO<sub>2</sub>, but does not replace it. It is therefore recommended to add sulfur dioxide at the same time for its antioxidant action (in limited amounts).

### Precautions for use:

Product for oenological and specifically professional use.

Use in accordance with current regulations.

Allergen: Egg lysozyme

Lysozyme provides a significant amount of proteins: as a result, stability of white wines should be checked.

Any addition of metatartaric acid causes significant cloudiness in wine containing lysozyme.

It is not advisable to use lysozyme less than one month before bottling. The addition of lysozyme too late may cause cloudiness in the bottle.

## PACKAGING

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500 g jars in a 15 kg box.

## STORAGE

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Store unopened, sealed packaging away from light in a dry, odour-free environment. Once opened use rapidly.

Use before best-by date stamped on packaging.

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